

**DRAFT**  
**Air Individual Permit**  
**Part 70 Reissuance**  
**04900005- 004**

**Permittee:** Xcel Energy - Red Wing Generating Plant  
**Facility name:** Xcel Energy - Red Wing Generating Plant  
801 5th Street  
Red Wing, MN 55066-2760  
Goodhue County

**Expiration date:** [five years from issuance]

\* All Title I Conditions do not expire

**Part 70 Reissuance:** [Action Issue Date]

**Permit characteristics:** Federal; Part 70/ Major for NSR

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

This permit reissuance supersedes Air Emission Permit No. 04900005- 003 and authorizes the Permittee to operate the stationary source at the address listed above unless otherwise noted in the permit. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

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

*Signature:* ( )

*This document has been electronically signed.*

*for* Steven S. Pak, P.E., Manager  
Air Quality Permits Section  
Industrial Division

*for the* Minnesota Pollution Control Agency

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Permit issued: [month day, year]  
Permit expires: [month day, year]

**1. Permit applications table**

<b>Title description</b>	<b>Application receipt date</b>	<b>Action number</b>
Part 70 Reissuance	12/03/2008	04900005- 004
Administrative Amendment	03/27/2020	04900005- 004
Administrative Amendment	04/23/2024	04900005- 004

Permit issued: [month day, year]  
Permit expires: [month day, year]

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## 2. Where to send submittals

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

Chief Air Enforcement  
Air and Radiation Branch  
EPA Region V  
77 West Jackson Boulevard  
Chicago, Illinois 60604

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

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

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

Send any application for a permit or permit amendment to:

Fiscal Services – 6<sup>th</sup> Floor  
Minnesota Pollution Control Agency  
520 Lafayette Road North  
St. Paul, Minnesota 55155-4194

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

- a. Accumulated insignificant activities
- b. Installation of control equipment
- c. Replacement of an emissions unit, and
- d. Changes that contravene a permit term

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

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

**Or**

Email a signed and scanned PDF copy to:

[submitstacktest.pca@state.mn.us](mailto:submitstacktest.pca@state.mn.us)

*(for submittals related to stack testing)*

[AQRoutineReport.PCA@state.mn.us](mailto:AQRoutineReport.PCA@state.mn.us)

*(for other compliance submittals)*

(See complete email instructions in “Routine Air Report Instructions Letter” at

<https://www.pca.state.mn.us/sites/default/files/aq-f6-15.pdf>)

### 3. Facility description

The Xcel Energy - Red Wing Generating Plant (Facility) is located at 801 5th Street, Red Wing, Goodhue County, Minnesota.

Xcel Energy - Red Wing Generating Plant (Xcel - Red Wing, or Facility) is a waste combustor electric power generating facility located along the Mississippi River in Red Wing, Minnesota. The Facility is rated at 25 Megawatts (MW) and consists of two boilers that primarily burn Refuse Derived Fuel (RDF). The RDF burned at this facility is processed under contract with the City of Red Wing Resource & Recovery Facility and the Ramsey/Washington Resource Recovery Facility in Newport, MN.

Energy is produced through combustion of RDF in the two traveling grate boilers installed in 1947. The units are identified in the permit as EQUIs 1 and 2. The units each have a rated capacity of 198 MMBtu/hr, which equates to 18 tons of RDF per hour (at an assumed heat content of 5,500 Btu/lb). The waste combustors also burn wood and waste oil under the conditions of the permit, and natural gas which is used at start-up and is necessary to maintain proper combustion conditions.

Each boiler exhausts through separate pollution control equipment; dry lime injection for the control of acid gases and sulfur dioxide (SO<sub>2</sub>), and a fabric filter for the control of particulate matter (PM), particulate matter less than 10 microns (PM<sub>10</sub>), and particulate matter less than 2.5 microns (PM<sub>2.5</sub>). Exhaust gases from each boiler are continuously monitored for carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), opacity, and oxygen (O<sub>2</sub>). Operating parameters, including control equipment inlet temperature, lime feed rate, and steam flow rate, are also monitored continuously.

Hot water for internal use when EQUIs 1 and 2 are not in operation is provided by a natural gas-fired boiler. Ash produced in the course of waste combustion is stored in an enclosed area at the facility. The ash is transported using covered trucks to the Red Wing Ash Landfill. Other sources of PM emissions are the lime storage silos and RDF receiving building.

4. Summary of subject items

SI ID: Description	Relationship type	Related SI ID: Description
TFAC 2: Xcel Energy - Red Wing Generating Plant		
ACTV 2: All IA's		
COMG 1: Waste Combustors and Control Equipment	has members	EQUI 1, EQUI 2, TREA 1, TREA 2, TREA 5, TREA 6
COMG 2: Continuous Emission Monitors	has members	EQUI 21, EQUI 22, EQUI 27, EQUI 28, EQUI 41, EQUI 42, EQUI 43, EQUI 44, EQUI 45, EQUI 46, EQUI 47, EQUI 48
COMG 3: Continuous Opacity Monitors	has members	EQUI 29, EQUI 49
EQUI 1: Boiler 1	sends to	EQUI 8: U1/U2 Server
EQUI 1: Boiler 1	is monitored by	EQUI 21: SO2 (EQUI 1 scrubber inlet)
EQUI 1: Boiler 1	is monitored by	EQUI 22: O2 (EQUI 1 scrubber inlet)
EQUI 1: Boiler 1	is monitored by	EQUI 30: Temperature (bag house inlet) (EQUI 1)
EQUI 1: Boiler 1	is monitored by	EQUI 31: Steam Flow (EQUI 1)
EQUI 1: Boiler 1	is monitored by	EQUI 41: CO (EQUI 1 stack)
EQUI 1: Boiler 1	is monitored by	EQUI 42: NOx (EQUI 1 stack)
EQUI 1: Boiler 1	is monitored by	EQUI 43: SO2 (EQUI 1 stack)
EQUI 1: Boiler 1	is monitored by	EQUI 44: O2 (EQUI 1 stack)
EQUI 1: Boiler 1	is monitored by	EQUI 49: Opacity (EQUI 1 stack)
EQUI 1: Boiler 1	sends to	STRU 11: Boiler 1
EQUI 1: Boiler 1	is controlled by	TREA 1: Dry Limestone Injection

SI ID: Description	Relationship type	Related SI ID: Description
EQUI 1: Boiler 1	is controlled by	TREA 5: Fabric Filter - High Temperature, i.e., T>250 Degrees F
EQUI 2: Boiler 2	sends to	EQUI 8: U1/U2 Server
EQUI 2: Boiler 2	is monitored by	EQUI 27: SO2 (EQUI 2 scrubber inlet)
EQUI 2: Boiler 2	is monitored by	EQUI 28: O2 (EQUI 2 scrubber inlet)
EQUI 2: Boiler 2	is monitored by	EQUI 29: Opacity (EQUI 2 stack)
EQUI 2: Boiler 2	is monitored by	EQUI 32: Temperature (bag house inlet) (EQUI 2)
EQUI 2: Boiler 2	is monitored by	EQUI 33: Steam Flow (EQUI 2)
EQUI 2: Boiler 2	is monitored by	EQUI 45: CO (EQUI 2 stack)
EQUI 2: Boiler 2	is monitored by	EQUI 46: NOx (EQUI 2 stack)
EQUI 2: Boiler 2	is monitored by	EQUI 47: SO2 (EQUI 2 stack)
EQUI 2: Boiler 2	is monitored by	EQUI 48: O2 (EQUI 2 stack)
EQUI 2: Boiler 2	sends to	STRU 8: Boiler 2
EQUI 2: Boiler 2	is controlled by	TREA 2: Dry Limestone Injection
EQUI 2: Boiler 2	is controlled by	TREA 6: Fabric Filter - High Temperature, i.e., T>250 Degrees F
EQUI 8: U1/U2 Server	receives from	EQUI 21: SO2 (EQUI 1 scrubber inlet)
EQUI 8: U1/U2 Server	receives from	EQUI 22: O2 (EQUI 1 scrubber inlet)
EQUI 8: U1/U2 Server	receives from	EQUI 27: SO2 (EQUI 2 scrubber inlet)

SI ID: Description	Relationship type	Related SI ID: Description
EQUI 8: U1/U2 Server	receives from	EQUI 28: O2 (EQUI 2 scrubber inlet)
EQUI 8: U1/U2 Server	receives from	EQUI 29: Opacity (EQUI 2 stack)
EQUI 8: U1/U2 Server	receives from	EQUI 30: Temperature (bag house inlet) (EQUI 1)
EQUI 8: U1/U2 Server	receives from	EQUI 31: Steam Flow (EQUI 1)
EQUI 8: U1/U2 Server	receives from	EQUI 32: Temperature (bag house inlet) (EQUI 2)
EQUI 8: U1/U2 Server	receives from	EQUI 33: Steam Flow (EQUI 2)
EQUI 8: U1/U2 Server	receives from	EQUI 41: CO (EQUI 1 stack)
EQUI 8: U1/U2 Server	receives from	EQUI 42: NOx (EQUI 1 stack)
EQUI 8: U1/U2 Server	receives from	EQUI 43: SO2 (EQUI 1 stack)
EQUI 8: U1/U2 Server	receives from	EQUI 44: O2 (EQUI 1 stack)
EQUI 8: U1/U2 Server	receives from	EQUI 45: CO (EQUI 2 stack)
EQUI 8: U1/U2 Server	receives from	EQUI 46: NOx (EQUI 2 stack)
EQUI 8: U1/U2 Server	receives from	EQUI 47: SO2 (EQUI 2 stack)
EQUI 8: U1/U2 Server	receives from	EQUI 48: O2 (EQUI 2 stack)
EQUI 8: U1/U2 Server	receives from	EQUI 49: Opacity (EQUI 1 stack)
EQUI 21: SO2 (EQUI 1 scrubber inlet)		
EQUI 22: O2 (EQUI 1 scrubber inlet)		
EQUI 27: SO2 (EQUI 2 scrubber inlet)		
EQUI 28: O2 (EQUI 2 scrubber inlet)		
EQUI 29: Opacity (EQUI 2 stack)		
EQUI 30: Temperature (bag house inlet) (EQUI		

SI ID: Description	Relationship type	Related SI ID: Description
EQUI 31: Steam Flow (EQUI 1)		
EQUI 32: Temperature (bag house inlet) (EQUI 2)		
EQUI 33: Steam Flow (EQUI 2)		
EQUI 36: Lime Storage Silo	sends to	STRU 12: Lime Silo Vent
EQUI 36: Lime Storage Silo	is controlled by	TREA 7: Fabric Filter - Low Temperature, i.e., T<180 Degrees F
EQUI 37: Lime Storage Silo	sends to	STRU 13: Lime Silo Vent
EQUI 37: Lime Storage Silo	is controlled by	TREA 8: Fabric Filter - Low Temperature, i.e., T<180 Degrees F
EQUI 39: Auxiliary Boiler	sends to	STRU 14: Auxiliary Boiler Stack
EQUI 40: Ash Conveyor		
EQUI 41: CO (EQUI 1 stack)		
EQUI 42: NOx (EQUI 1 stack)		
EQUI 43: SO2 (EQUI 1 stack)		
EQUI 44: O2 (EQUI 1 stack)		
EQUI 45: CO (EQUI 2 stack)		
EQUI 46: NOx (EQUI 2 stack)		
EQUI 47: SO2 (EQUI 2 stack)		
EQUI 48: O2 (EQUI 2 stack)		
EQUI 49: Opacity (EQUI 1 stack)		
STRU 1: Power House		
STRU 2: RDF Receiving		
STRU 3: Ash House		
STRU 4: RDF Scalping		
STRU 7: Hydraulic		

Permit Issued: [month day, year]  
 Permit Expires: [month day, year]

SI ID: Description	Relationship type	Related SI ID: Description
Storage Area		
STRU 8: Boiler 2		
STRU 11: Boiler 1		
STRU 12: Lime Silo Vent		
STRU 13: Lime Silo Vent		
STRU 14: Auxiliary Boiler Stack		
STRU 15: Oil Storage Building		
STRU 16: Sub Station House		
STRU 17: Ash Conveyor Building		
STRU 18: Air Compressor/Scrubber Air Blower Building		
STRU 19: Lunch Room Building		
STRU 20: RDF Storage Building		
STRU 21: Storage Shed No. 3		
STRU 22: Screen House		
STRU 23: Warehouse		

SI ID: Description	Relationship type	Related SI ID: Description
STRU 24: Construction Trailer No. 2		
TREA 1: Dry Limestone Injection	is controlled in series by	TREA 5: Fabric Filter - High Temperature, i.e., T>250 Degrees F
TREA 2: Dry Limestone Injection	is controlled in series by	TREA 6: Fabric Filter - High Temperature, i.e., T>250 Degrees F
TREA 5: Fabric Filter - High Temperature, i.e., T>250 Degrees F		
TREA 6: Fabric Filter - High Temperature, i.e., T>250 Degrees F		
TREA 7: Fabric Filter - Low Temperature, i.e., T<180 Degrees F		
TREA 8: Fabric Filter - Low Temperature, i.e., T<180 Degrees F		



5. Limits and other requirements

Requirement number	Requirement and citation
<b>TFAC 2</b>	<b>Xcel Energy - Red Wing Generating Plant</b>
5.1.1	<p>The Permittee shall design, construct, and operate the facility in compliance with the solid waste management requirements as set forth in Minn. R. 7011.1245, items A to H. Plans required in the items in Minn. R. 7011.1245 shall identify those required portions of the plan which are not applicable.</p> <p>A. security requirements in Minn. R. 7035.2535, subp 3;          B. general inspection requirements in Minn. R. 7035.2535, subp. 4;          C. household hazardous waste management requirements of Minn. R. 7035.2535, subp. 6;          D. emergency preparedness and prevention plans and emergency procedures shall be prepared in accordance with Minn. R. 7035.2595 and Minn. R. 7035.2605;          E. contingency action plans in Minn. R. 7035.2615;          F. closure plans in Minn. R. 7035.2625 and closure procedures in Minn. R. 7035.2635;          G. solid waste transfer facility requirements as required in Minn. R. 7035.2870; and          H. for waste combustors accepting infectious wastes, infectious waste management requirements of Minn. R. 7035.9100 to 7035.9150. [Minn. R. 7011.1245]</p>
5.1.2	<p>All industrial solid waste delivered to a solid waste management facility must be managed by the Permittee to protect human health and the environment. The industrial solid waste management plan for a municipal solid waste combustor ash land disposal facility does not need to comply with items B and C.</p> <p>A. The industrial waste management plan must include a discussion of how the Permittee will manage all industrial solid wastes received at the facility. The Permittee must specify:</p> <p>(1) a procedure for notifying industrial solid waste generators of the facility operating requirements and restrictions, including the requirements imposed on haulers serving the facility, the steps required of generators submitting a request for waste management, and the measures to be taken to inform haulers and generators of the facility requirements;          (2) a procedure for evaluating waste characteristics, including the specific analyses that may be required for specific wastes, and the criteria used to determine when analyses are necessary, the frequency of testing, and the analytical methods to be used;          (3) a procedure for managing the waste and for identifying any special management requirements, and the rationale for accepting or rejecting a waste based on its analysis, volume, and characteristics;          (4) a procedure for inspecting industrial solid waste as it is delivered and the rationale for accepting or requiring further information and review of previously approved and unapproved waste as it is delivered. [Minn. R. 7011.1250, subp. 1, Minn. R. 7035.2535, subp. 5(A)]</p>
5.1.3	<p>The industrial waste management plan must address how the following categories of waste will be managed to comply with the requirements of Minn. R. 7035.2535, subp. 5, item A, subitems (2) to (4):</p> <p>(1) empty pesticide containers;          (2) asbestos;          (3) waste containing polychlorinated biphenyls at a concentration less than 50 ppm;          (4) spilled nonhazardous materials;          (5) rendering and slaughterhouse wastes;          (6) wastes that could spontaneously combust or that could ignite other waste because of high temperatures;          (7) foundry waste;          (8) ash from incinerators, resource recovery facilities, and power plants;          (9) paint residues, paint filters, and paint dust;          (10) sludges, including ink sludges, lime sludge, wood sludge, and paper sludge;          (11) fiberglass, urethane, polyurethane, and epoxy resin waste;</p>

Requirement number	Requirement and citation
	(12) spent activated carbon filters; and (13) any other wastes that can be identified. [Minn. R. 7011.1250, subp. 1, Minn. R. 7035.2535, subp. 5(B)]
5.1.4	The industrial waste management plan must address how the following additional categories of solid waste will be managed to comply with the requirements of Minn. R. 7035.2535, subpart 5, item A, subitems (2) to (4), as well as state whether each of the following solid wastes will be accepted at the facility: A. spilled fossil fuels and the sorbents used to collect the spilled fossil fuels; B. infectious and pathological wastes; C. media contaminated with oil; D. problem materials as defined in Minnesota Statutes, section 115A.03, subdivision 24a; and E. any other solid wastes that can be identified that would adversely impact waste combustor operations or result in environmental and health problems if combusted. [Minn. R. 7011.1250, subp. 1, Minn. R. 7011.1250, subp. 2]
5.1.5	The Permittee shall maintain and abide by the Permittee's industrial waste management plan. The Permittee must maintain copies of all waste management plans for each facility that provides refuse derived fuel (RDF) to the Permittee. [Minn. R. 7007.0501, subp. 4, Minn. R. 7007.0800, subp. 5, Minn. R. 7007.0801, subp. 2(E), Minn. R. 7011.1250]
5.1.6	In applications for permit reissuance, the Permittee shall include summary performance test data collected under the requirements of Minn. R. 7011.1270 which represent the current operating practices of the waste combustor. [Minn. R. 7007.0501, subp. 3]
5.1.7	The Permittee must modify the industrial waste management plan whenever the management practices or solid waste identified in the plan have changed. The Permittee must submit the amended plan to the commissioner for approval. [Minn. R. 7011.1250, subp. 3]
5.1.8	The Permittee shall maintain and abide by the Permittee's plan to reduce the level of toxic contaminants in ash at the facility. [Minn. R. 7007.0501, subp. 6(A), Minn. R. 7007.0800, subp. 5]
5.1.9	In applications for permit reissuance, the Permittee must provide for each of the previous five years, the amount of waste combusted, the amount of flue gas conditioning chemicals used, and the amount of ash disposed. The ratio of ash generated less flue gas conditioning agents to waste combusted shall be computed for each of the previous five years. The application shall also include data on the constituents of the waste combustor's ash and how to further reduce the level of toxic contaminants in the ash. [Minn. R. 7007.0501, subp. 6(B)]
5.1.10	The Permittee must perform ash sampling according to an ash sampling plan approved by the commissioner. The Permittee shall maintain the approved ash sampling plan at the facility. Proposed changes to sampling equipment or procedures must be submitted to the commissioner, Regional Environmental Management, Metro Region, Regular Waste Management and Wastewater Sector Unit for review and approval. The plan must contain at least the following information: A. specification of the training and experience qualifications of persons who collect ash samples;  B. description of equipment used to collect, process, and store ash samples;  C. identification of sampling equipment cleaning procedures and other actions taken to prevent sample contamination;  D. identification of the location or locations where ash samples are collected;  E. description of procedures used to collect grab samples;  F. description of procedures used to process grab samples to form composite samples;  G. description of chain-of-custody and sample storage procedures; and

Requirement number	Requirement and citation
	<p>H. identification of ash sampling quality assurance and quality control measures.</p> <p>The Permittee shall submit the plan and any amendments to the plan to the Regular Facilities Unit in the Rochester Subdistrict Office for approval. [Minn. R. 7007.0801, subp. 2(D), Minn. R. 7035.2910, subp. 6]</p>
5.1.11	<p>The Permittee shall maintain ash management plans for disposal of the ash generated by the waste combustor, treatment of water generated from quenching the ash at the facility, and any plans which the applicant has for ash utilization. The plans shall include the sites and processes for management and final disposal of the ash, and shall identify any permits the Permittee needs to use each site or process, including permits for leachate treatment.</p> <p>The Permittee shall include the ash management with any air permit application. [Minn. R. 7007.0501, subp. 7]</p>
5.1.12	<p>Permit Appendices: This permit contains appendices as listed in the permit Table of Contents. The Permittee shall comply with all requirements contained in Appendices:</p> <ul style="list-style-type: none"> <li>A. Insignificant activities and general applicable requirements;</li> <li>B. 40 CFR pt. 63, subp. A requirements;</li> <li>C. Fugitive Emission Control Plan;</li> <li>D. Waste Composition Study;</li> <li>E. Industrial Solid Waste Management Plan;</li> <li>F. RDF Transfer Station and Unloading Area Housekeeping Plan;</li> <li>G. 1996 MSW Combustor Ash Testing Variance; and</li> <li>H. Ash Management Plan. [Minn. R. 7007.0800, subp. 2(A) &amp; (B)]</li> </ul>
5.1.13	<p>The Permittee must comply with Minn. Stat. 116.385. The Permittee may not use trichloroethylene at its permitted facility including in any manufacturing, processing, or cleaning processes, except as described in Minn. Stat. 116.385, subd. 2(b) and 4. 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. [Minn. R. 7007.0100, subp. 7(X), Minn. Stat. 116.385]</p>
5.1.14	<p>PERMIT SHIELD: Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.</p> <p>This permit shall not alter or affect the liability of the Permittee for any violation of applicable requirements prior to or at the time of permit issuance. [Minn. R. 7007.1800(A)(2)]</p>
5.1.15	<p>Comply with Fugitive Emission Control Plan: The Permittee shall follow the actions and recordkeeping specified in the fugitive dust control plan in Appendix C of this permit. If the Commissioner determines the Permittee is out of compliance with Minn. R. 7011.0150 or the fugitive control plan, then the Permittee may be required to amend the control plan and/or to install and operate particulate matter ambient monitors as requested by the Commissioner. [Minn. R. 7007.0800, subp. 2(A), Minn. R. 7009.0020, Minn. R. 7011.0150, Minn. Stat. 116.07, subd. 4a(a)]</p>
5.1.16	<p>The Permittee shall comply with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0090. Compliance shall be demonstrated upon written request by the MPCA. [Minn. R. 7007.0800, subp. 2(A) &amp; (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]</p>
5.1.17	<p>The Permittee shall comply with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0090. Compliance shall be demonstrated upon written request by the MPCA. [Minn. R. 7007.0800, subp.</p>

Requirement number	Requirement and citation
	2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.1.18	Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted. [Minn. R. 7011.0020]
5.1.19	The Permittee must at all times properly operate and maintain the facilities and systems of treatment and control and the appurtenances related to them that are installed or used by the Permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. [Minn. R. 7007.0800, subp. 16(J)]
5.1.20	Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 16(J)]
5.1.21	Operation Changes: In any shutdown, breakdown, or deviation the Permittee must immediately or as soon as possible considering plant and personnel safety take all practical steps to modify operations to reduce the emission of any regulated air pollutant. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment are permitted to operate. [Minn. R. 7019.1000, subp. 4]
5.1.22	Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150. [Minn. R. 7011.0150]
5.1.23	Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Minn. R. 7030.0010-7030.0080]
5.1.24	Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A). [Minn. R. 7007.0800, subp. 9(A)]
5.1.25	The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16. [Minn. R. 7007.0800, subp. 16]
5.1.26	Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in this permit. [Minn. R. ch. 7017]
5.1.27	<p>Performance Test Notifications and Submittals:</p> <p>Performance Test Notification and Plan: due 30 days before each Performance Test            Performance Test Pre-test Meeting: due seven days before each Performance Test            Performance Test Report: due 45 days after each Performance Test</p> <p>The Notification, Test Plan, and Test Report must be submitted in a format specified by the commissioner. [Minn. R. 7017.2017, Minn. R. 7017.2030, subps. 1-4, Minn. R. 7017.2035, subps. 1-2]</p>
5.1.28	HCl Performance Test Report: The Permittee must include the SO <sub>2</sub> inlet and outlet CEMS data recorded during the time of the performance test as an appendix to the test report. The Permittee must also include chlorine as part of the ultimate fuel analysis. [Minn. R. 7007.0800, subp. 2(A), Minn. R. 7017.2017, Minn. R. 7017.2035, subp. 3]
5.1.29	Limits set as a result of a performance test (conducted before or after permit issuance) apply until

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	superseded as stated in the MPCA's Notice of Compliance letter granting preliminary approval. Preliminary approval is based on formal review of a subsequent performance test on the same unit as specified by Minn. R. 7017.2025, subp. 3. The limit is final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025, subp. 3]
5.1.30	<p>Monitoring Equipment Calibration - The Permittee shall either:</p> <ol style="list-style-type: none"> <li>1. Calibrate or replace required monitoring equipment every 12 months; or</li> <li>2. Calibrate at the frequency stated in the manufacturer's specifications.</li> </ol> <p>For each monitor, the Permittee shall maintain a record of all calibrations, including the date conducted, and any corrective action that resulted. The Permittee shall include the calibration frequencies, procedures, and manufacturer's specifications (if applicable) in the Operations and Maintenance Plan. Any requirements applying to continuous emission monitors are listed separately in this permit. [Minn. R. 7007.0800, subp. 4(D)]</p>
5.1.31	<p>Operation of Monitoring Equipment: Unless noted elsewhere in this permit, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system. [Minn. R. 7007.0800, subp. 4(D)]</p>
5.1.32	<p>Recordkeeping: Retain all records at the stationary source, unless otherwise specified within this permit, for five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A). [Minn. R. 7007.0800, subp. 5(C)]</p>
5.1.33	<p>Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350, subp. 2), including records of the emissions resulting from those changes. [Minn. R. 7007.0800, subp. 5(B)]</p>
5.1.34	<p>The Permittee must maintain records adequate to document compliance at the stationary source, including at a minimum:</p> <ol style="list-style-type: none"> <li>(1) the date, place, and time of any sampling or measurement;</li> <li>(2) the date or dates any analyses were performed;</li> <li>(3) the company or entity that performed the analyses;</li> <li>(4) the analytical techniques or methods used;</li> <li>(5) the results of such analyses; and</li> <li>(6) the operating conditions existing at the time of sampling or measurement. [Minn. R. 7007.0800, subp. 5(A)]</li> </ol>
5.1.35	<p>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 expiring permits, these records shall be kept for a period of five years from the date the change was made or until permit reissuance, whichever is longer. The records shall be kept at the stationary source for the current calendar year of operation and may be kept at the stationary source or office of the stationary source for all other years. The records may be maintained in either electronic or paper format. [Minn. R. 7007.1200, subp. 4]</p>
5.1.36	<p>These following 40 CFR 52.21(r)(6) requirements apply if a reasonable possibility (RP) as defined in 40 CFR 52.21(r)(6)(vi) exists that a proposed project, analyzed using the actual-to-projected-actual (ATPA) test (either by itself or as part of the hybrid test at 40 CFR 52.21(a)(2)(iv)(f)) and found to not be part of a major modification, may result in a significant emissions increase (SEI). If the ATPA test is not used for the project, or if there is no RP that the proposed project could result in a SEI, these requirements do not apply to that project. The Permittee is only subject to the Preconstruction Documentation requirement for a project where a RP occurs only within the meaning of 40 CFR</p>

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	<p>52.21(r)(6)(vi)(b).</p> <p>Even though a particular modification is not subject to New Source Review (NSR), or where there isn't a RP that a proposed project could result in a SEI, a permit amendment, recordkeeping, or notification may still be required by Minn. R. 7007.1150 - 7007.1500. [Minn. R. 7007.0800, subp. 2(A), Title I Condition: 40 CFR 52.21(r)(6) and Minn. R. 7007.3000]</p>
5.1.37	<p>Preconstruction Documentation -- Before beginning actual construction on a project, the Permittee shall document the following:</p> <ol style="list-style-type: none"> <li>1. Project description</li> <li>2. Identification of any emission unit whose emissions of an NSR pollutant could be affected</li> <li>3. Pre-change potential emissions of any affected existing emission unit, and the projected post-change potential emissions of any affected existing or new emission unit.</li> <li>4. A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including the baseline actual emissions, the projected actual emissions, the amount of emissions excluded due to increases not associated with the modification and that the emission unit could have accommodated during the baseline period, an explanation of why the amounts were excluded, and any creditable contemporaneous increases and decreases that were considered in the determination.</li> </ol> <p>The Permittee shall maintain records of this documentation. [Minn. R. 7007.0800, subps. 4-5, Minn. R. 7007.1200, subp. 4, Title I Condition: 40 CFR 52.21(r)(6) and Minn. R. 7007.3000]</p>
5.1.38	<p>The Permittee shall monitor the actual emissions of any regulated NSR pollutant that could increase as a result of the project and that were analyzed using the ATPA test, and the potential emissions of any regulated NSR pollutant that could increase as a result of the project and that were analyzed using potential emissions in the hybrid test. The Permittee shall calculate and maintain a record of the sum of the actual and potential (if the hybrid test was used in the analysis) emissions of the regulated pollutant, in tons per year on a calendar year basis, for a period of five years following resumption of regular operations after the change, or for a period of 10 years following resumption of regular operations after the change if the project increases the design capacity of or potential to emit of any unit associated with the project. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(r)(6) and Minn. R. 7007.3000]</p>
5.1.39	<p>The Permittee must submit a report to the Agency if the annual summed (actual, plus potential if used in hybrid test) emissions differ from the preconstruction projection and exceed the baseline actual emissions by a significant amount as listed at 40 CFR 52.21(b)(23). Such report shall be submitted to the Agency within 60 days after the end of the year in which the exceedances occur. The report shall contain:</p> <ol style="list-style-type: none"> <li>a. The name and ID number of the Facility, and the name and telephone number of the Facility contact person.</li> <li>b. The annual emissions (actual, plus potential if any part of the project was analyzed using the hybrid test) for each pollutant for which the preconstruction projection and significant emissions increase are exceeded.</li> <li>c. Any other information, such as an explanation as to why the summed emissions differ from the preconstruction projection. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: 40 CFR 52.21(r)(6) and Minn. R. 7007.3000]</li> </ol>
5.1.40	<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 Permittee does not have advance knowledge of the shutdown, the Permittee must notify 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>

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	At the time of notification, the owner or operator must inform the commissioner of the cause of the shutdown and the estimated duration. The owner or operator must notify the commissioner when the shutdown is over. [Minn. R. 7019.1000, subp. 3]
5.1.41	<p>Breakdown Notifications: Notify the commissioner within 24 hours of a breakdown of more than one hour 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 Permittee must inform the commissioner of the cause of the breakdown and the estimated duration. The Permittee must notify the commissioner when the breakdown is over. [Minn. R. 7019.1000, subp. 2]</p>
5.1.42	Notification of Deviations Endangering Human Health or the Environment: Immediately after discovery of the deviation or immediately after when the deviation reasonably should have been discovered, notify the commissioner either orally or by e-mail, or telephone the state duty officer at 800-422-0798 or 651-649-5451, of any deviation from permit conditions that could endanger human health or the environment. [Minn. R. 7019.1000, subp. 1]
5.1.43	<p>Notification of Deviations Endangering Human Health or the Environment Report: Within two working days of discovery, notify the commissioner in writing of any deviation from permit conditions that could endanger human health or the environment. Include the following information in this written description:</p> <ol style="list-style-type: none"> <li>1. the cause of the deviation;</li> <li>2. the exact dates of the period of the deviation, if the deviation has been corrected;</li> <li>3. whether or not the deviation has been corrected;</li> <li>4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and</li> <li>5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation. [Minn. R. 7019.1000, subp. 1]</li> </ol>
5.1.44	<p>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.</p> <p>Upon adoption of a new or amended federal applicable requirement, and if there are three or more years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150 - 7007.1500]</p>
5.1.45	Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H). Performance testing deadlines from the General Provisions of 40 CFR pt. 60 and pt. 63 are examples of deadlines for which the MPCA does not have authority to grant extensions and therefore do not meet the requirements of Minn. R. 7007.1400, subp. 1(H). [Minn. R. 7007.1400, subp. 1(H)]
5.1.46	Within 15 days of a request from the Commissioner, the Permittee must provide a complete summary of all performance tests required at the facility including the subject item, pollutant, most recent test date (if applicable), and the date of the next test in an approved format. [Minn. R. 7007.0800, subp. 16(L)]
5.1.47	Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance. Submit in a format specified by the Commissioner. [Minn. R. 7019.3000-7019.3100]
5.1.48	Emission Fees: due 30 days after receipt of an MPCA bill. [Minn. R. 7002.0005-7002.0085]
<b>COMG 1</b>	<b>Waste Combustors and Control Equipment</b>

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5.2.1	During start-up from a cold furnace, the Permittee must use auxiliary fuels to achieve combustion chamber operating temperature. The use of solid waste solely to provide thermal protection of the grate or hearth during the start-up period when solid waste is not being fed to the grate is not considered to be continuous burning. [Minn. R. 7011.1240, subp. 3]
5.2.2	The Permittee must use natural gas to warm the combustion and pollution control devices and maintain good combustion conditions in the combustion chamber from the time the RDF feed has been discontinued until the combustion chamber is clear of combustible material or active combustion ceases. [Minn. R. 7007.0800, subp. 2(A)]
5.2.3	Fuel Type: Refuse derived fuel as defined in Minn. R. 115A.03, subp. 21 and natural gas. The Permittee may burn wood, used oil generated on site and as defined in Minn. R. 7045.0020, subp.60a and sorbents that contain used oil, and other nonhazardous wastes approved through the facility's Industrial Waste Management Plan. [Minn. R. 7007.0800, subp. 2(A)]
5.2.4	The Permittee must not combust wood, used oil, or other approved nonhazardous wastes in any waste combustor as a separate waste stream. [Minn. R. 7007.0800, subp. 2(A)]
5.2.5	The Permittee must not combust yard waste or tires. [Minn. R. 7011.1220, subp. 2]
5.2.6	<p>The Permittee must develop and update on a yearly basis a site specific operating manual that must, at a minimum, address the following elements of EQUI 1 and EQUI 2 operation:</p> <ul style="list-style-type: none"> <li>A. a summary of the applicable state rules and federal regulations to the activities described in the facility's air emissions permit;</li> <li>B. a description of basic combustion theory applicable to the facility's waste combustor unit;</li> <li>C. procedures for receiving, handling, and feeding solid waste;</li> <li>D. EQUI 1 and EQUI 2 start-up, shutdown, and malfunction procedures;</li> <li>E. procedures for maintaining proper combustion air levels;</li> <li>F. procedures for operating the waste combustors, EQUIs 1 and 2, within the standards established in Minn. R. 7011.1201 to 7011.1294;</li> <li>G. procedures for responding to periodic upset or off-specification conditions;</li> <li>H. procedures for minimizing particulate matter carryover;</li> <li>I. procedures for monitoring the degree of solid waste burnout;</li> <li>J. procedures for handling ash;</li> <li>K. procedures for monitoring waste combustor emissions;</li> <li>L. procedures for reporting and record keeping;</li> <li>M. timetables and procedures for routine inspection and maintenance of equipment affecting air emissions;</li> <li>N. procedures for activating communications and alarm systems; and</li> <li>O. procedures to implement the facility's industrial waste management plan.</li> </ul>



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	<p>The Permittee must also include any operational changes resulting from emissions performance testing results in the operating manual.</p> <p>The Permittee must keep the operating manual in a location easily accessed by chief facility operators, shift supervisors, operator supervisors, control room personnel, ash handlers, maintenance personnel, and crane/load handlers. [Minn. R. 7007.0800, subp. 2(A), Minn. R. 7011.1275, subp. 3]</p>
5.2.7	<p>The Permittee must establish a program to review the plant-specific operating manual with waste combustor facility personnel who have responsibilities which affect the operation of EQUI 1 and/or EQUI 2, including, but not limited to, chief facility operators, shift supervisors, operator supervisors, control room personnel, ash handlers, maintenance personnel, and crane/load handlers. The waste combustor facility personnel must complete a program of instruction and on-the-job training based on the plant-specific operating manual. The Permittee must train facility personnel to maintain compliance with Minn. R. 7011.1201 to 7011.1294. Individual training must be specific to the position held and shall, at a minimum, address the items in Minn. R. 7011.1275, subp. 3.</p> <p>The training program must require:</p> <p>A. initial review of the operating manual prior to assumption of any job-related activities affecting air emissions;</p> <p>B. review of the operating manual relevant to a newly assigned position before assumption of new job-related activities affecting air emissions;</p> <p>C. that those without waste combustor or boiler operation experience, initially review the operating manual and work under the direct supervision of a certified operator or a certified operator's designee before assumption of job-related activities affecting air emissions for 40 hours;</p> <p>D. annual review of the operating manual; and</p> <p>E. the Permittee must update the manual annually. [Minn. R. 7011.1275, subp. 1-2]</p>
5.2.8	<p>The Permittee must maintain as a part of the operating record required by Minn. R. 7011.1285, subp. 2, a record of the identity of all personnel who have received training and the number of training hours. The records shall be provided to the commissioner on demand. [Minn. R. 7011.1275, subp. 4]</p>
5.2.9	<p>The Permittee must maintain at the facility for five years a record of the names of all personnel that the waste combustor examiner has certified. This record shall contain the examination dates, the nature or content of the examination, the full name of the individual certified, the date of certification, and the signature of the certified examiner for that facility with the following certification:</p> <p>"I certify under penalty of law that, based on my examination of these persons, these persons have demonstrated the knowledge and skills that qualify these persons to be fully certified operators at (name of waste combustor facility) in accordance with the procedures of Minnesota Rules, parts 7011.1280 to 7011.1284." [Minn. R. 7011.1284, subp. 3]</p>
5.2.10	<p>The Permittee must maintain at the facility for five years a record of the names of all personnel who have obtained provisional and/or full certification by ASME. [Minn. R. 7011.1284, subp. 3a]</p>
5.2.11	<p>The Permittee must allow the commissioner to review all records related to the certification of operators including the facility's program for examination and certification of operators, the record required in Minn. R. 7011.1284, subp. 3, the content of the examinations, and the results on an individual's examination. [Minn. R. 7011.1284, subp. 4]</p>
5.2.12	<p>A chief facility operator or shift supervisor who holds a certificate as described in Minn. R. 7011.1281, subp. 1 must be present at the waste combustor facility at all times when solid waste is being</p>

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	<p>combusted, except if individuals are assuming the duties of chief facility operator or shift supervisor, the individuals must obtain full certification as described in Minn. R. 7011.1281 within six months of assuming such duties. [Minn. R. 7011.1240, subp. 1(A), Minn. R. 7011.1240, subp. 1a, Minn. R. 7011.1281]</p>
5.2.13	<p>The Permittee must maintain and keep all records on site and all required submittals in paper copies or electronic format for at least five years. The Permittee must make all records available for submittal to the Administrator or Commissioner, or for onsite review by an inspector, Administrator, or Commissioner.</p> <p>The Permittee shall retain all records of continuously measured emissions for a minimum of five years. The Permittee shall retain current records of design, construction, installation, calibration, and use of nozzles and orifices for boiler load level monitoring. [Minn. R. 7007.0800, subp. 5, Minn. R. 7011.1285, subp. 1]</p>
5.2.14	<p>The Permittee must maintain a record of the information listed below. The Permittee must maintain a permanent record of continuously measured parameters. The record of monitoring shall contain:</p> <ul style="list-style-type: none"> <li>a) the calendar date;</li> <li>b) the following measurements recorded in a manner that allows the data to be immediately accessed upon inspection by the Commissioner:             <ul style="list-style-type: none"> <li>1) all six-minute opacity readings;</li> <li>2) all one-hour average sulfur dioxide emission concentrations at the inlet and outlet of the acid gas control device if compliance is based on a percent reduction, or at the outlet only if compliance is based on the outlet emission limit; and</li> <li>3) all one-hour average carbon monoxide and nitrogen oxide emission concentrations, steam flow, or alternative unit load measurement parameter as described in Minn. R.7011.1265, subpart 4a, combustion chamber temperature, and flue gas temperatures at the inlet of the particulate matter control device;</li> </ul> </li> <li>c) the following average concentrations and parameters:             <ul style="list-style-type: none"> <li>1) all 24-hour daily geometric average percent reductions in sulfur dioxide emissions or all 24-hour daily geometric average sulfur dioxide emission concentrations, as applicable;</li> <li>2) all 24-hour daily arithmetic average nitrogen oxides emission concentrations;</li> <li>3) all four-hour block or 24-hour daily arithmetic average carbon monoxide emission concentrations, as applicable; and</li> <li>4) all four-hour block arithmetic average unit load levels, and particulate matter control device inlet temperatures. [Minn. R. 7007.0800, subp. 2(A), Minn. R. 7011.1260, subp. 6]</li> </ul> </li> </ul>
5.2.15	<p>The Permittee must submit a report containing the results of performance tests conducted to determine compliance with waste combustor unit emission limits whenever performance testing is conducted. The Permittee must submit the report according to the conditions of Minn. R. 7017.2035. [Minn. R. 7011.1285, subp. 6]</p>
5.2.16	<p>Alternative continuous measuring methods in place of steam flow may be installed and operated, provided that the method continuously measures the waste combustor unit load, is equivalent to results obtained when using the method in Minn. R. 7011.1265, subp. 4, and the use of the method is approved by the commissioner. [Minn. R. 7011.1265, subp. 4a]</p>
5.2.17	<p>The Permittee must use the performance test methods and procedures specified in Minn. R. 7017.2001 to 7017.2060 except as modified in Minn. R. 7011.1265. Not operating a sorbent injection system for the sole purpose of testing in order to demonstrate compliance with the percent reduction standards for hydrogen chloride is not a modification under Minn. R. 7007.0100, subpart 14. [Minn. R. 7011.1265, subp. 1]</p>
5.2.18	<p>The Permittee must maintain records and submit reports as required in Minn. R. 7011.1285. The Permittee is subject to the recordkeeping and reporting requirements in Minn. R. 7007.0800, subparts 5 and 6. The Permittee must maintain on site all submittals required by Minn. R. 7011.1285 as paper</p>

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	copies for five years. [Minn. R. 7011.1285, subp. 1]
5.2.19	Recordkeeping: The Permittee must maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the facility including; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative. [Minn. R. 7007.0800, subp. 2(A)]
5.2.20	The Permittee must retain all continuously measured emission records for a minimum of five years. Regarding boiler load level monitoring, the Permittee must retain current records of design, construction, installation, calibration, and use of nozzles and orifices. The Permittee must maintain the above records in a reviewable format at the facility and make them available upon request. [Minn. R. 7007.0800, subp. 2(A)]
5.2.21	Shutdown or Breakdown Reporting Requirements: The Permittee must comply with Minn. R. 7019.1000 and Minnesota Statutes, section 116.85. Notification to the commissioner for any shutdowns/breakdown is not required if RDF feed is planned to be taken off-line in conjunction with a shutdown. [Minn. R. 7011.1240, subp. 8]
5.2.22	<p>Quarterly Report: due 30 days after end of each calendar quarter following permit issuance. The report must contain the following items:</p> <p>A. calendar date;</p> <p>B. sulfur dioxide, nitrogen oxide, and carbon monoxide emissions, the maximum load level for each waste combustor unit, and particulate matter control device temperatures as recorded by Minn. R. 7011.1260, subp. 6(C) and the daily maximum opacity reading as recorded by Minn. R. 7011.1260, subp. 6(B)(1). The Permittee may choose to provide this information in tabular or graphic form. The graphs shall be prepared as follows:</p> <ol style="list-style-type: none"> <li>(1) the graph shall represent one operating parameter or pollutant;</li> <li>(2) the applicable limit of the parameter or pollutant shall be indicated on the graph; and</li> <li>(3) data shall be expressed in the same units as the applicable operating parameter or emissions limit;</li> </ol> <p>C. instances of dumpstack use;</p> <p>D. the identification of operating days when any of the average emission concentrations, percent reductions, operating parameters specified under Minn. R. 7011.1260, subp. 6(C) or Minn. R. 7011.1272, subp. 2, or the opacity level exceeded the applicable limits. The report shall include the emission levels recorded during the exceedance, reasons for such exceedances as well as a description of corrective actions taken;</p> <p>E. the percent of the operating time for the quarter that the opacity CEMS was operating and collecting valid data;</p> <p>F. the identification of operating days for which the minimum number of hours that emission concentrations, percent reductions, operating parameters specified under Minn. R. 7011.1260, subp. 6(C) or Minn. R. 7011.1272, subp. 2, or the opacity level have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken;</p> <p>G. the results of daily sulfur dioxide, nitrogen oxides, and carbon monoxide CEMS drift tests and accuracy assessments as required in Minn. R. 7011.1260, subp. 5;</p> <p>H. the information required in Minn. R. 7011.1285, subp. 2(C), (D), and (E), summarized to reflect quarterly totals;</p> <p>I. a compliance certification as required in Minn. R. 7007.0800, subp. 6(C); and</p>

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	J. if an additive is used to comply with mercury or PCDD/PCDF emission limits, the total additive used during the calendar quarter, as specified in Minn. R. 7011.1272, subp. 3(B), with supporting calculations. [Minn. R. 7011.1285, subp. 3]
<b>COMG 2</b>	<b>Continuous Emission Monitors</b>
5.3.1	Additional monitoring requirements may apply. The Permittee is responsible for meeting all applicable requirements. [Minn. R. 7007.0800, subp. 4(A)]
5.3.2	<p>Nitrogen Oxides: Emissions Monitoring: The Permittee must use a CEMS to measure emissions from EQUI 1 and EQUI 2, each.</p> <p>For nitrogen oxides, the arithmetic average of the one-hour arithmetic average emission concentration during each 24-hour daily period measured from midnight to midnight. At least four data points equally spaced in time must be used to calculate each one-hour arithmetic average. During periods of calibration, quality assurance audits, and routine maintenance, only two data points during the hour, at least 15 minutes apart, are required to calculate an hourly average. Each one-hour average must be corrected to seven percent oxygen on an hourly basis using the one-hour arithmetic average of the oxygen or carbon dioxide continuous emissions monitoring system. [Minn. R. 7011.1260, subp. 4(E), Minn. R. 7017.1010, subp 1]</p>
5.3.3	<p>Sulfur Dioxide: Emissions Monitoring: The Permittee must use a CEMS to measure emissions from EQUI 1 and EQUI 2, each.</p> <p>For sulfur dioxide, the geometric average of the one-hour arithmetic average emission concentration during each 24-hour daily period measured from midnight to midnight. At least four data points equally spaced in time shall be used to calculate each one-hour arithmetic average. During periods of calibration, quality assurance audits, and routine maintenance, only two data points during the hour, at least 15 minutes apart, are required to calculate an hourly average. Each one-hour average must be corrected to seven percent oxygen on an hourly basis using the one-hour arithmetic average of the oxygen or carbon dioxide continuous emissions monitoring system. [Minn. R. 7011.1260, subp. 4(D), Minn. R. 7017.1010, subp. 1]</p>
5.3.4	Compliance with the sulfur dioxide emission limit and percent reduction must be determined by using a continuous emission monitor to measure sulfur dioxide and calculating a 24-hour daily geometric mean emission concentration and daily geometric mean percent reduction using 40 CFR pt. 60, Appendix A, Method 19, section 5.4, as amended, to determine the daily geometric average percent reduction in the potential sulfur dioxide emission concentration. [Minn. R. 7011.1260, subp. 4a(A)]
5.3.5	Compliance with the nitrogen oxides emission standards must be determined by using a continuous emission monitor for measuring nitrogen oxides and calculating a 24-hour daily arithmetic average emission concentration using 40 CFR pt. 60, Appendix A, Method 19, section 4.1, as amended. [Minn. R. 7011.1260, subp. 4a(B)]
5.3.6	<p>The following averaging periods apply to continuous monitoring data collection, reduction, and averaging periods:</p> <ul style="list-style-type: none"> <li>- For particulate matter control device inlet temperature monitoring, four-hour arithmetic block averages calculated from four consecutive one-hour arithmetic averages.</li> <li>- For steam flow, four-hour arithmetic block averages.</li> <li>- For carbon monoxide, a daily 24-hour arithmetic average measured between 12 midnight and the following midnight. The four-hour and 24-hour average must be calculated from one-hour arithmetic averages. At least four points equally spaced in time shall be used to calculate each one-hour average. During periods of calibration, quality assurance audits, and routine maintenance, only two data points during the hour, at least 15 minutes apart, are required to calculate an hourly average. Each one-hour average must be corrected to seven percent oxygen on an hourly basis using the one-hour arithmetic average of the oxygen or carbon dioxide continuous emissions monitoring system.</li> <li>- For oxygen or carbon dioxide, a one-hour average. [Minn. R. 7011.1260, subp. 4(A), Minn. R. 7011.1260, subp. 4(B), Minn. R. 7011.1260, subp. 4(C), Minn. R. 7011.1260, subp. 4(G)]</li> </ul>

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5.3.7	<p>Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.</p> <p>Continuous monitors must be operated to measure and record data for at least 75 percent of the hours per day for 90 percent of the days of the calendar quarter that the waste combustor is operating and combusting solid waste. [40 CFR 60.13(e), Minn. R. 7011.1260, subp. 5(B), Minn. R. 7017.1010, subp. 1(A), Minn. R. 7017.1090]</p>
5.3.8	<p>QA Plan: Develop and implement a written quality assurance plan that covers each CEMS. The plan must be on site and available for inspection within 30 days after monitor certification. The plan must contain all of the information required by 40 CFR Part 60, Appendix F, Section 3. The plan must include the manufacturer's spare parts list for each CEMS and require that those parts be kept at the facility unless the Commissioner gives written approval to exclude specific spare parts from the list. [40 CFR pt. 60, Appendix F, 3, Minn. R. 7017.1010, subp. 1(C), Minn. R. 7017.1170, subp. 2]</p>
5.3.9	<p>CEMS QA/QC: The Permittee is subject to the performance specifications listed in 40 CFR pt. 60, Appendix B and shall operate, calibrate, and maintain each CEMS according to the QA/QC procedures in 40 CFR pt. 60, Appendix F as amended and maintain a written QA/QC program available in a form suitable for inspection. [40 CFR 60.13(a), 40 CFR pt. 60, Appendix F, Minn. R. 7017.1010, subp. 1(A)]</p>
5.3.10	<p>CEMS Daily Calibration Drift Test: Check the zero (low level value between 0 and 20 percent of span value) and span (50 to 100 percent of span value) calibration drifts at least once daily. The zero and span must, at a minimum, be adjusted whenever the drift exceeds two times the limit specified in 40 CFR pt. 60, Appendix B. 40 CFR pt. 60, Appendix F, Section 4.3.1 must be used to determine out-of-control periods for CEMS. [40 CFR 60.13(d)(1), 40 CFR pt. 60, Appendix F, 4.1, Minn. R. 7017.1010, subp. 1(A), Minn. R. 7017.1170, subp. 3]</p>
5.3.11	<p>Recordkeeping: The Permittee shall retain records of all CEMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source. [40 CFR 60.7(f), Minn. R. 7017.1130, Minn. R. 7019.0100, subp. 1]</p>
5.3.12	<p>CEMS Monitor Design: Each CEMS shall be designed to complete a minimum of one cycle of sampling, analyzing, and data recording in each 15-minute period. [40 CFR 60.13(e)(2), Minn. R. 7017.1010, subp. 1(A)]</p>
<b>COMG 3</b>	<b>Continuous Opacity Monitors</b>
5.4.1	<p>Additional monitoring requirements may apply. The Permittee is responsible for meeting all applicable requirements. [Minn. R. 7007.0800, subp. 4(A)]</p>
5.4.2	<p>Monitoring Data: All COMS data must be reduced to six-minute averages. Six-minute opacity averages shall be calculated from 36 or more data points equally spaced over each six-minute period. [40 CFR 60.13(e)(1), 40 CFR 60.13(h)(2), Minn. R. 7017.1200, subp. 1-3]</p>
5.4.3	<p>Emissions Monitoring: The Permittee must use a COMS to measure emissions from EQUI 1 and EQUI 2, each. [40 CFR pt. 60, Subp. Cb, Minn. R. 7017.1010, subp 1]</p>
5.4.4	<p>Continuous Operation: COMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A COMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment. [40 CFR 60.13(e), Minn. R. 7017.1090]</p>
5.4.5	<p>QC Program: the facility owner or operator must conduct quality assurance and quality control as specified in Procedure 3 - Quality Assurance Requirements for Continuous Opacity Monitoring</p>

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	Systems at Stationary Sources, 40 CFR Pt. 60, Appendix F. [Minn. R. 7017.1215]
5.4.6	COMS Daily Calibration Drift Test: The Calibration Drift must be quantified and recorded at zero (low-level) and upscale (high-level) calibration drift at least once daily according to the procedures listed in 40 CFR 60.13(d)(2) and pt. 60, Appendix B, PS 1. The zero and upscale calibration levels must be determined using the span value specified in the applicable requirement. If the applicable requirement does not specify a span value, a span value of 60, 70, or 80 percent opacity must be used unless an alternative span value is approved by the commissioner. 40 CFR pt. 60, Appendix F must be used to determine out-of-control periods for COMS. [40 CFR 60.13(d)(1), Minn. R. 7017.1215]
5.4.7	COMS Calibration Error Audit Results Summary: due 30 days after end of each calendar quarter in which the COMS calibration error audit was completed. [Minn. R. 7017.1220]
5.4.8	Recordkeeping: The owner or operator must retain records of all COMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source. [Minn. R. 7017.1130]
5.4.9	Notification of Compliance Status: Due 30 days before performance test required by 40 CFR 60.8 if COMS data results will be used in lieu of 40 CFR, Part 60, Appendix A, Method 9 observation data to determine compliance with the opacity standard as allowed by 40 CFR 60.11(e)(5). [40 CFR 60.7(a)(7)]
<b>EQUI 1</b>	<b>Boiler 1</b>
5.5.1	Steam Flow <= 122,719 pounds per hour on a four hour block average. This is 110% of the steam production during the most recent EQUI 1 test (April 05-06, 2023) that demonstrated compliance for PCDD/PCDF emissions. Steam production shall not exceed 122,719 pounds per hour until a new test is conducted to establish a new maximum steam production capacity or as allowed by Minn. R. 7011.1240, subp. 5 as described below. [Minn. R. 7011.1240, subp. 5]
5.5.2	<p>Applicability of Standards. The standards of Minn. R. 7011.1227, Minn. R. 7011.1228, Minn. R. 7011.1229, Minn. R. 7011.1230, Minn. R. 7011.1233, Minn. R. 7011.1240, subp. 2, and Minn. R. 7011.1272, subp. 2, apply at all times when waste is being continuously burned, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction does not exceed three hours. Fugitive emissions standards applicable to ash conveying systems do not apply during maintenance and repair of ash conveying systems. "Malfunction" means any sudden and unavoidable failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner. Failures that are caused entirely or in part by poor maintenance, careless operation, or any other preventable upset condition or preventable equipment breakdown are not considered malfunctions.</p> <p>The start-up period commences when the waste combustor begins the continuous burning of solid waste and does not include any warm-up period when the waste combustor is combusting fossil fuel or other solid fuel.</p> <p>Continuous burning is the continuous, semicontinuous, or batch feeding of solid waste for purposes of waste disposal, energy production, or providing heat to the combustion system in preparation for waste disposal or energy production. The use of solid waste solely to provide thermal protection of the grate or hearth during the start-up period when municipal solid waste is not being fed to the grate is not considered to be continuous burning. [Minn. R. 7011.1215, subp. 4]</p>
5.5.3	The Permittee must not cause gases to be emitted from EQUI 1 in excess of the applicable standards of Minn. R. 7011.1227 and 7011.1228. Emissions, except opacity, must be calculated under standard conditions corrected to seven percent oxygen on a dry volume basis. The Permittee may determine compliance with the emission limitations using carbon dioxide measurements corrected to an equivalent of seven percent oxygen. [Minn. R. 7011.1225, subp. 1(A)]
5.5.4	The Permittee must limit combustion ash from an ash conveying system, or buildings or enclosures of ash conveying systems, including conveyor transfer points, Visible Emissions <= 5 percent of the observation period (i.e. 9 minutes per three-hour period) (hourly observation period using three 1-

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	hour observation periods), as determined by 40 CFR pt. 60, Appendix A, Method 22, as amended. This limit does not apply to visible emissions discharged inside buildings or enclosures of ash conveying systems. [Minn. R. 7011.1225, subp. 1(B)]
5.5.5	The Permittee must limit emissions of Front-half Particulate Matter $\leq 0.011$ grains per dry standard cubic foot. This limit is applied in accordance with the "Applicability of Standards" stated in this permit. [Minn. R. 7011.1227]
5.5.6	The Permittee must limit emissions of Particulate Matter $\leq 0.020$ grains per dry standard cubic foot. This limit is applied in accordance with the "Applicability of Standards" stated in this permit. [Minn. R. 7011.1227]
5.5.7	The Permittee must limit emissions of Particulate Matter $\leq 25$ milligrams per dscm, corrected to 7 percent oxygen. [Minn. R. 7007.0800, subp. 2(A)]
5.5.8	The Permittee must limit Opacity $\leq 10$ percent opacity 6-minute average, calculated using 36 or more data points equally spaced over a six-minute period. [Minn. R. 7011.1227, Minn. R. 7011.1260, subp.4(F)]
5.5.9	The Permittee must limit emissions of Sulfur Dioxide $\leq 29$ parts per million or 75 percent control, whichever is less stringent. The Permittee must measure emissions using the geometric average of the one-hour arithmetic average emission concentration during each 24-hour daily period measured from midnight to midnight. At least four data points equally spaced in time shall be used to calculate each one-hour arithmetic average. During periods of calibration, quality assurance audits, and routine maintenance, only two data points during the hour, at least 15 minutes apart, are required to calculate an hourly average. Each one-hour average must be corrected to seven percent oxygen on an hourly basis using the one-hour arithmetic average of the oxygen or carbon dioxide continuous emissions monitoring system. [Minn. R. 7011.1227, Minn. R. 7011.1260, subp. 4(D)]
5.5.10	The Permittee must limit emissions of Carbon Monoxide $\leq 200$ parts per million using a daily 24-hour arithmetic average measured between 12 midnight and the following midnight. The four-hour and 24-hour average must be calculated from one-hour arithmetic averages. At least four points equally spaced in time shall be used to calculate each one-hour average. During periods of calibration, quality assurance audits, and routine maintenance, only two data points during the hour, at least 15 minutes apart, are required to calculate an hourly average. Each one-hour average must be corrected to seven percent oxygen on an hourly basis using the one-hour arithmetic average of the oxygen or carbon dioxide continuous emissions monitoring system. [Minn. R. 7011.1227, Minn. R. 7011.1260, subp. 4(C)]
5.5.11	The Permittee must limit emissions of Nitrogen Oxides $\leq 250$ parts per million using the arithmetic average of the one-hour arithmetic average emission concentration during each 24-hour daily period measured from midnight to midnight. At least four data points equally spaced in time must be used to calculate each one-hour arithmetic average. During periods of calibration, quality assurance audits, and routine maintenance, only two data points during the hour, at least 15 minutes apart, are required to calculate an hourly average. Each one-hour average must be corrected to seven percent oxygen on an hourly basis using the one-hour arithmetic average of the oxygen or carbon dioxide continuous emissions monitoring system. [Minn. R. 7011.1228, Minn. R. 7011.1260, subp. 4(E)]
5.5.12	The Permittee must limit emissions of Nitrogen Oxides $\leq 230$ parts per million 24-hour block average basis when averaging nitrogen oxide emissions across the waste combustor facility. If emissions averaging is used, the Permittee must average nitrogen oxide emissions according to the procedures in 40 CFR 60.33b(d)(1). Prior to using emissions averaging to comply with this limit, the Permittee must identify that they plan to use emissions averaging in the annual report required in Minn. R. 7011.1285, subp. 4. Partial year averaging is allowed upon written approval of the commissioner. [Minn. R. 7011.1228, Minn. R. 7011.1260, subp. 4(E)]
5.5.13	The Permittee must limit emissions of Lead $\leq 400$ microgram per dry std cubic meter, measured using 40 CFR pt. 60, Appendix A, Method 29, as amended. The minimum sample volume is 1.7 dscm. An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 29

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	test run for lead. The average of the lead emission concentrations from three test runs or more must be used to determine compliance. [Minn. R. 7011.1227, Minn. R. 7011.1265, subp. 3(C)]
5.5.14	The Permittee must limit emissions of Muni Waste Combust Organics <= 30 nanogram per dry std cubic meter, measured as total PCDD/PCDF. The Permittee must use 40 CFR pt. 60, Appendix A, Method 23, as amended, to determine compliance with the PCDD/PCDF emission limits. The minimum sample time is four hours per test run. An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 23 test run for PCDD/PCDF. The average of the PCDD/PCDF test runs is used to determine compliance. [Minn. R. 7011.1227, Minn. R. 7011.1265, subp. 3(B)]
5.5.15	The Permittee must limit emissions of Cadmium <= 35 microgram per dry std cubic meter, measured using 40 CFR pt. 60, Appendix A, Method 29, as amended. The minimum sample volume is 1.7 dscm. An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 29 test run for cadmium. The average of the cadmium emission concentrations from three test runs or more must be used to determine compliance. [Minn. R. 7011.1227, Minn. R. 7011.1265, subp. 3(C)]
5.5.16	<p>The Permittee must limit emissions of Hydrogen Chloride &lt;= 29 parts per million or 95 percent control, whichever is less stringent. The Permittee must use 40 CFR pt. 60, Appendix A, Method 26 or 26A, or title 40 CFR pt. 63, Appendix A, Method 320, as amended, for determining the hydrogen chloride emission rate. The minimum sampling time is one hour. An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 26 test run for hydrogen chloride. The average of the hydrogen chloride emission concentration or percent reduction is used to determine compliance.</p> <p>The Permittee must use the formula in Minn. R. 1265, subp 3(A) to calculate the percentage reduction in the potential hydrogen chloride emissions. [Minn. R. 7011.1227, Minn. R. 7011.1265, subp. 3(A)]</p>
5.5.17	The Permittee must limit emissions of Mercury <= 50 microgram per dry std cubic meter or 85% removal (short term), whichever is less stringent. The Permittee must use 40 CFR pt. 60, Appendix A, Method 29, as amended, for measuring emissions of mercury. To determine the mercury concentration, the arithmetic average of three or more samples at the outlet of the air pollution control device must be used. The minimum sample volume is 1.7 dscm. The maximum sample run time is two hours. An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 29 test run for mercury. [Minn. R. 7011.1227, Minn. R. 7011.1265, subps. 3(C)-(D)]
5.5.18	The Permittee must limit emissions of Mercury <= 30 micrograms per dscm or 85% removal (long-term), whichever is less stringent. The Permittee must use 40 CFR pt. 60, Appendix A, Method 29, as amended, for measuring emissions of mercury. To determine the mercury concentration, the arithmetic average of three or more samples at the outlet of the air pollution control device must be used. The minimum sample volume is 1.7 dscm. The maximum sample run time is two hours. An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 29 test run for mercury. [Minn. R. 7011.1227, Minn. R. 7011.1265, subps. 3(C)-(D)]
5.5.19	The Permittee must limit Fuel Usage <= 180 gallons per hour of used oil and used oil sorbents. [Minn. R. 7007.0800, subp. 2(A)]
5.5.20	The Permittee must limit Fuel Usage > 30 percent by weight RDF of the total fuel input as measured on a 24-hour basis. On each day, the Permittee must calculate the fuel feed stream composition as the ratio of the weights of RDF to RDF and all other fuels delivered to the combustion chamber, for the previous calendar day. [Minn. R. 7007.0800, 2(A), Minn. R. 7011.1201, subp. 17]
5.5.21	<p>Daily Operating Record. The Permittee must maintain on-site a daily record for the operation of EQUI 1. The record must contain:</p> <ul style="list-style-type: none"> <li>- the calendar date;</li> <li>- the hours of operation;</li> <li>- the weight of waste (RDF) combusted (in tons);</li> <li>- the weight of waste requiring disposal at a solid waste land disposal facility, including separated</li> </ul>



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	<p>noncombustibles, excess waste, and ash;</p> <ul style="list-style-type: none"> <li>- the amount and description of industrial solid waste received each day, the generator's name, and the method of handling;</li> <li>- the measurements and determination of emissions averages as required in Minn. R. 7011.1260, subpart 6;</li> <li>- results of performance tests conducted on waste combustor units as required in this permit;</li> <li>- instances of dumpstack use;</li> <li>- the names of persons who have completed initial review or subsequent annual review of the operating manual;</li> <li>- calendar dates whenever any of the pollutants or parameter levels recorded in 40 CFR 62.15305(b) or the opacity level recorded in 40 CFR 62.15305(a)(1) did not meet the emission limits or operating levels specified in 40 CFR pt. 62, subp. JJJ.</li> <li>- the reasons for exceeding any of the applicable emission limits, percent reductions, or operating levels and parameters specified in this permit, or six-minute average COMS measurements that exceed the opacity limit, and a description of the corrective actions the Permittee took, or is taking, to meet the emission limits or operating levels.</li> <li>- reasons for not obtaining the minimum number of hours or collecting the minimum amount of data required under 40 CFR 62.15205 and 62.15280 for sulfur dioxide or operational data for opacity, carbon monoxide, steam flow, load levels of the municipal waste combustion unit, and temperatures of the flue gases at the inlet of the particulate matter control device, and a description of corrective actions the Permittee took, or is taking, to meet the emission limits or operating levels.</li> <li>- the date of the calibration of all signal conversion elements associated with steam flow monitoring as required in Minn. R. 7011.1265, subp. 4.</li> <li>- the time when RDF begins feeding and the unit load of the steam turbine at that time;</li> <li>- the time when the RDF feed to the combustion chamber ceases;</li> <li>- the time when PM control equipment bypass begins;</li> <li>- the time when PM control equipment bypass ceases;</li> <li>- the time when auxiliary fuel use begins;</li> <li>- the time when auxiliary fuel use ceases;</li> <li>- the quantity of used oil and used oil sorbents burned on a gallon per hour basis;</li> <li>- the number of hours per day that the used oil an used oil sorbents are burned;</li> <li>- the source of the used oil;</li> <li>- the weight of wood combusted (in tons);</li> <li>- the ratio of RDF weight to the weight of RDF and all other fuels delivered to the combustion chamber for the previous 24-hour basis;</li> <li>- if the Permittee uses an additive to control Hg or PCDD/PCDF, the reasons for not maintaining the additive system operating parameter as determined in Minn. R. 7011.1272, subp. 2 and the corrective actions taken; and - if the Permittee uses an additive to control Hg or PCDD/PCDF, the reasons for not maintaining the additive mass feed rates as determined in Minn. R. 7011.1272, subp. 1 and the corrective actions taken. [Minn. R. 7007.0800, subps. 4-5, Minn. R. 7011.1285, subp. 2]</li> </ul>
5.5.22	<p>During the annual PCDD/PCDF performance test and the two weeks preceding the annual PCDD/PCDF performance test, no waste combustor maximum demonstrated capacity is applicable.</p> <p>The commissioner shall waive the maximum demonstrated capacity limit for the purpose of evaluating system performance, testing new technology or control technologies, diagnostic testing, or related activities for the purpose of improving facility performance or advancing the state-of-the-art for controlling facility emissions, provided a written notification is submitted to the commissioner 30 days prior to undertaking any of the activities identified in this item, with the following information:</p> <ol style="list-style-type: none"> <li>(1) a description of the proposed project, and the outcome the project is designed to evaluate;</li> <li>(2) how the project conforms with the activities described in this subpart for which the maximum demonstrated capacity limit can be waived; and</li> <li>(3) the length of time the project will take to complete. [Minn. R. 7011.1240, subp. 5]</li> </ol>

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5.5.23	<p>Exceeding continuously monitored emission limits. If accurate and valid data results collected from continuous monitors for sulfur dioxide, nitrogen oxides, or carbon monoxide data exceed emission limits established in Minn. R. 7011.1225 or in this permit after normal start-up, the Permittee must undertake the following actions:</p> <p>A. The Permittee must report the exceedance(s) to the Commissioner as soon as reasonably possible giving consideration to matters of plant or worker safety, or access to communications.</p> <p>B. The Permittee must commence appropriate repairs or modifications to return EQUI 1 to compliance within 72 hours of the exceedance.</p> <p>C. If EQUI 1 cannot be returned to compliance within 72 hours of the occurrence of the exceedance, the Permittee must shut down EQUI 1. If the modifications to return EQUI 1 to compliance require an amendment of this permit, the Permittee must shut down EQUI 1 within 72 hours of the exceedance.</p> <p>D. When repairs or modifications have been completed, the Permittee must demonstrate to the Commissioner that EQUI 1 is in compliance. The Permittee may start up EQUI 1 after the Permittee has notified the Commissioner in writing of the date the Permittee plans to start up EQUI 1 and the date that compliance testing is scheduled. The Permittee must submit notification at least ten days in advance of the compliance test date. [Minn. R. 7011.1260, subp. 7]</p>
5.5.24	<p>The Permittee must calibrate, maintain, and operate a continuous opacity monitoring system when burning solid waste. The monitoring systems must continuously read and record the following outputs:</p> <ol style="list-style-type: none"> <li>1) for carbon monoxide at the outlet of EQUI 1;</li> <li>2) for steam flow or an alternative unit load measurement parameter as described in Minn. R. 7011.1265, subp. 4a, in waste combustors which recover heat with a boiler;</li> <li>3) for flue gas opacity, at a location after which the flue gas has exited the air pollution control equipment; and</li> <li>4) for oxygen or carbon dioxide at each location where carbon monoxide, sulfur dioxide, or nitrogen oxides emissions are monitored, to report corrected concentrations of regulated pollutants;</li> <li>5) for nitrogen oxides; and</li> <li>6) for sulfur dioxide. If the Permittee chooses to determine compliance by monitoring the percent reduction of sulfur dioxide emissions, monitors shall be installed at the inlets and outlets of the air pollution control system. [Minn. R. 7011.1260, subp. 3, Minn. R. 7011.1265, subp. 4]</li> </ol>
5.5.25	<p>Steam flow measurement method. The method contained in ASMEPTC 4.1, section 4, incorporate by reference in Minn. R. 7011.1205, must be used for calculating the steam flow required under Minn. R. 7011.1260, subpart 3, item A, subitem (2). The recommendations of Application: Part II of Fluid Meters, Interim Supplement 19.5 on Instruments and Apparatus, chapter 4, incorporated by reference in Minn. R. 7011.1205, must be followed for design, construction, installation, calibration, and use of nozzles and orifices, except that measurement devices such as flow nozzles and orifices are not required to be recalibrated after they are installed. All signal conversion elements associated with steam flow measurements must be calibrated according to the manufacturer's instructions before each PCDD/PCDF test, and at least once per year. This annual calibration must be recorded in the daily operating record as described in Minn. R. 7011.1285, subpart 2. [Minn. R. 7011.1265, subp. 4]</p>
5.5.26	<p>Operation during performance testing. The Permittee must report operating conditions to the commissioner, including operating parameters of the air pollution control equipment, flue gas temperatures, air flow rates, and pressure drop across the combustion system. [Minn. R. 7011.1265, subp. 6]</p>
5.5.27	<p>Exceeding emission limits. If accurate and valid data results from a performance test demonstrate an exceedance of a standard of performance under Minn. R. 7011.1225 or in the air emission facility</p>

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	<p>permit after normal start-up, the Permittee must undertake the following actions:</p> <p>A. The Permittee must report the exceedance to the commissioner as soon as reasonably possible giving considerations to matters of plant or worker safety, and comply with the applicable reporting provisions of Minn. R. 7007.0800, subp. 6;</p> <p>B. The Permittee must take appropriate steps to return EQUI 1 to compliance and must demonstrate compliance by conducting a performance test within 60 days of the initial report of the exceedance, conduct a performance test and submit the results to the commissioner to demonstrate compliance with this permit;</p> <p>C. If Permittee does not demonstrate compliance within 60 days of the initial report of the exceedance, shut down EQUI 1 on the 61st day;</p> <p>D. EQUI 1 may then be restarted solely to conduct performance testing after Permittee has notified the commissioner in writing of the date on which Permittee plans to restart operation of EQUI 1. Notification must be at least 10 days in advance of the date EQUI 1 will resume operation. The notice must state the date performance testing will be conducted.</p> <p>E. Notwithstanding item D, if shutdown under item C is required, EQUI 1 may be restarted after demonstrating compliance and upon approval by the commissioner. [Minn. R. 7011.1265, subp. 11, Minn. Stat. 116.85, subd. 3]</p>
5.5.28	<p>If the Permittee is required or chooses to conduct testing for mercury emissions every 90 days, Minn. R. 1265, subp. 3(D)(1) and (2) applies:</p> <p>(1) Procedures to determine compliance with the short-term mercury emission concentration limit are described in Minn. R. 7011.1265, subp. 3(D)(1)(a). If EQUI 1 does not show compliance as determined in Minn. R. 7011.1265, subp. 3(D)(1)(a), compliance must be determined as described in Minn. R. 7011.1265, subp. 3(D)(1)(b) and (c).</p> <ul style="list-style-type: none"> <li>- EQUI 1 is in compliance with the mercury concentration limit if the arithmetic average of three or more samples is less than or equal to the applicable short-term mercury emission concentration limit.</li> <li>- If the average computed in Minn. R. 7011.1265, subp. 3(D)(1)(a) exceeds the short-term mercury emission concentration limit, the removal efficiency for each run must be computed as provided in Minn. R. 7011.1265, subp. 3(D)(1)(b).</li> <li>- EQUI 1 is in compliance with the short-term mercury emission limit if the arithmetic average of each of the removal efficiencies as computed in Minn. R. 7011.1265, subp. 3(D)(1)(b) is greater than or equal to 85 percent.</li> </ul> <p>(2) Procedures to determine compliance with the long-term mercury emission concentration limit are described in Minn. R. 7011.1265, subp. 3(D)(2)(a). If EQUI 1 does not show compliance as determined in Minn. R. 7011.1265, subp. 3(D)(2)(a), compliance must be determined as described in Minn. R. 7011.1265, subp. 3(D)(2)(b).</p> <ul style="list-style-type: none"> <li>- To determine compliance with the mercury emission concentration limit, the arithmetic average of all mercury emission concentrations measured in a compliance test available for the previous calendar year must be used. Compliance with the long-term mercury concentration limit must be determined at each occurrence of mercury emission performance testing.</li> <li>- If the average that was computed in Minn. R. 7011.1265, subp. 3(D)(2)(a) exceeds the long-term mercury emission concentration, the removal efficiency for each run must be computed by the equation in Minn. R. 7011.1265, subp. 3(D)(2)(b)(1) . EQUI 1 is in compliance with the long-term mercury emission limit if the arithmetic average of each of the removal efficiencies is greater than or equal to 85 percent.</li> </ul> <p>If the Permittee chooses to conduct testing for mercury emissions every 12 months, Minn. R. 7011.1265, subp.3(D)(3) applies:</p> <ul style="list-style-type: none"> <li>- EQUI 1 is in compliance with the 12-month mercury emission concentration limit if the arithmetic average of three or more samples is less than the 12-month test interval mercury emission concentration limit.</li> </ul>

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	- If the average computed in Minn. R. 7011.1265, subp. 3(D)(3)(a) exceeds the 12-month mercury emission concentration limit, the removal efficiency for each run must be computed by the equation in Minn. R. 7011.1265, subp. 3(D)(1)(b). EQUI 1 is in compliance with the 12-month mercury emission limit if the arithmetic average of the removal efficiencies is greater than 85 percent. [Minn. R. 7011.1265, subp. 3(D)]
<b>EQUI 2</b>	<b>Boiler 2</b>
5.6.1	Steam Flow <= 123,277 pounds per hour on a four hour block average. This is 110% of the steam production during the most recent EQUI 2 test (April 21-22, 2022) that demonstrated compliance for PCDD/PCDF emissions. Steam production shall not exceed 123,277 pounds per hour until a new test is conducted to establish a new maximum steam production capacity or as allowed by Minn. R. 7011.1240, subp. 5 as described below. [Minn. R. 7011.1240, subp. 5]
5.6.2	<p>Applicability of Standards. The standards of Minn. R. 7011.1227, Minn. R. 7011.1228, Minn. R. 7011.1229, Minn. R. 7011.1230, Minn. R. 7011.1233, Minn. R. 7011.1240, subp. 2, and Minn. R. 7011.1272, subp. 2, apply at all times when waste is being continuously burned, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction does not exceed three hours. Fugitive emissions standards applicable to ash conveying systems do not apply during maintenance and repair of ash conveying systems. "Malfunction" means any sudden and unavoidable failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner. Failures that are caused entirely or in part by poor maintenance, careless operation, or any other preventable upset condition or preventable equipment breakdown are not considered malfunctions.</p> <p>The start-up period commences when the waste combustor begins the continuous burning of solid waste and does not include any warm-up period when the waste combustor is combusting fossil fuel or other solid fuel.</p> <p>Continuous burning is the continuous, semicontinuous, or batch feeding of solid waste for purposes of waste disposal, energy production, or providing heat to the combustion system in preparation for waste disposal or energy production. The use of solid waste solely to provide thermal protection of the grate or hearth during the start-up period when municipal solid waste is not being fed to the grate is not considered to be continuous burning. [Minn. R. 7011.1215, subp. 4]</p>
5.6.3	The Permittee must not cause gases to be emitted from EQUI 2 in excess of the applicable standards of Minn. R. 7011.1227 and 7011.1228. Emissions, except opacity, must be calculated under standard conditions corrected to seven percent oxygen on a dry volume basis. The Permittee may determine compliance with the emission limitations using carbon dioxide measurements corrected to an equivalent of seven percent oxygen. [Minn. R. 7011.1225, subp. 1(A)]
5.6.4	The Permittee must limit combustion ash from an ash conveying system, or buildings or enclosures of ash conveying systems, including conveyor transfer points, Visible Emissions <= 5 percent of the observation period (i.e. 9 minutes per three-hour period) (hourly observation period using three 1-hour observation periods), as determined by 40 CFR pt. 60, Appendix A, Method 22, as amended. This limit does not apply to visible emissions discharged inside buildings or enclosures of ash conveying systems. [Minn. R. 7011.1225, subp. 1(B)]
5.6.5	The Permittee must limit emissions of Front-half Particulate Matter <= 0.011 grains per dry standard cubic foot. This limit is applied in accordance with the "Applicability of Standards" stated in this permit. [Minn. R. 7011.1227]
5.6.6	The Permittee must limit emissions of Particulate Matter <= 0.020 grains per dry standard cubic foot. This limit is applied in accordance with the "Applicability of Standards" stated in this permit. [Minn. R. 7011.1227]
5.6.7	The Permittee must limit emissions of Particulate Matter <= 25 milligrams per dscm, corrected to 7 percent oxygen. [Minn. R. 7007.0800, subp. 2(A)]

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5.6.8	The Permittee must limit Opacity <= 10 percent opacity 6-minute average, calculated using 36 or more data points equally spaced over a six-minute period. [Minn. R. 7011.1227, Minn. R. 7011.1260, subp.4(F)]
5.6.9	The Permittee must limit emissions of Sulfur Dioxide <= 29 parts per million or 75 percent control, whichever is less stringent. The Permittee must measure emissions using the geometric average of the one-hour arithmetic average emission concentration during each 24-hour daily period measured from midnight to midnight. At least four data points equally spaced in time shall be used to calculate each one-hour arithmetic average. During periods of calibration, quality assurance audits, and routine maintenance, only two data points during the hour, at least 15 minutes apart, are required to calculate an hourly average. Each one-hour average must be corrected to seven percent oxygen on an hourly basis using the one-hour arithmetic average of the oxygen or carbon dioxide continuous emissions monitoring system. [Minn. R. 7011.1227, Minn. R. 7011.1260, subp. 4(D)]
5.6.10	The Permittee must limit emissions of Carbon Monoxide <= 200 parts per million using a daily 24-hour arithmetic average measured between 12 midnight and the following midnight. The four-hour and 24-hour average must be calculated from one-hour arithmetic averages. At least four points equally spaced in time shall be used to calculate each one-hour average. During periods of calibration, quality assurance audits, and routine maintenance, only two data points during the hour, at least 15 minutes apart, are required to calculate an hourly average. Each one-hour average must be corrected to seven percent oxygen on an hourly basis using the one-hour arithmetic average of the oxygen or carbon dioxide continuous emissions monitoring system. [Minn. R. 7011.1227, Minn. R. 7011.1260, subp. 4(C)]
5.6.11	The Permittee must limit emissions of Nitrogen Oxides <= 250 parts per million using the arithmetic average of the one-hour arithmetic average emission concentration during each 24-hour daily period measured from midnight to midnight. At least four data points equally spaced in time must be used to calculate each one-hour arithmetic average. During periods of calibration, quality assurance audits, and routine maintenance, only two data points during the hour, at least 15 minutes apart, are required to calculate an hourly average. Each one-hour average must be corrected to seven percent oxygen on an hourly basis using the one-hour arithmetic average of the oxygen or carbon dioxide continuous emissions monitoring system. [Minn. R. 7011.1228, Minn. R. 7011.1260, subp. 4(E)]
5.6.12	The Permittee must limit emission of Nitrogen Oxides <= 230 parts per million 24-hour block average basis when averaging nitrogen oxide emissions across the waste combustor facility. If emissions averaging is used, the Permittee shall average nitrogen oxide emissions according to the procedures in 40 CFR Section 60.33b(d)(1). Prior to using emissions averaging to comply with this limit, the Permittee must identify that they plan to use emissions averaging in the annual report required in Minn. R. 7011.1285, subp. 4. Partial year averaging is allowed upon written approval of the commissioner. [Minn. R. 7011.1228, Minn. R. 7011.1260, subp. 4(E)]
5.6.13	The Permittee must limit emissions of Lead <= 400 microgram per dry std cubic meter, measured using 40 CFR pt. 60, Appendix A, Method 29, as amended. The minimum sample volume is 1.7 dscm. An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 29 test run for lead. The average of the lead emission concentrations from three test runs or more must be used to determine compliance. [Minn. R. 7011.1227, Minn. R. 7011.1265, subp. 3(C)]
5.6.14	The Permittee must limit emissions of Muni Waste Combust Organics <= 30 nanogram per dry std cubic meter, measured as total PCDD/PCDF. The Permittee must use 40 CFR pt. 60, Appendix A, Method 23, as amended, to determine compliance with the PCDD/PCDF emission limits. The minimum sample time is four hours per test run. An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 23 test run for PCDD/PCDF. The average of the PCDD/PCDF test runs is used to determine compliance. [Minn. R. 7011.1227, Minn. R. 7011.1265, subp. 3(B)]
5.6.15	The Permittee must limit emissions of Cadmium <= 35 microgram per dry std cubic meter, measured using 40 CFR pt. 60, Appendix A, Method 29, as amended. The minimum sample volume is 1.7 dscm. An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 29

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5.6.16	<p>test run for cadmium. The average of the cadmium emission concentrations from three test runs or more must be used to determine compliance. [Minn. R. 7011.1227, Minn. R. 7011.1265, subp. 3(C)]</p> <p>The Permittee must limit emissions of Hydrogen Chloride <math>\leq</math> 29 parts per million or 95 percent control, whichever is less stringent. The Permittee must use 40 CFR pt. 60, Appendix A, Method 26 or 26A, or title 40 CFR pt. 63, Appendix A, Method 320, as amended, for determining the hydrogen chloride emission rate. The minimum sampling time is one hour. An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 26 test run for hydrogen chloride. The average of the hydrogen chloride emission concentration or percent reduction is used to determine compliance.</p> <p>The Permittee must use the formula in Minn. R. 1265, subp 3(A) to calculate the percentage reduction in the potential hydrogen chloride emissions. [Minn. R. 7011.1227, Minn. R. 7011.1265, subp. 3(A)]</p>
5.6.17	<p>The Permittee must limit emissions of Mercury <math>\leq</math> 30 micrograms per dscm or 85% removal (long-term), whichever is less stringent. The Permittee must use 40 CFR pt. 60, Appendix A, Method 29, as amended, for measuring emissions of mercury. To determine the mercury concentration, the arithmetic average of three or more samples at the outlet of the air pollution control device must be used. The minimum sample volume is 1.7 dscm. The maximum sample run time is two hours. An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 29 test run for mercury. [Minn. R. 7011.1227, Minn. R. 7011.1265, subps. 3(C)-(D)]</p>
5.6.18	<p>The Permittee must limit emissions of Mercury <math>\leq</math> 50 microgram per dry std cubic meter or 85% removal (short term), whichever is less stringent. The Permittee must use 40 CFR pt. 60, Appendix A, Method 29, as amended, for measuring emissions of mercury. To determine the mercury concentration, the arithmetic average of three or more samples at the outlet of the air pollution control device must be used. The minimum sample volume is 1.7 dscm. The maximum sample run time is two hours. An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 29 test run for mercury. [Minn. R. 7011.1227, Minn. R. 7011.1265, subps. 3(C)-(D)]</p>
5.6.19	<p>The Permittee must limit Fuel Usage <math>&gt;</math> 30 percent by weight RDF of the total fuel input as measured on a 24-hour basis. On each day, the Permittee must calculate the fuel feed stream composition as the ratio of the weights of RDF to RDF and all other fuels delivered to the combustion chamber, for the previous calendar day. [Minn. R. 7007.0800, 2(A), Minn. R. 7011.1201, subp. 17]</p>
5.6.20	<p>The Permittee must limit Fuel Usage <math>\leq</math> 180 gallons per hour of used oil and used oil sorbents. [Minn. R. 7007.0800, subp. 2(A)]</p>
5.6.21	<p>Daily Operating Record. The Permittee must maintain on-site a daily record for the operation of EQUI 2. The record must contain:</p> <ul style="list-style-type: none"> <li>- the calendar date;</li> <li>- the hours of operation;</li> <li>- the weight of waste (RDF) combusted (in tons);</li> <li>- the weight of waste requiring disposal at a solid waste land disposal facility, including separated noncombustibles, excess waste, and ash;</li> <li>- the amount and description of industrial solid waste received each day, the generator's name, and the method of handling;</li> <li>- the measurements and determination of emissions averages as required in Minn. R. 7011.1260, subpart 6;</li> <li>- results of performance tests conducted on waste combustor units as required in this permit;</li> <li>- instances of dumpstack use;</li> <li>- the names of persons who have completed initial review or subsequent annual review of the operating manual;</li> <li>- calendar dates whenever any of the pollutants or parameter levels recorded in 40 CFR 62.15305(b) or the opacity level recorded in 40 CFR 62.15305(a)(1) did not meet the emission limits or operating levels specified in 40 CFR pt. 62, subp. JJJ.</li> </ul>

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	<ul style="list-style-type: none"> <li>- the reasons for exceeding any of the applicable emission limits, percent reductions, or operating levels and parameters specified in this permit, or six-minute average COMS measurements that exceed the opacity limit, and a description of the corrective actions the Permittee took, or is taking, to meet the emission limits or operating levels.</li> <li>- reasons for not obtaining the minimum number of hours or collecting the minimum amount of data required under 40 CFR 62.15205 and 62.15280 for sulfur dioxide or operational data for opacity, carbon monoxide, steam flow, load levels of the municipal waste combustion unit, and temperatures of the flue gases at the inlet of the particulate matter control device, and a description of corrective actions the Permittee took, or is taking, to meet the emission limits or operating levels.</li> <li>- the date of the calibration of all signal conversion elements associated with steam flow monitoring as required in Minn. R. 7011.1265, subp. 4.</li> <li>- the time when RDF begins feeding and the unit load of the steam turbine at that time;</li> <li>- the time when the RDF feed to the combustion chamber ceases;</li> <li>- the time when PM control equipment bypass begins;</li> <li>- the time when PM control equipment bypass ceases;</li> <li>- the time when auxiliary fuel use begins;</li> <li>- the time when auxiliary fuel use ceases;</li> <li>- the quantity of used oil and used oil sorbents burned on a gallon per hour basis;</li> <li>- the number of hours per day that the used oil and used oil sorbents are burned;</li> <li>- the source of the used oil;</li> <li>- the weight of wood combusted (in tons);</li> <li>- the ratio of RDF weight to the weight of RDF and all other fuels delivered to the combustion chamber for the previous 24-hour basis;</li> <li>- if the Permittee uses an additive to control Hg or PCDD/PCDF, the reasons for not maintaining the additive system operating parameter as determined in Minn. R. 7011.1272, subp. 2 and the corrective actions taken; and - if the Permittee uses an additive to control Hg or PCDD/PCDF, the reasons for not maintaining the additive mass feed rates as determined in Minn. R. 7011.1272, subp. 1 and the corrective actions taken. [Minn. R. 7007.0800, subps. 4-5, Minn. R. 7011.1285, subp. 2]</li> </ul>
5.6.22	<p>Exceeding of continuously monitored emission limits. If accurate and valid data results collected from continuous monitors for sulfur dioxide, nitrogen oxides, or carbon monoxide data exceed emission limits established in Minn. R. 7011.1225 or in this permit after normal start-up, the Permittee must undertake the following actions:</p> <p>A. The Permittee must report the exceedance(s) to the Commissioner as soon as reasonably possible giving consideration to matters of plant or worker safety, or access to communications.</p> <p>B. The Permittee must commence appropriate repairs or modifications to return EQUI 2 to compliance within 72 hours of the exceedance.</p> <p>C. If EQUI 2 cannot be returned to compliance within 72 hours of the occurrence of the exceedance, the Permittee must shut down EQUI 2. If the modifications to return EQUI 2 to compliance require an amendment of this permit, the Permittee must shut down EQUI 2 within 72 hours of the exceedance.</p> <p>D. When repairs or modifications have been completed, the Permittee must demonstrate to the Commissioner that EQUI 2 is in compliance. The Permittee may start up EQUI 2 after the Permittee has notified the Commissioner in writing of the date the Permittee plans to start up EQUI 2 and the date that compliance testing is scheduled. The Permittee must submit notification at least ten days in advance of the compliance test date. [Minn. R. 7011.1260, subp. 7]</p>
5.6.23	<p>The Permittee must calibrate, maintain, and operate a continuous opacity monitoring system when burning solid waste. The monitoring systems must continuously read and record the following outputs:</p> <p>1) for carbon monoxide at the outlet of EQUI 2;</p>

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	2) for steam flow or an alternative unit load measurement parameter as described in Minn. R. 7011.1265, subp. 4a, in waste combustors which recover heat with a boiler; 3) for flue gas opacity, at a location after which the flue gas has exited the air pollution control equipment; and 4) for oxygen or carbon dioxide at each location where carbon monoxide, sulfur dioxide, or nitrogen oxides emissions are monitored, to report corrected concentrations of regulated pollutants; 5) for nitrogen oxides; and 6) for sulfur dioxide. If the Permittee chooses to determine compliance by monitoring the percent reduction of sulfur dioxide emissions, monitors shall be installed at the inlets and outlets of the air pollution control system. [Minn. R. 7011.1260, subp. 3, Minn. R. 7011.1265, subp. 4]
5.6.24	Steam flow measurement method. The method contained in ASMEPTC 4.1, section 4, incorporate by reference in Minn. R. 7011.1205, must be used for calculating the steam flow required under Minn. R. 7011.1260, subpart 3, item A, subitem (2). The recommendations of Application: Part II of Fluid Meters, Interim Supplement 19.5 on Instruments and Apparatus, chapter 4, incorporated by reference in Minn. R. 7011.1205, must be followed for design, construction, installation, calibration, and use of nozzles and orifices, except that measurement devices such as flow nozzles and orifices are not required to be recalibrated after they are installed. All signal conversion elements associated with steam flow measurements must be calibrated according to the manufacturer's instructions before each PCDD/PCDF test, and at least once per year. This annual calibration must be recorded in the daily operating record as described in Minn. R. 7011.1285, subpart 2. [Minn. R. 7011.1265, subp. 4]
5.6.25	Operation during performance testing. The Permittee must report operating conditions to the commissioner, including operating parameters of the air pollution control equipment, flue gas temperatures, air flow rates, and pressure drop across the combustion system. [Minn. R. 7011.1265, subp. 6]
5.6.26	During the annual PCDD/PCDF performance test and the two weeks preceding the annual PCDD/PCDF performance test, no waste combustor maximum demonstrated capacity is applicable.  The commissioner shall waive the maximum demonstrated capacity limit for the purpose of evaluating system performance, testing new technology or control technologies, diagnostic testing, or related activities for the purpose of improving facility performance or advancing the state-of-the-art for controlling facility emissions, provided a written notification is submitted to the commissioner 30 days prior to undertaking any of the activities identified in this item, with the following information: (1) a description of the proposed project, and the outcome the project is designed to evaluate; (2) how the project conforms with the activities described in this subpart for which the maximum demonstrated capacity limit can be waived; and (3) the length of time the project will take to complete. [Minn. R. 7011.1240, subp. 5]
5.6.27	Exceeding emission limits. If accurate and valid data results from a performance test demonstrate an exceedance of a standard of performance under Minn. R. 7011.1225 or in the air emission facility permit after normal start-up, the Permittee must undertake the following actions: A. The Permittee must report the exceedance to the commissioner as soon as reasonably possible giving considerations to matters of plant or worker safety, and comply with the applicable reporting provisions of Minn. R. 7007.0800, subp. 6; B. The Permittee must take appropriate steps to return EQUI 2 to compliance and must demonstrate compliance by conducting a performance test within 60 days of the initial report of the exceedance, conduct a performance test and submit the results to the commissioner to demonstrate compliance with this permit; C. If Permittee does not demonstrate compliance within 60 days of the initial report of the exceedance, shut down EQUI 2 on the 61st day; D. EQUI 2 may then be restarted solely to conduct performance testing after Permittee has notified the commissioner in writing of the date on which Permittee plans to restart operation of EQUI 2. Notification must be at least 10 days in advance of the date EQUI 2 will resume operation. The notice



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	<p>must state the date performance testing will be conducted.            E. Notwithstanding item D, if shutdown under item C is required, EQUI 2 may be restarted after demonstrating compliance and upon approval by the commissioner. [Minn. R. 7011.1265, subp. 11, Minn. Stat. 116.85, subd. 3]</p>
5.5.28	<p>If the Permittee is required or chooses to conduct testing for mercury emissions every 90 days, Minn. R. 1265, subp. 3(D)(1) and (2) applies:</p> <p>(1) Procedures to determine compliance with the short-term mercury emission concentration limit are described in Minn. R. 7011.1265, subp. 3(D)(1)(a). If EQUI 2 does not show compliance as determined in Minn. R. 7011.1265, subp. 3(D)(1)(a), compliance must be determined as described in Minn. R. 7011.1265, subp. 3(D)(1)(b) and (c).</p> <ul style="list-style-type: none"> <li>- EQUI 2 is in compliance with the mercury concentration limit if the arithmetic average of three or more samples is less than or equal to the applicable short-term mercury emission concentration limit.</li> <li>- If the average computed in Minn. R. 7011.1265, subp. 3(D)(1)(a) exceeds the short-term mercury emission concentration limit, the removal efficiency for each run must be computed as provided in Minn. R. 7011.1265, subp. 3(D)(1)(b).</li> <li>- EQUI 2 is in compliance with the short-term mercury emission limit if the arithmetic average of each of the removal efficiencies as computed in Minn. R. 7011.1265, subp. 3(D)(1)(b) is greater than or equal to 85 percent.</li> </ul> <p>(2) Procedures to determine compliance with the long-term mercury emission concentration limit are described in Minn. R. 7011.1265, subp. 3(D)(2)(a). If EQUI 2 does not show compliance as determined in Minn. R. 7011.1265, subp. 3(D)(2)(a), compliance must be determined as described in Minn. R. 7011.1265, subp. 3(D)(2)(b).</p> <ul style="list-style-type: none"> <li>- To determine compliance with the mercury emission concentration limit, the arithmetic average of all mercury emission concentrations measured in a compliance test available for the previous calendar year must be used. Compliance with the long-term mercury concentration limit must be determined at each occurrence of mercury emission performance testing.</li> <li>- If the average that was computed in Minn. R. 7011.1265, subp. 3(D)(2)(a) exceeds the long-term mercury emission concentration, the removal efficiency for each run must be computed by the equation in Minn. R. 7011.1265, subp. 3(D)(2)(b)(1) . EQUI 2 is in compliance with the long-term mercury emission limit if the arithmetic average of each of the removal efficiencies is greater than or equal to 85 percent.</li> </ul> <p>If the Permittee chooses to conduct testing for mercury emissions every 12 months, Minn. R. 7011.1265, subp.3(D)(3) applies:</p> <ul style="list-style-type: none"> <li>- EQUI 2 is in compliance with the 12-month mercury emission concentration limit if the arithmetic average of three or more samples is less than the 12-month test interval mercury emission concentration limit.</li> <li>- If the average computed in Minn. R. 7011.1265, subp. 3(D)(3)(a) exceeds the 12-month mercury emission concentration limit, the removal efficiency for each run must be computed by the equation in Minn. R. 7011.1265, subp. 3(D)(1)(b). EQUI 2 is in compliance with the 12-month mercury emission limit if the arithmetic average of the removal efficiencies is greater than 85 percent. [Minn. R. 7011.1265, subp. 3(D)]</li> </ul>
<b>EQUI 36</b>	<b>Lime Storage Silo</b>
5.7.1	Opacity <= 20 percent opacity. [Minn. R. 7011.0715, subp. 1(B)]
5.7.2	Particulate Matter <= 0.30 grains per dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. [Minn. R. 7011.0715, subp. 1(A)]
5.7.3	Visible Emissions: The Permittee must check for visible emissions during daylight hours at least once each day of operation when the silo is being filled with lime. In the event that the silo is filled during

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	<p>non-daylight hours, lighting will be utilized during the inspection. If visible emissions are observed, the Permittee shall determine the cause and take corrective actions as soon as possible. The Permittee must record each visible emission check containing the following information:</p> <ol style="list-style-type: none"> <li>1) Printed name of observer;</li> <li>2) Signature of observer;</li> <li>3) Date and time of observation;</li> <li>4) State if visible emissions were observed or were not observed;</li> <li>5) Description of investigation into the cause of visible emissions and corrective actions completed for each observation that visible emissions were observed;</li> <li>6) Weather conditions (temperature, cloud cover, wind, precipitation);</li> <li>7) Indicate if the plume was limited by visible moisture within the plume; and</li> <li>8) Emission unit (EQUI 36), control equipment (TREA 7) and Stack/Vent (STRU 12) ID number(s). [Minn. R. 7007.0800, subp. 2(A)]</li> </ol>
<b>EQUI 37</b>	<b>Lime Storage Silo</b>
5.8.1	Opacity <= 20 percent opacity. [Minn. R. 7011.0715, subp. 1(B)]
5.8.2	Particulate Matter <= 0.30 grains per dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. [Minn. R. 7011.0715, subp. 1(A)]
5.8.3	<p>Visible Emissions: The Permittee must check for visible emissions during daylight hours at least once each day of operation when the silo is being filled with lime. In the event that the silo is filled during non-daylight hours, lighting will be utilized during the inspection. If visible emissions are observed, the Permittee shall determine the cause and take corrective actions as soon as possible. The Permittee must record each visible emission check containing the following information:</p> <ol style="list-style-type: none"> <li>1) Printed name of observer;</li> <li>2) Signature of observer;</li> <li>3) Date and time of observation;</li> <li>4) State if visible emissions were observed or were not observed;</li> <li>5) Description of investigation into the cause of visible emissions and corrective actions completed for each observation that visible emissions were observed;</li> <li>6) Weather conditions (temperature, cloud cover, wind, precipitation);</li> <li>7) Indicate if the plume was limited by visible moisture within the plume; and</li> <li>8) Emission unit (EQUI 37), control equipment (TREA 8) and Stack/Vent (STRU 13) ID number(s). [Minn. R. 7007.0800, subp. 2(A)]</li> </ol>
<b>EQUI 39</b>	<b>Auxiliary Boiler</b>
5.9.1	Filterable Particulate Matter <= 0.6 pounds per million Btu heat input. The potential to emit from the unit is 0.00745 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.0510, subp. 1]
5.9.2	Opacity <= 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. [Minn. R. 7011.0510, subp. 2]
5.9.3	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
5.9.4	The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]
5.9.5	The Permittee must meet the notification requirements in 40 CFR 63.7545 according to the schedule in 40 CFR 63.7545 and in 40 CFR pt. DDDDD, subp. A. Some of the notifications must be submitted before the Permittee is required to comply with the emission limits and work practice standards in 40 CFR pt. 63, subp. DDDDD. [40 CFR 63.7495(d), Minn. R. 7011.7050]
5.9.6	The Permittee must meet each work practice standard in 40 CFR pt. 63, subp. DDDDD, Table 3 that applies, for each boiler or process heater at the source, except as provided under 40 CFR 63.7522. The Permittee must meet these requirements at all times the affected unit is operating. [40 CFR 63.7500(a), 40 CFR 63.7500(a)(1), 40 CFR 63.7505(a), Minn. R. 7011.7050]
5.9.7	At all times, the Permittee must operate and maintain any affected source (as defined in 40 CFR

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	63.7490), including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 CFR 63.7500(a)(3), Minn. R. 7011.7050]
5.9.8	<p>The Permittee must conduct a biennial tune-up of the boiler or process heater as specified in 40 CFR 63.7540(a)(10)(i) through (vi) (listed below) to demonstrate continuous compliance.</p> <p>(i) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (the Permittee may perform the burner inspection any time prior to the tune-up or delay the burner inspection until the next scheduled unit shutdown). Units that produce electricity for sale may delay the burner inspection until the first outage, not to exceed 36 months from the previous inspection. At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment;</p> <p>(ii) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;</p> <p>(iii) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (the Permittee may delay the inspection until the next scheduled unit shutdown). Units that produce electricity for sale may delay the inspection until the first outage, not to exceed 36 months from the previous inspection;</p> <p>(iv) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any nitrogen oxide requirement to which the unit is subject;</p> <p>(v) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer; and</p> <p>(vi) Maintain on-site and submit, if requested by the Administrator, a report containing the information in 40 CFR 63.7540(a)(10)(vi)(A) through (C),        (A) The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater;        (B) A description of any corrective actions taken as a part of the tune-up; and        (C) The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit. [40 CFR 63.7500(e), 40 CFR 63.7540(a)(10)(i)-(vi), 40 CFR 63.7540(a)(11), 40 CFR pt. 63, subp. DDDDD, Table 3, Minn. R. 7011.7050]</p>
5.9.9	The Permittee must conduct a biennial performance tune-up according to 40 CFR 63.7540(a)(11). Each biennial tune-up specified in 40 CFR 63.7540(a)(11) must be conducted no more than 25 months after the previous tune-up. [40 CFR 63.7515(d), Minn. R. 7011.7050]
5.9.10	If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup. [40 CFR 63.7540(a)(13), Minn. R. 7011.7050]
5.9.11	The Permittee must submit to the Administrator all of the notifications in 40 CFR 63.7(b) and (c), 63.8(e), (f)(4) and (6), and 63.9(b) through (h) that apply by the dates specified. [40 CFR 63.7545(a), Minn. R. 7011.7050]

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5.9.12	<p>If the Permittee intends to use a fuel other than natural gas, refinery gas, gaseous fuel subject to another subpart of 40 CFR pt. 63, 40 CFR pt. 60, 40 CFR pt. 61, or 40 CFR pt.65, or another gas 1 fuel to fire EQUI 41 during a period of natural gas curtailment or supply interruption, as defined in 40 CFR 63.7575, the Permittee must submit a notification of alternative fuel use within 48 hours of the declaration of each period of natural gas curtailment or supply interruption, as defined in 40 CFR 63.7575. The notification must include the information specified in 40 CFR 63.7545(f)(1) through (5) (listed below).</p> <p>(1) Company name and address.</p> <p>(2) Identification of the affected unit.</p> <p>(3) Reason the Permittee is unable to use natural gas or equivalent fuel, including the date when the natural gas curtailment was declared or the natural gas supply interruption began.</p> <p>(4) Type of alternative fuel that the Permittee intends to use.</p> <p>(5) Dates when the alternative fuel use is expected to begin and end. [40 CFR 63.7545(f), Minn. R. 7011.7050]</p>
5.9.13	<p>If the Permittee switched fuels or made a physical change to the boiler or process heater and the fuel switch or physical change resulted in the applicability of a different subcategory, the Permittee must provide notice of the date upon which the Permittee switched fuels or made the physical change within 30 days of the switch/change. The notification must identify:</p> <p>(1) The name of the owner or operator of the affected source, as defined in 40 CFR 63.7490, the location of the source, the boiler(s) and process heater(s) that have switched fuels, were physically changed, and the date of the notice.</p> <p>(2) The currently applicable subcategory under 40 CFR pt. 63, subp. DDDDD.</p> <p>(3) The date upon which the fuel switch or physical change occurred. [40 CFR 63.7545(h), Minn. R. 7011.7050]</p>
5.9.14	<p>The Permittee must submit each report, according to 40 CFR 63.7550(h), by the date in 40 CFR pt. 63, subp. DDDDD, Table 9 and according to the requirements in 40 CFR 63.7550(b)(1) through (4). The Permittee may submit only a biennial compliance report as specified in 40 CFR 63.7550(b)(1) through (4), instead of a semi-annual compliance report.</p> <p>(1) The first semi-annual compliance report must cover the period beginning on January 31, 2016 and ending on December 31. If submitting a biennial compliance report, the first compliance report must cover the period beginning on January 31, 2016 and ending on December 31 within 2 years, as applicable, after January 31, 2016.</p> <p>(2) The first semi-annual compliance report must be postmarked or submitted no later than July 31. The first biennial compliance report must be postmarked or submitted no later than January 31.</p> <p>(3) Each subsequent semi-annual compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31. Biennial compliance reports must cover the applicable 2-year periods from January 1 to December 31.</p> <p>(4) Each subsequent semi-annual compliance report must be postmarked or submitted no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period. Biennial compliance reports must be postmarked or submitted no later than January 31. [40</p>

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5.9.15	<p>CFR 63.7550(a), 40 CFR 63.7550(b), Minn. R. 7011.7050]</p> <p>The Permittee must submit a compliance report according to the requirements in 40 CFR 63.7550(b). The report must contain:</p> <p>a. Information required in 40 CFR 63.7550(c)(1) through (c)(5)(i)-(iii), (xiv) and (xvii) (listed below)</p> <p>(i) Company and Facility name and address.</p> <p>(ii) Process unit information, emissions limitations, and operating parameter limitations.</p> <p>(iii) Date of report and beginning and ending dates of the reporting period.</p> <p>(xiv) Include the date of the most recent tune-up for each unit subject to only the requirement to conduct a biennial tune-up according to 40 CFR 63.7540(a)(11). Include the date of the most recent burner inspection if it was not done biennially and was delayed until the next scheduled or unscheduled unit shutdown.</p> <p>(xvii) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.</p> <p>b. If there are no deviations from the requirements for work practice standards for periods of startup and shutdown in 40 CFR pt. 63, subp. DDDDD, Table 3 that apply, a statement that there were no deviations from the work practice standards during the reporting period;</p> <p>c. If you have a deviation from a work practice standard for periods of startup and shutdown, during the reporting period, the report must contain the information in 40 CFR 63.7550(d); [40 CFR 63.7550(c), 40 CFR 63.7550(c)(1), 40 CFR 63.7550(c)(5)(i)-(iii), (xiv), and (xvii), 40 CFR 63.subp. DDDDD, Table 9, Minn. R. 7011.7050]</p>
5.9.16	<p>The Permittee must submit all reports required by 40 CFR pt. 63, subp. DDDDD, Table 9 electronically to the EPA via the CEDRI. (CEDRI can be accessed through the EPA's CDX.) The Permittee must use the appropriate electronic report in CEDRI for 40 CFR pt. 63, subp. DDDDD. Instead of using the electronic report in CEDRI for 40 CFR pt. 63, subp. DDDDD, the Permittee may submit an alternate electronic file consistent with the XML schema listed on the CEDRI Web site (<a href="http://www.epa.gov/ttn/chief/cedri/index.html">http://www.epa.gov/ttn/chief/cedri/index.html</a>), once the XML schema is available. If the reporting form specific to 40 CFR pt. 63, subp. DDDDD is not available in CEDRI at the time that the report is due, the Permittee must submit the report to the Administrator at the appropriate address listed in 40 CFR 63.13. The Permittee must begin submitting reports via CEDRI no later than 90 days after the form becomes available in CEDRI. [40 CFR 63.7550(h)(3), Minn. R. 7011.7050]</p>
5.9.17	<p>The Permittee must keep records of copies of each notification and report that the Permittee submitted to comply with 40 CFR pt. 63, subp. DDDDD, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report that the Permittee submitted, according to the requirements in 40 CFR 63.10(b)(2)(xiv). [40 CFR 63.7555(a)(1), Minn. R. 7011.7050]</p>
5.9.18	<p>If the Permittee uses an alternative fuel other than natural gas, refinery gas, gaseous fuel subject to another subpart under 40 CFR pt. 63, other gas 1 fuel, or gaseous fuel subject to another subpart of 40 CFR pt. 63 or 40 CFR pt. 60, 61, or 65, the Permittee must keep records of the total hours per calendar year that alternative fuel is burned and the total hours per calendar year that the unit operated during periods of gas curtailment or gas supply emergencies. [40 CFR 63.7555(h), Minn. R. 7011.7050]</p>
5.9.19	<p>The Permittee must keep records in a form suitable and readily available for expeditious review, according to 40 CFR 63.10(b)(1).</p>

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	<p>As specified in 40 CFR 63.10(b)(1), the Permittee must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.</p> <p>The Permittee must keep each record on site, or they must be accessible from on site (for example, through a computer network), for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR 63.10(b)(1). The Permittee can keep the records off site for the remaining 3 years. [40 CFR 63.7560, Minn. R. 7011.7050]</p>
5.9.20	<p>The Permittee must comply with all applicable requirements of 40 CFR pt. 63, subp. A as follows:</p> <ul style="list-style-type: none"><li>40 CFR 63.1;</li><li>40 CFR 63.2;</li><li>40 CFR 63.3;</li><li>40 CFR 63.4;</li><li>40 CFR 63.5;</li><li>40 CFR 63.6(a);</li><li>40 CFR 63.6(b)(1);</li><li>40 CFR 63.6(b)(2);</li><li>40 CFR 63.6(b)(3);</li><li>40 CFR 63.6(b)(4);</li><li>40 CFR 63.6(b)(5);</li><li>40 CFR 63.6(b)(7);</li><li>40 CFR 63.6(c);</li><li>40 CFR 63.6(f)(2);</li><li>40 CFR 63.6(f)(3);</li><li>40 CFR 63.6(g) (except 40 CFR 63.7555(d)(3) specifies the procedure for application and approval of an alternative timeframe with the PM controls requirement in the startup work practice);</li><li>40 CFR 63.6(i);</li><li>40 CFR 63.6(j);</li><li>40 CFR 63.7(a);</li><li>40 CFR 63.7(b);</li><li>40 CFR 63.7(c);</li><li>40 CFR 63.7(d);</li><li>40 CFR 63.7(e)(2)-(e)(9);</li><li>40 CFR 63.7(f);</li><li>40 CFR 63.7(g);</li><li>40 CFR 63.7(h);</li><li>40 CFR 63.8(a);</li><li>40 CFR 63.8(b);</li><li>40 CFR 63.8(c)(1);</li><li>40 CFR 63.8(c)(1)(ii);</li><li>40 CFR 63.8(c)(2)-(c)(9);</li><li>40 CFR 63.8(d)(1);</li><li>40 CFR 63.8(d)(2);</li><li>40 CFR 63.8(d)(3) (except for the last sentence, which refers to a startup, shutdown, and malfunction plan; startup, shutdown, and malfunction plans are not required);</li><li>40 CFR 63.8(e);</li><li>40 CFR 63.8(f);</li><li>40 CFR 63.8(g);</li><li>40 CFR 63.9;</li><li>40 CFR 63.10(a);</li><li>40 CFR 63.10(b)(1);</li></ul>

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	<p>40 CFR 63.10(b)(2)(i);            40 CFR 63.10(b)(2)(iii);            40 CFR 63.10(b)(2)(vi);            40 CFR 63.10(b)(2)(vii)-(xiv);            40 CFR 63.10(c)(1)-(c)(9);            40 CFR 63.10(c)(12)-(c)(13);            40 CFR 63.10(d)(1);            40 CFR 63.10(d)(2);            40 CFR 63.10(d)(4);            40 CFR 63.10(e);            40 CFR 63.10(f);            40 CFR 63.12;            40 CFR 63.13;            40 CFR 63.14;            40 CFR 63.15; and            40 CFR 63.16.</p> <p>A copy of 40 CFR pt. 63, subp. A is included in Appendix B. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR 63.7565, 40 CFR pt. 63, subp. A, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.0050, subp. 1(B), Minn. R. 7011.7050, Minn. R. 7017.1010 &amp; 7017.2025, Minn. R. 7019.0100]</p>
<b>EQUI 40</b>	<b>Ash Conveyor</b>
5.10.1	<p>The Permittee must limit combustion ash from an ash conveying system, or buildings or enclosures of ash conveying systems, including conveyor transfer points, Visible Emissions <math>\leq</math> 5 percent of the observation period (i.e. 9 minutes per three-hour period) (hourly observation period using three 1-hour observation periods), as determined by 40 CFR pt. 60, Appendix A, Method 22, as amended. This limit does not apply to visible emissions discharged inside buildings or enclosures of ash conveying systems. [Minn. R. 7011.1225, subp. 1(B)]</p>
<b>TREA 1</b>	<b>Dry Limestone Injection</b>
5.11.1	<p>The Permittee must maintain the lime feed rate at <math>\geq</math>14.9 percent, 8-hour block average (as determined during the 04/12/2023 hydrogen chloride (HCl) performance test). The Permittee must keep records of the 8-hour block average feed rate at all times EQUI 1 is in operation. The Permittee must use the same or similar reagent as used during the most recent compliant HCl performance test.</p> <p>Notwithstanding the previous sentence, upon the Commissioner's written notification that EQUI 1 has demonstrated compliance under the conditions of a HCl performance test, the Permittee must maintain the lime feed rate determined during the most recent compliant HCl performance test. [Minn. R. 7007.0800, subp. 2(A)]</p>
5.11.2	<p>The Permittee shall vent emissions from EQUI 1 to TREA 1 whenever EQUI 1 operates, and operate and maintain TREA 1 at all times that any emissions are vented to TREA 1. The Permittee shall document periods of non-operation of the control equipment TREA 1 whenever EQUI 1 is operating. [Minn. R. 7007.0800, subp. 2(A)]</p>
5.11.3	<p>Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur:</p> <ul style="list-style-type: none"> <li>- the lime feed rate, averaged over an 8-hour block, is less than the average feed rate as determined during the most recent compliant HCl performance test.</li> <li>- the scrubber or any of its components are found during the inspections to need repair.</li> </ul>

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	<p>Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the Operation and Maintenance (O &amp; M) Plan for the scrubber. The Permittee shall keep a record of the type and date of any corrective action taken for each scrubber. [40 CFR 64.7(d), Minn. R. 7017.0200]</p>
5.11.4	<p>The Permittee shall maintain each piece of control equipment according to the control equipment manufacturer's specifications, and shall:</p> <ul style="list-style-type: none"> <li>A. maintain an inventory of spare parts that are subject to frequent replacement, as required by the manufacturing specification or documented in records under items H and I;</li> <li>B. train staff on the operation and monitoring of control equipment and troubleshooting, and train and require staff to respond to indications of malfunctioning equipment;</li> <li>C. thoroughly inspect all control equipment at least annually, or as required by the manufacturing specification;</li> <li>D. inspect monthly, or as required by the manufacturing specification, components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts;</li> <li>E. inspect quarterly, or as required by the manufacturing specification, components that are not subject to wear including structural components, housings, ducts, and hoods;</li> <li>F. check daily, or as required by the manufacturing specification, monitoring equipment, for example: pressure gauges, chart recorders, temperature indicators, and recorders;</li> <li>G. calibrate (or replace) annually, or as required by the manufacturing specification, all monitoring equipment;</li> <li>H. maintain a record of activities conducted in items A to G consisting of the activity completed, the date the activity was completed, and any corrective action taken; and</li> <li>I. maintain a record of parts replaced, repaired, or modified for the previous five years. [40 CFR 64.3, Minn. R. 7007.0800, subp. 14, Minn. R. 7017.0200]</li> </ul>
5.11.5	<p>If the Permittee replaces TREA 1, the replacement control must comply with all requirements of TREA 1. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable.</p> <p>If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subp. 2(A)]</p>
5.11.6	<p>Documentation of Need for Improved Monitoring: If the Permittee fails to achieve compliance with an emission limitation or standard for which the monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing lime feed rate range, the Permittee shall promptly notify the MPCA and, if necessary, submit a permit amendment application to address the necessary monitoring change. [40 CFR 64.7(e), Minn. R. 7017.0200]</p>
5.11.7	<p>As required by 40 CFR 64.9(a)(2), for the Semi-Annual Deviations Report required by this permit and/or the Notification of Deviations Endangering Human Health and the Environment required by this permit, as applicable, the Permittee shall include the following related to the monitoring identified as required by 40 CFR pt. 64: 1) Summary information on the number, duration, and cause of excursions or exceedances, as applicable, and the corrective action taken; and 2) Summary information on the number, duration, and cause for monitor downtime incidents. [40 CFR 64.9(a)(2), Minn. R. 7017.0200]</p>
5.11.8	<p>The Permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, and other supporting information required to be maintained. The Permittee may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements. [40 CFR 64.9(b), Minn. R. 7017.0200]</p>



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5.11.9	Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording lime feed rate as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored gas scrubber is in operation. [40 CFR 64.7(b), Minn. R. 7017.0200]
<b>TREA 2</b>	<b>Dry Limestone Injection</b>
5.12.1	<p>The Permittee must maintain the lime feed rate as <math>\geq</math> 14.9 percent, 8-hour block average (as determined during the 04/12/2023 hydrogen chloride (HCl) performance test). The Permittee must keep records of the 8-hour block average feed rate at all times EQUI 2 is in operation. The Permittee must use the same or similar reagent as used during the most recent compliant HCl performance test.</p> <p>Notwithstanding the previous sentence, upon the Commissioner's written notification that EQUI 2 has demonstrated compliance under the conditions of a HCl performance test, the Permittee must maintain the lime feed rate determined during the most recent compliant HCl performance test. [Minn. R. 7007.0800, subp. 2(A)]</p>
5.12.2	The Permittee shall vent emissions from EQUI 2 to TREA 2 whenever EQUI 2 operates, and operate and maintain TREA 2 at all times that any emissions are vented to TREA 2. The Permittee shall document periods of non-operation of the control equipment TREA 2 whenever EQUI 2 is operating. [Minn. R. 7007.0800, subp. 2(A)]
5.12.3	<p>Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur:</p> <ul style="list-style-type: none"> <li>- the lime feed rate, averaged over an 8-hour block, is less than the average feed rate as determined during the most recent compliant HCl performance test.</li> <li>- the scrubber or any of its components are found during the inspections to need repair.</li> </ul> <p>Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the Operation and Maintenance (O &amp; M) Plan for the scrubber. The Permittee shall keep a record of the type and date of any corrective action taken for each scrubber. [40 CFR 64.7(d), Minn. R. 7017.0200]</p>
5.12.4	<p>The Permittee shall maintain each piece of control equipment according to the control equipment manufacturer's specifications, and shall:</p> <ul style="list-style-type: none"> <li>A. maintain an inventory of spare parts that are subject to frequent replacement, as required by the manufacturing specification or documented in records under items H and I;</li> <li>B. train staff on the operation and monitoring of control equipment and troubleshooting, and train and require staff to respond to indications of malfunctioning equipment;</li> <li>C. thoroughly inspect all control equipment at least annually, or as required by the manufacturing specification;</li> <li>D. inspect monthly, or as required by the manufacturing specification, components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts;</li> <li>E. inspect quarterly, or as required by the manufacturing specification, components that are not subject to wear including structural components, housings, ducts, and hoods;</li> <li>F. check daily, or as required by the manufacturing specification, monitoring equipment, for example: pressure gauges, chart recorders, temperature indicators, and recorders;</li> <li>G. calibrate (or replace) annually, or as required by the manufacturing specification, all monitoring equipment;</li> <li>H. maintain a record of activities conducted in items A to G consisting of the activity completed, the date the activity was completed, and any corrective action taken; and</li> <li>I. maintain a record of parts replaced, repaired, or modified for the previous five years. [40 CFR 64.3, Minn. R. 7007.0800, subp. 14, Minn. R. 7017.0200]</li> </ul>
5.12.5	If the Permittee replaces TREA 2, the replacement control must comply with all requirements of TREA 2. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit

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	<p>amendment, as applicable.</p> <p>If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subp. 2(A)]</p>
5.12.6	<p>Documentation of Need for Improved Monitoring: If the Permittee fails to achieve compliance with an emission limitation or standard for which the monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing lime feed rate range, the Permittee shall promptly notify the MPCA and, if necessary, submit a permit amendment application to address the necessary monitoring change. [40 CFR 64.7(e), Minn. R. 7017.0200]</p>
5.12.7	<p>As required by 40 CFR 64.9(a)(2), for the Semi-Annual Deviations Report required by this permit and/or the Notification of Deviations Endangering Human Health and the Environment required by this permit, as applicable, the Permittee shall include the following related to the monitoring identified as required by 40 CFR pt. 64: 1) Summary information on the number, duration, and cause of excursions or exceedances, as applicable, and the corrective action taken; and 2) Summary information on the number, duration, and cause for monitor downtime incidents. [40 CFR 64.9(a)(2), Minn. R. 7017.0200]</p>
5.12.8	<p>The Permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, and other supporting information required to be maintained. The Permittee may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements. [40 CFR 64.9(b), Minn. R. 7017.0200]</p>
5.12.9	<p>Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording lime feed rate as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored gas scrubber is in operation. [40 CFR 64.7(b), Minn. R. 7017.0200]</p>
<b>TREA 5</b>	<b>Fabric Filter - High Temperature, i.e., T&gt;250 Degrees F</b>
5.13.1	<p>The Permittee must limit the inlet gas stream Temperature <math>\leq</math> 312 degrees Fahrenheit (as determined during the April 05-06, 2023 polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (PCDD/PCDF) performance test). Notwithstanding the previous sentence, upon the Commissioner's written notification that EQUI 1 has demonstrated compliance under the conditions of a PCDD/PCDF performance test, the Permittee must maintain the lime feed rate determined during the most recent compliant PCDD/PCDF performance test. The inlet gas stream to TREA 5 on EQUI 1 as measured by Minn. R. 7011.1260, subp. 4(A) must have a temperature of no greater than 30 degrees Fahrenheit above the maximum demonstrated temperature of the particulate matter control device (4-hour block average) at the inlet of the particulate matter control device. The maximum demonstrated temperature of the particulate matter control device means the highest 4-hour block arithmetic average flue gas temperature measured at the inlet of the particulate matter control device during 4 consecutive hours in the course of the most recent performance test for dioxins/furans emissions (PCDD/PCDF) that demonstrates compliance except as allowed in following items:</p> <p>A. During the annual PCDD/PCDF performance test and the two weeks preceding the annual PCDD/PCDF performance test, no particulate matter control device temperature limitations are applicable.</p> <p>B. The Permittee must submit written notification to the Commissioner 30 days prior to evaluating system performance, testing new technology or control technologies, diagnostic testing, or related activities for the purpose of improving facility performance or advancing the state-of-the-art for controlling facility emissions to waive the particulate matter control device temperature limits. The</p>

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	<p>notification must include the following information:</p> <p>1) a description of the proposed project, and the outcome the project is designed to evaluate;</p> <p>2) how the project conforms with the activities described in Minn. R. 7011.1265 for which the temperature limit can be waived; and</p> <p>3) the length of time the project will take to complete; the project must be accomplished within 14 days. [Minn. R. 7011.1240, subp. 2]</p>
5.13.2	The Permittee must calibrate, maintain, and operate temperature monitors that continuously read and record the temperatures of the flue gas at the inlet of TREA 5. [Minn. R. 7011.1260, subp. 2]
5.13.3	The Permittee shall vent emissions from EQUI 1 to TREA 5 whenever EQUI 1 operates, and operate and maintain TREA 5 at all times that any emissions are vented to TREA 5. The Permittee shall document periods of non-operation of the control equipment TREA 5 whenever EQUI 1 is operating. [Minn. R. 7007.0800, subp. 2(A)]
5.13.4	<p>If the Permittee replaces TREA 5, the replacement control must meet or exceed the control efficiency requirements of TREA 5 as well as comply with all other requirements of TREA 5. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable.</p> <p>If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subp. 2(A)]</p>
5.13.5	Pressure Drop $\geq 2.0$ and $\leq 15.5$ inches of water, unless 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. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall continuously monitor the pressure drop. If the pressure drop is below or above the limit, this shall be reported as a deviation. This limit does not apply to periods of EQUI 1 startup, shutdown, or malfunction and does not apply during combustion of only natural gas. [Minn. R. 7007.0800, subp. 2(A)]
5.13.6	Opacity $< 5.0$ percent opacity 3-hour average. Opacity in excess of this limit shall be considered an excursion under 40 CFR 64.6(c)(2), for purposes of the PM limit for EQUI 1. This applies for all types of fuel burned in EQUI 1. [40 CFR 64.3, Minn. R. 7017.0200]
5.13.7	The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.13.8	Daily Inspections: The Permittee must read and record the opacity once every 24 hours. [40 CFR 64.3, Minn. R. 7017.0200]
5.13.9	Continuous Monitoring: The Permittee shall continuously, or at a minimum once every 15 minutes, monitor the opacity of the fabric filter exhaust. See COMG 3 for specific COMS operating requirements. [40 CFR 64.3(b)(4)(ii), Minn. R. 7017.0200]
5.13.10	Recordkeeping of Opacity: The Permittee shall record the time and date of each opacity reading, and whether or not the observed opacity was below the limit specified in this permit. Recorded values above the limit specified in this permit are considered Deviations as defined by Minn. R. 7007.0100, subp. 8a. [40 CFR 64.9(b), Minn. R. 7017.0200]
5.13.11	The Permittee must maintain an audible alarm that is triggered whenever the pressure drop is greater than 15.5 inches of water column, unless 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, then the alarm must be triggered by the maximum range provided in the Notice of Compliance. When the alarm is triggered, the Permittee must take corrective actions.

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	[Minn. R. 7007.0800, subp. 2(A)]
5.13.12	<p>Pressure Drop: The Permittee must install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation.</p> <p>The Permittee must read and record the pressure drop across the fabric filter. The Permittee must record the time and date of each pressure drop reading, and whether or not the observed pressure drop was within the range specified in this permit. Recorded values outside the range specified in this permit are considered Deviations as defined by Minn. R. 7007.0100, subp. 8a. [Minn. R. 7007.0800, subp. 2(A)]</p>
5.13.13	The Permittee shall calibrate the pressure gauge at least once every 12 months and shall maintain a written record of any action resulting from the calibration. [Minn. R. 7007.0800, subp. 2(A)]
5.13.14	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [40 CFR 64.3, Minn. R. 7017.0200]
5.13.15	<p>Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur:</p> <ul style="list-style-type: none"> <li>- visible emissions are observed; or</li> <li>- the recorded pressure drop is outside the required operating range; or</li> <li>- the fabric filter or any of its components are found during the inspections to need repair.</li> </ul> <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 &amp; M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [40 CFR 64.7(d), Minn. R. 7017.0200]</p>
5.13.16	Documentation of Need for Improved Monitoring: If the Permittee fails to achieve compliance with an emission limitation or standard for which the monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing pressure drop range, the Permittee shall promptly notify the MPCA and, if necessary, submit a permit amendment application to address the necessary monitoring change. [40 CFR 64.7(e), Minn. R. 7017.0200]
5.13.17	As required by 40 CFR 64.9(a)(2), for the Semi-Annual Deviations Report required by this permit and/or the Notification of Deviations Endangering Human Health and the Environment required by this permit, as applicable, the Permittee shall include the following related to the monitoring identified as required by 40 CFR pt. 64: 1) Summary information on the number, duration, and cause of excursions or exceedances, as applicable, and the corrective action taken; and 2) Summary information on the number, duration, and cause for monitor downtime incidents. [40 CFR 64.9(a)(2), Minn. R. 7017.0200]
5.13.18	The Permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, and other supporting information required to be maintained. The Permittee may maintain records on alternative media or computer files, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements. [40 CFR 64.9(b), Minn. R. 7017.0200]
<b>TREA 6</b>	<b>Fabric Filter - High Temperature, i.e., T&gt;250 Degrees F</b>
5.14.1	The Permittee must limit the inlet gas stream Temperature <= 305 degrees Fahrenheit (as determined during the April 21-22, 2022 polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (PCDD/PCDF) performance test). Notwithstanding the previous sentence, upon the Commissioner's written notification that EQUI 2 has demonstrated compliance under the conditions of a PCDD/PCDF

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	<p>performance test, the Permittee must maintain the lime feed rate determined during the most recent compliant PCDD/PCDF performance test. The inlet gas stream to TREA 6 on EQUI 2 as measured by Minn. R. 7011.1260, subp. 4(A) must have a temperature of no greater than 30 degrees Fahrenheit above the maximum demonstrated temperature of the particulate matter control device (4-hour block average) at the inlet of the particulate matter control device. The maximum demonstrated temperature of the particulate matter control device means the highest 4-hour block arithmetic average flue gas temperature measured at the inlet of the particulate matter control device during 4 consecutive hours in the course of the most recent performance test for dioxins/furans emissions (PCDD/PCDF) that demonstrates compliance except as allowed in following items:</p> <p>A. During the annual PCDD/PCDF performance test and the two weeks preceding the annual PCDD/PCDF performance test, no particulate matter control device temperature limitations are applicable.</p> <p>B. The Permittee must submit written notification to the Commissioner 30 days prior to evaluating system performance, testing new technology or control technologies, diagnostic testing, or related activities for the purpose of improving facility performance or advancing the state-of-the-art for controlling facility emissions to waive the particulate matter control device temperature limits. The notification must include the following information:</p> <ol style="list-style-type: none"> <li>1) a description of the proposed project, and the outcome the project is designed to evaluate;</li> <li>2) how the project conforms with the activities described in Minn. R. 7011.1265 for which the temperature limit can be waived; and</li> <li>3) the length of time the project will take to complete; the project must be accomplished within 14 days. [Minn. R. 7011.1240, subp. 2]</li> </ol>
5.14.2	The Permittee must calibrate, maintain, and operate temperature monitors that continuously read and record the temperatures of the flue gas at the inlet of TREA 6. [Minn. R. 7011.1260, subp. 2]
5.14.3	The Permittee shall vent emissions from EQUI 2 to TREA 6 whenever EQUI 2 operates, and operate and maintain TREA 6 at all times that any emissions are vented to TREA 6. The Permittee shall document periods of non-operation of the control equipment TREA 6 whenever EQUI 2 is operating. [Minn. R. 7007.0800, subp. 2(A)]
5.14.4	<p>If the Permittee replaces TREA 6, the replacement control must meet or exceed the control efficiency requirements of TREA 6 as well as comply with all other requirements of TREA 6. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable.</p> <p>If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subp. 2(A)]</p>
5.14.5	Pressure Drop $\geq 2.0$ and $\leq 15.5$ inches of water, unless 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. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall continuously monitor the pressure drop. If the pressure drop is below or above the limit, this shall be reported as a deviation. This limit does not apply to periods of EQUI 2 startup, shutdown, or malfunction and does not apply during combustion of only natural gas. [Minn. R. 7007.0800, subp. 2(A)]
5.14.6	Opacity < 5.0 percent opacity 3-hour average. Opacity in excess of this limit shall be considered an excursion under 40 CFR 64.6(c)(2), for purposes of the PM limit for EQUI 2. This applies for all types of fuel burned in EQUI 2. [40 CFR 64.3, Minn. R. 7017.0200]

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5.14.7	The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.14.8	Daily Inspections: The Permittee must read and record the opacity once every 24 hours. [40 CFR 64.3, Minn. R. 7017.0200]
5.14.9	Continuous Monitoring: The Permittee shall continuously, or at a minimum once every 15 minutes, monitor the opacity of the fabric filter exhaust. See COMG 3 for specific COMS operating requirements. [40 CFR 64.3(b)(4)(ii), Minn. R. 7017.0200]
5.14.10	Recordkeeping of Opacity: The Permittee shall record the time and date of each opacity reading, and whether or not the observed opacity was below the specified limit in this permit. Recorded values above the limit specified in this permit are considered Deviations as defined by Minn. R. 7007.0100, subp. 8a. [40 CFR 64.9(b), Minn. R. 7017.0200]
5.14.11	The Permittee must maintain an audible alarm that is triggered whenever the pressure drop is greater than 15.5 inches of water column, unless 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, then the alarm must be triggered by the maximum range provided in the Notice of Compliance. When the alarm is triggered, the Permittee must take corrective actions. [40 CFR 64.3, Minn. R. 7017.0200]
5.14.12	<p>Pressure Drop: The Permittee must install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation.</p> <p>The Permittee must read and record the pressure drop across the fabric filter. The Permittee must record the time and date of each pressure drop reading, and whether or not the observed pressure drop was within the range specified in this permit. Recorded values outside the range specified in this permit are considered Deviations as defined by Minn. R. 7007.0100, subp. 8a. [Minn. R. 7007.0800, subp. 2(A)]</p>
5.14.13	The Permittee shall calibrate the pressure gauge at least once every 12 months and shall maintain a written record of any action resulting from the calibration. [Minn. R. 7007.0800, subp. 2(A)]
5.14.14	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [40 CFR 64.3, Minn. R. 7017.0200]
5.14.15	<p>Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur:</p> <ul style="list-style-type: none"> <li>- visible emissions are observed; or</li> <li>- the recorded pressure drop is outside the required operating range; or</li> <li>- the fabric filter or any of its components are found during the inspections to need repair.</li> </ul> <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 &amp; M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [40 CFR 64.7(d), Minn. R. 7017.0200]</p>
5.14.16	Documentation of Need for Improved Monitoring: If the Permittee fails to achieve compliance with an emission limitation or standard for which the monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing pressure drop range, the Permittee shall promptly notify the MPCA and, if necessary, submit a permit amendment application to address the necessary monitoring change. [40 CFR 64.7(e), Minn. R. 7017.0200]

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5.14.17	As required by 40 CFR 64.9(a)(2), for the Semi-Annual Deviations Report required by this permit and/or the Notification of Deviations Endangering Human Health and the Environment required by this permit, as applicable, the Permittee shall include the following related to the monitoring identified as required by 40 CFR pt. 64: 1) Summary information on the number, duration, and cause of excursions or exceedances, as applicable, and the corrective action taken; and 2) Summary information on the number, duration, and cause for monitor downtime incidents. [40 CFR 64.9(a)(2), Minn. R. 7017.0200]
5.14.18	The Permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, and other supporting information required to be maintained. The Permittee may maintain records on alternative media or computer files, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements. [40 CFR 64.9(b), Minn. R. 7017.0200]
<b>TREA 7</b>	<b>Fabric Filter - Low Temperature, i.e., T&lt;180 Degrees F</b>
5.15.1	The control equipment is listed control equipment under Minn. R. 7011.0060 to 7011.0080. The Permittee shall vent emissions from EQUI 36 to TREA 7 whenever EQUI 36 operates, and operate and maintain TREA 7 at all times that any emissions are vented to TREA 7. The Permittee shall document periods of non-operation of the control equipment TREA 7 whenever EQUI 36 is operating. [Minn. R. 7011.0075, subp. 1]
5.15.2	<p>If the Permittee replaces TREA 7, the replacement control must meet or exceed the control efficiency requirements of TREA 7 as well as comply with all other requirements of TREA 7. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable.</p> <p>If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subp. 2(A)]</p>
5.15.3	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter $\geq 99$ percent control efficiency. [Minn. R. 7011.0070, subp. 1(A)]
5.15.4	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron $\geq 93$ percent control efficiency. [Minn. R. 7011.0070, subp. 1(A)]
5.15.5	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron $\geq 93$ percent control efficiency. [Minn. R. 7007.0800, subp. 2(A)]
5.15.6	<p>Visible Emissions: The Permittee shall check the fabric filter stack STRU 12 for any visible emissions once each day of operation during daylight hours. If there are visible emissions, the emissions shall be considered uncontrolled until there are no longer visible emissions. The period of time for which there are visible emissions shall be reported as a deviation.</p> <p>During inclement weather, the Permittee shall read and record the pressure drop across the fabric filter, once each day of operation. [Minn. R. 7011.0080]</p>
5.15.7	Recordkeeping of Visible Emissions. The Permittee shall record the time and date of each visible emission inspection, and whether or not any visible emissions were observed. [Minn. R. 7011.0080]
5.15.8	<p>Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur:</p> <ul style="list-style-type: none"> <li>- visible emissions are observed;</li> <li>- the recorded pressure drop is outside the required operating range; or</li> <li>- the fabric filter or any of its components are found during the inspections to need repair.</li> </ul> <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 &amp; M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp.</p>

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5.15.9	Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation. [Minn. R. 7011.0075, subp. 3]
5.15.10	<p>The Permittee shall maintain each piece of control equipment according to the control equipment manufacturer's specifications, and shall:</p> <p>A. maintain an inventory of spare parts that are subject to frequent replacement, as required by the manufacturing specification or documented in records under items H and I;</p> <p>B. train staff on the operation and monitoring of control equipment and troubleshooting, and train and require staff to respond to indications of malfunctioning equipment;</p> <p>C. thoroughly inspect all control equipment at least annually, or as required by the manufacturing specification;</p> <p>D. inspect monthly, or as required by the manufacturing specification, components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts;</p> <p>E. inspect quarterly, or as required by the manufacturing specification, components that are not subject to wear including structural components, housings, ducts, and hoods;</p> <p>F. check daily, or as required by the manufacturing specification, monitoring equipment, for example: pressure gauges, chart recorders, temperature indicators, and recorders;</p> <p>G. calibrate (or replace) annually, or as required by the manufacturing specification, all monitoring equipment;</p> <p>H. maintain a record of activities conducted in items A to G consisting of the activity completed, the date the activity was completed, and any corrective action taken; and</p> <p>I. maintain a record of parts replaced, repaired, or modified for the previous five years. [Minn. R. 7011.0075, subp. 2]</p>
<b>TREA 8</b>	<b>Fabric Filter - Low Temperature, i.e., T&lt;180 Degrees F</b>
5.16.1	The control equipment is listed control equipment under Minn. R. 7011.0060 to 7011.0080. The Permittee shall vent emissions from EQUI 37 to TREA 8 whenever EQUI 37 operates, and operate and maintain TREA 8 at all times that any emissions are vented to TREA 8. The Permittee shall document periods of non-operation of the control equipment TREA 8 whenever EQUI 37 is operating. [Minn. R. 7011.0075, subp. 1]
5.16.2	<p>If the Permittee replaces TREA 8, the replacement control must meet or exceed the control efficiency requirements of TREA 8 as well as comply with all other requirements of TREA 8. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable.</p> <p>If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subp. 2(A)]</p>
5.16.3	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter >= 99 percent control efficiency. [Minn. R. 7011.0070, subp. 1(A)]
5.16.4	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron >= 93 percent control efficiency. [Minn. R. 7011.0070, subp. 1(A)]
5.16.5	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron >= 93 percent control efficiency. [Minn. R. 7007.0800, subp. 2(A)]
5.16.6	<p>Visible Emissions: The Permittee shall check the fabric filter stack STRU 13 for any visible emissions once each day of operation during daylight hours. If there are visible emissions, the emissions shall be considered uncontrolled until there are no longer visible emissions. The period of time for which there are visible emissions shall be reported as a deviation.</p> <p>During inclement weather, the Permittee shall read and record the pressure drop across the fabric</p>



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	filter, once each day of operation. [Minn. R. 7011.0080]
5.16.7	Recordkeeping of Visible Emissions. The Permittee shall record the time and date of each visible emission inspection and whether or not any visible emissions were observed. [Minn. R. 7011.0080]
5.16.8	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - visible emissions are observed; - the recorded pressure drop is outside the required operating range; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range, eliminate visible emissions, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
5.16.9	Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation. [Minn. R. 7011.0075, subp. 3]
5.16.10	The Permittee shall maintain each piece of control equipment according to the control equipment manufacturer's specifications, and shall: A. maintain an inventory of spare parts that are subject to frequent replacement, as required by the manufacturing specification or documented in records under items H and I; B. train staff on the operation and monitoring of control equipment and troubleshooting, and train and require staff to respond to indications of malfunctioning equipment; C. thoroughly inspect all control equipment at least annually, or as required by the manufacturing specification; D. inspect monthly, or as required by the manufacturing specification, components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts; E. inspect quarterly, or as required by the manufacturing specification, components that are not subject to wear including structural components, housings, ducts, and hoods; F. check daily, or as required by the manufacturing specification, monitoring equipment, for example: pressure gauges, chart recorders, temperature indicators, and recorders; G. calibrate (or replace) annually, or as required by the manufacturing specification, all monitoring equipment; H. maintain a record of activities conducted in items A to G consisting of the activity completed, the date the activity was completed, and any corrective action taken; and I. maintain a record of parts replaced, repaired, or modified for the previous five years. [Minn. R. 7011.0075, subp. 2]

**6. Submittal/action requirements**

This section lists most of the submittals required by this permit. Please note that some submittal requirements may appear in the Limits and Other Requirements section, or, if applicable, within a Compliance Schedule section.

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<b>TFAC 2</b>	<b>Xcel Energy - Red Wing Generating Plant</b>
6.1.1	The Permittee shall take a sample : Due quarterly; the Permittee shall collect ash samples. Sample collection must commence within 7 days of January 15, April 15, July 15, and October 15, unless otherwise approved by the commissioner. Quarterly samples and an annual composite sample

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	formed from equal portions of the quarterly samples must be analyzed according to Minn. R 7035.2910, subp. 5. Quarterly samples must be analyzed within appropriate sample holding times, or 45 days after the sample is collected, whichever is less. The Permittee must analyze the annual composite sample according to Minn. R. 7035.2910, subp. 4, item A, Tables 1 and 2. [Minn. R. 7000.7000, variance (10/18/1996), Minn. R. 7007.0800, subp. 5, Minn. R. 7007.0801, subp. 2(D), Minn. R. 7035.2910, subp. 3]
6.1.2	Waste Composition Study: due before the end of each calendar 60 months starting 12/31/2023. The Permittee must submit the waste composition study 45 days after completion of the study. The Waste Composition Study and Sample Analysis Report shall be conducted on each waste stream from which RDF is produced as described in Minn. R. 7007.0501, subp. 2(A), which includes Red Wing City of Red Wing Resource & Recovery Facility and Ramsey/Washington County Energy Recovery Facility. [Minn. R. 7007.0501, subp. 2(A), Minn. R. 7011.1270, subp. A(6)]
6.1.3	<p>The Permittee shall submit a report : Due annually by March 15 of each year for ash testing. The ash testing report must contain the information listed in Minn. R. 7035.2910, subp. 10(A) - (F) (listed below).</p> <p>A. Results of quarterly and annual analyses of ash as required by Minn. R. 7035. Total composition results must be reported on a dry weight basis.</p> <p>B. Discussion of the data, including identification of trends observed by comparing the most recent year's results with those of previous years. In particular, the Permittee must assess whether the waste combustor is in compliance with the goals of Minnesota Statutes, section 115A.97, subdivision 1, clause (1).</p> <p>C. Data quality assurance assessment, including the following:</p> <ul style="list-style-type: none"> <li>(1) precision and accuracy of each method used;</li> <li>(2) representativeness of the samples;</li> <li>(3) potential effect of any field or laboratory contamination on the sampling results; and</li> <li>(4) qualification or rejection of data based on the results of quality control samples.</li> </ul> <p>D. Information summarizing operation of the waste combustor during the ash sampling periods, and data regarding ash sample processing recorded according to Minn. R. 7035.2910, subp. 9. Operating information must include an estimate of the quantity and type of wastes other than mixed municipal solid waste which were combusted at the facility during the ash sampling period. If leachate was added to the waste during the sampling period, the quantity of leachate added and source of the leachate must be noted.</p> <p>E. Certification by the Permittee that samples analyzed to fulfill the requirements of this part were collected according to the plan required by Minn. R. 7035.2910, subp. 6, and that no actions were taken during the sample collection period to intentionally affect the results of ash sample analysis so that the results would not be representative of ash typically generated by the waste combustor. Such actions may include, for example, altering the type of waste combusted during the sampling period.</p> <p>F. Identification of any changes in test methods or parameters made in accordance with Minn. R. 7035.2910, subp. 4, items D and E. [Minn. R. 7035.2910, subp. 10]</p>
6.1.4	The Permittee must submit a semiannual deviations report : Due semiannually, by the 30th of January and July. The first semiannual report submitted by the Permittee must 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. Submit this on form DRF-2 (Deviation Reporting Form). If no deviations have occurred, submit the signed report certifying that there were no deviations. [Minn. R. 7007.0800, subp. 6(B)(2)]
6.1.5	The Permittee must submit a compliance certification : Due annually, by the 31st of January (for the

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	previous calendar year). Submit this on form CR-04 (Annual Compliance Certification Report). This report covers all deviations experienced during the calendar year. If no deviations have occurred, submit the signed report certifying that there were no deviations. [Minn. R. 7007.0800, subp. 6(D)]
6.1.6	The Permittee shall submit an application for permit reissuance : Due 180 calendar days before Permit Expiration Date. [Minn. R. 7007.0400, subp. 2]
6.1.7	The Permittee shall submit excess emission/downtime report : Due by 30 days after the end of each calendar quarter following permit issuance. Submit this on form DRF-1 (Excess Emissions Reporting) as amended. The EER shall indicate all periods of monitor bypass and exceedances of the limit including those allowed by an applicable standard, i.e. during startup, shutdown, and malfunctions, as well as a summary of audit results and frequencies. If no excess emissions, downtime or bypasses occurred during the quarter, submit a signed report supplying the necessary monitor data needed to verify this. [Minn. R. 7017.1110, subp. 1-2]
<b>COMG 2</b>	<b>Continuous Emission Monitors</b>
6.2.1	<p>Certification Test Plan due 30 days before Certification Test.            Certification Test Pretest Meeting due seven days before Certification Test.            Certification Test Report due 45 days after Certification Test.</p> <p>Notify the commissioner prior to making any planned change or if unforeseen, within two working days, when a monitor must be recertified as outlined in Minn. R. 7017.1050, subp. 2.</p> <p>Test plans and reports must be submitted in a format specified by the commissioner. [40 CFR 60.7(a)(5), Minn. R. 7017.1060, subp. 1-3, Minn. R. 7017.1080]</p>
6.2.2	CEMS Certification/Recertification Test: due 90 days after the first excess emissions report required for the CEMS or any change which invalidates the monitor's certification status as outlined in Minn. R. 7017.1050, subp. 2. [40 CFR 60.13(b), Minn. R. 7017.1010, subp. 1(A)]
<b>COMG 3</b>	<b>Continuous Opacity Monitors</b>
6.3.1	COMS Certification/Recertification Test: due 90 days after the first excess emissions report required for the COMS or any change which invalidates the monitor's certification status as outlined in Minn. R. 7017.1050, subp. 2. [Minn. R. 7017.1050, subp. 1]
<b>EQUI 1</b>	<b>Boiler 1</b>
6.4.1	<p>Particulate Matter: The Permittee must conduct a performance test due annually. The Permittee must conduct a performance test due before August 31, 2024. Subsequently, the Permittee must conduct a performance test no later than 12 months after April 3, 2024, and must conduct each following annual stack test no later than 12 months after the previous stack test.</p> <p>The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval.</p> <p>An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 5 test run for particulate matter. Particulate matter emissions, expressed in gr/dscf, must be corrected to seven percent oxygen by using the formula in Minn. R. 7011.1265, subp. 2(A).</p> <p>The sum of filterable and organic condensable particulate matter is the concentration of particulate matter as described in part 7017.2060, subpart 3, item B.</p> <p>For each sample run employing Method 5 as provided in Appendix A-3 of Code of Federal Regulations, title 40, part 60, as amended, the emission rate must be determined using:</p> <p>(a) oxygen or carbon dioxide measurements;            (b) dry basis F factor; and</p>

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	<p>(c) dry basis emission rate calculation procedures in Code of Federal Regulations, title 40, part 60, Appendix A-7, Method 19, as amended.</p> <p>Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a Notice of Compliance letter.</p> <p>Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [Minn. R. 7011.1265, subp. 2(A), Minn. R. 7011.1265, subp. 5, Minn. R. 7011.1270, A, Minn. R. 7017.2020, subp. 1]</p>
6.4.2	<p>Opacity: The Permittee shall conduct a performance test due annually to measure opacity. The Permittee must conduct a performance test due before August 31, 2024. Subsequently, the Permittee must conduct a performance test no later than 12 months after April 3, 2024, and must conduct each following annual stack test no later than 12 months after the previous stack test.</p> <p>40 CFR pt. 60, Appendix A, Method 9, as amended, must be used to determine compliance with opacity limits.</p> <p>The first test is due by the date specified above and all subsequent tests shall be completed every 60 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 9, or other method approved by MPCA in the performance test plan approval.</p> <p>Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a Notice of Compliance letter.</p> <p>Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [Minn. R. 7011.1265, subp. 1, Minn. R. 7011.1265, subp. 2(B), Minn. R. 7011.1270(A), Minn. R. 7017.2020, subp. 1]</p>
6.4.3	<p>Mercury: The Permittee must conduct a performance test due annually to measure mercury emissions. The Permittee must conduct a performance test due before August 31, 2024. Subsequently, the Permittee must conduct a performance test no later than 12 months after April 3, 2024, and must conduct each following annual stack test no later than 12 months after the previous stack test.</p> <p>If a test shows that an emission limit for mercury from EQUI 1 combusting RDF is exceeded, testing must be conducted every three months thereafter until compliance with the standard is demonstrated.</p> <p>40 CFR pt. 60, Appendix A, Method 29, as amended, must be used for measuring mercury emissions. To determine the mercury concentration, the arithmetic average of three or more samples at the outlet of the air pollution control device must be used. The minimum sample volume is 1.7 dscm. The maximum sample run time is two hours. An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 29 test run for mercury.</p> <p>To determine the percent reduction of mercury, concurrent sampling for mercury at the inlet and outlet of the air pollution control system must be performed at each occurrence of mercury emissions performance testing. [Minn. R. 7011.1265, subp. 1, Minn. R. 7011.1265, subp. 3(D), Minn. R. 7011.1265, subp. 5, Minn. R. 7011.1270(A), Minn. R. 7017.2020, subp. 1]</p>
6.4.4	<p>Muni Waste Combust Organics: The Permittee must conduct a performance test due annually to</p>

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	<p>measure Muni Waste Combust Organics (dioxins/furans or PCDD/PCDF) emissions. The Permittee must conduct a performance test no later than 12 months after April 3, 2024, and must conduct each following annual stack test no later than 12 months after the previous stack test.</p> <p>40 CFR pt. 60, Appendix A, Method 23, as amended, must be used to determine compliance with the PCDD/PCDF emission limits. The minimum sample time is four hours per test run. An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 23 test run for PCDD/PCDF. The average of the PCDD/PCDF test runs is used to determine compliance.</p> <p>The maximum demonstrated capacity of EQUI 1 must be determined during each subsequent performance test during which compliance with the PCDD/PCDF emission limit in Minn. R. 7011.1225 is achieved.</p> <p>The Permittee must determine and record the four-hour arithmetic average gas stream temperature as measured at the inlet to TREA 5 during each subsequent performance test for PCDD/PCDFs demonstrating compliance with the PCDD/PCDF emission limit in Minn. R. 7011.1225.</p> <p>If all PCDD/PCDF performance tests for all units for a two-year period indicate that PCDD/PCDF emissions are less than or equal to 15 ng/dscm corrected to seven percent oxygen from each unit, then the Permittee may choose to test one unit for PCDD/PCDF once annually, but not more than 12 months following the previous performance test. Thereafter, the Permittee may continue to test a different unit for PCDD/PCDF each year, in sequence (e.g. unit 1, unit 2, etc.). If any annual performance test demonstrates a PCDD/PCDF concentration greater than 15 ng/dscm corrected to seven percent oxygen performance tests thereafter shall be conducted annually on all units until all annual performance tests for all units for a two-year period indicate a PCDD/PCDF emission concentration less than or equal to 15 ng/dscm.</p> <p>The Permittee will specify what the PCDD/PCDF performance testing schedule is each time a pretest notification is given under the conditions of Minn. R. 7017.2030. [Minn. R. 7011.1265, subp. 1, Minn. R. 7011.1265, subp. 3(B), Minn. R. 7011.1265, subp. 5, Minn. R. 7011.1265, subp. 7, Minn. R. 7011.1265, subp. 8, Minn. R. 7011.1270(A), Minn. R. 7017.2020, subp. 1]</p>
6.4.5	<p>Cadmium: The Permittee must conduct a performance test due annually to measure cadmium emissions. The Permittee must conduct a performance test due before August 31, 2024. Subsequently, the Permittee must conduct a performance test no later than 12 months after April 3, 2024, and must conduct each following annual stack test no later than 12 months after the previous stack test.</p> <p>40 CFR pt. 60, Appendix A, Method 29, as amended, must be used for measuring cadmium emissions. The minimum sample volume is 1.7 dscm. An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 29 test run. The average of the cadmium emission concentrations from three test runs or more must be used to determine compliance. [Minn. R. 7011.1265, subp. 1, Minn. R. 7011.1265, subp. 3(C), Minn. R. 7011.1265, subp. 5, Minn. R. 7011.1270(A), Minn. R. 7017.2020, subp. 1]</p>
6.4.6	<p>Lead: The Permittee must conduct a performance test due annually to measure lead emissions. The Permittee must conduct a performance test due before August 31, 2024. Subsequently, the Permittee must conduct a performance test no later than 12 months after April 3, 2024, and must conduct each following annual stack test no later than 12 months after the previous stack test.</p> <p>40 CFR pt. 60, Appendix A, Method 29, as amended, must be used for measuring lead emissions. The minimum sample volume is 1.7 dscm. An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 29 test run. The average of the lead emission concentrations from three test runs or more must be used to determine compliance. [Minn. R. 7011.1265, subp. 1, Minn.</p>

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6.4.7	<p>R. 7011.1265, subp. 3(C), Minn. R. 7011.1265, subp. 5, Minn. R. 7011.1270(A), Minn. R. 7017.2020, subp. 1]</p> <hr/> <p>Hydrogen Chloride: The Permittee must conduct a performance test due annually to measure hydrogen chloride (HCl) emissions. The Permittee must conduct a performance test due before August 31, 2024. Subsequently, the Permittee must conduct a performance test no later than 12 months after April 3, 2024, and must conduct each following annual stack test no later than 12 months after the previous stack test.</p> <p>The percentage reduction in the potential hydrogen chloride emissions is computed using the formula in Minn. R. 7011.1265, subp. 3(A).</p> <p>40 CFR pt. 60, Appendix A, Method 26 or 26A, or 40 CFR pt. 63, Appendix A, Method 320, as amended, must be used for determining the hydrogen chloride emission rate. The minimum sampling time is one hour. An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 26 test run for hydrogen chloride. The average of the hydrogen chloride emission concentration or percent reduction is used to determine compliance.</p> <p>To determine the percent reduction of HCl, concurrent sampling for HCl at the inlet and outlet of the air pollution control system must be performed at each occurrence of HCl emissions performance testing. [Minn. R. 7011.1265, subp. 1, Minn. R. 7011.1265, subp. 3(A), Minn. R. 7011.1265, subp. 5, Minn. R. 7011.1270(A), Minn. R. 7017.2020, subp. 1]</p>
<b>EQUI 2</b>	<b>Boiler 2</b>
6.5.1	<p>Particulate Matter: The Permittee must conduct a performance test due annually. The Permittee must conduct a performance test due before August 31, 2024. Subsequently, the Permittee must conduct a performance test no later than 12 months after April 3, 2024, and must conduct each following annual stack test no later than 12 months after the previous stack test.</p> <p>The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval.</p> <p>An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 5 test run for particulate matter. Particulate matter emissions, expressed in gr/dscf, must be corrected to seven percent oxygen by using the formula in Minn. R. 7011.1265, subp. 2(A).</p> <p>The sum of filterable and organic condensable particulate matter is the concentration of particulate matter as described in part 7017.2060, subpart 3, item B.</p> <p>For each sample run employing Method 5 as provided in Appendix A-3 of Code of Federal Regulations, title 40, part 60, as amended, the emission rate must be determined using:</p> <ul style="list-style-type: none"> <li>(a) oxygen or carbon dioxide measurements;</li> <li>(b) dry basis F factor; and</li> <li>(c) dry basis emission rate calculation procedures in Code of Federal Regulations, title 40, part 60, Appendix A-7, Method 19, as amended.</li> </ul> <p>Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a Notice of Compliance letter.</p> <p>Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [Minn. R. 7011.1265, subp. 2(A), Minn. R. 7011.1265, subp. 5, Minn. R. 7011.1270(A), Minn. R. 7017.2020, subp. 1]</p>

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6.5.2	<p>Opacity: The Permittee shall conduct a performance test due annually to measure opacity. The Permittee must conduct a performance test due before August 31, 2024. Subsequently, the Permittee must conduct a performance test no later than 12 months after April 3, 2024, and must conduct each following annual stack test no later than 12 months after the previous stack test.</p> <p>40 CFR pt. 60, Appendix A, Method 9, as amended, must be used to determine compliance with opacity limits.</p> <p>The first test is due by the date specified above and all subsequent tests shall be completed every 60 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 9, or other method approved by MPCA in the performance test plan approval.</p> <p>Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a Notice of Compliance letter.</p> <p>Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [Minn. R. 7011.1265, subp. 1, Minn. R. 7011.1265, subp. 2(B), Minn. R. 7011.1270(A), Minn. R. 7017.2020, subp. 1]</p>
6.5.3	<p>Mercury: The Permittee must conduct a performance test due annually to measure mercury emissions. The Permittee must conduct a performance test due before August 31, 2024. Subsequently, the Permittee must conduct a performance test no later than 12 months after April 3, 2024, and must conduct each following annual stack test no later than 12 months after the previous stack test.</p> <p>If a test shows that an emission limit for mercury from EQUI 2 combusting RDF is exceeded, testing must be conducted every three months thereafter until compliance with the standard is demonstrated.</p> <p>40 CFR pt. 60, Appendix A, Method 29, as amended, must be used for measuring mercury emissions. To determine the mercury concentration, the arithmetic average of three or more samples at the outlet of the air pollution control device must be used. The minimum sample volume is 1.7 dscm. The maximum sample run time is two hours. An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 29 test run for mercury.</p> <p>To determine the percent reduction of mercury, concurrent sampling for mercury at the inlet and outlet of the air pollution control system must be performed at each occurrence of mercury emissions performance testing. [Minn. R. 7011.1265, subp. 1, Minn. R. 7011.1265, subp. 3(D), Minn. R. 7011.1265, subp. 5, Minn. R. 7011.1270(A), Minn. R. 7017.2020, subp. 1]</p>
6.5.4	<p>Muni Waste Combust Organics: The Permittee must conduct a performance test due annually to measure Muni Waste Combust Organics (dioxins/furans or PCDD/PCDF) emissions. The Permittee must conduct a performance test due before August 31, 2024. Subsequently, the Permittee must conduct a performance test no later than 12 months after April 19, 2024, and must conduct each following annual stack test no later than 12 months after the previous stack test.</p> <p>40 CFR pt. 60, Appendix A, Method 23, as amended, must be used to determine compliance with the PCDD/PCDF emission limits. The minimum sample time is four hours per test run. An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 23 test run for PCDD/PCDF. The average of the PCDD/PCDF test runs is used to determine compliance.</p>

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	<p>The maximum demonstrated capacity of EQUI 2 must be determined during each subsequent performance test during which compliance with the PCDD/PCDF emission limit in Minn. R. 7011.1225 is achieved.</p> <p>The Permittee must determine and record the four-hour arithmetic average gas stream temperature as measured at the inlet to TREA 6 during each subsequent performance test for PCDD/PCDFs demonstrating compliance with the PCDD/PCDF emission limit in Minn. R. 7011.1225.</p> <p>If all PCDD/PCDF performance tests for all units for a two-year period indicate that PCDD/PCDF emissions are less than or equal to 15 ng/dscm corrected to seven percent oxygen from each unit, then the Permittee may choose to test one unit for PCDD/PCDF once annually, but not more than 12 months following the previous performance test. Thereafter, the Permittee may continue to test a different unit for PCDD/PCDF each year, in sequence (e.g. unit 1, unit 2, etc.). If any annual performance test demonstrates a PCDD/PCDF concentration greater than 15 ng/dscm corrected to seven percent oxygen performance tests thereafter shall be conducted annually on all units until all annual performance tests for all units for a two-year period indicate a PCDD/PCDF emission concentration less than or equal to 15 ng/dscm.</p> <p>The Permittee will specify what the PCDD/PCDF performance testing schedule is each time a pretest notification is given under the conditions of Minn. R. 7017.2030. [Minn. R. 7011.1265, subp. 1, Minn. R. 7011.1265, subp. 3(B), Minn. R. 7011.1265, subp. 5, Minn. R. 7011.1265, subp. 7, Minn. R. 7011.1265, subp. 8, Minn. R. 7011.1270(A), Minn. R. 7017.2020, subp. 1]</p>
6.5.5	<p>Cadmium: The Permittee must conduct a performance test due annually to measure cadmium emissions. The Permittee must conduct a performance test due before August 31, 2024. Subsequently, the Permittee must conduct a performance test no later than 12 months after April 3, 2024, and must conduct each following annual stack test no later than 12 months after the previous stack test.</p> <p>40 CFR pt. 60, Appendix A, Method 29, as amended, must be used for measuring cadmium emissions. The minimum sample volume is 1.7 dscm. An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 29 test run. The average of the cadmium emission concentrations from three test runs or more must be used to determine compliance. [Minn. R. 7011.1265, subp. 1, Minn. R. 7011.1265, subp. 3(C), Minn. R. 7011.1265, subp. 5, Minn. R. 7011.1270(A), Minn. R. 7017.2020, subp. 1]</p>
6.5.6	<p>Lead: The Permittee must conduct a performance test due annually to measure lead emissions. The Permittee must conduct a performance test due before August 31, 2024. Subsequently, the Permittee must conduct a performance test no later than 12 months after April 3, 2024, and must conduct each following annual stack test no later than 12 months after the previous stack test.</p> <p>40 CFR pt. 60, Appendix A, Method 29, as amended, must be used for measuring lead emissions. The minimum sample volume is 1.7 dscm. An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 29 test run. The average of the lead emission concentrations from three test runs or more must be used to determine compliance. [Minn. R. 7011.1265, subp. 1, Minn. R. 7011.1265, subp. 3(C), Minn. R. 7011.1265, subp. 5, Minn. R. 7011.1270(A), Minn. R. 7017.2020, subp. 1]</p>
6.5.7	<p>Hydrogen Chloride: The Permittee must conduct a performance test due annually to measure hydrogen chloride (HCl) emissions. The Permittee must conduct a performance test due before August 31, 2024. Subsequently, the Permittee must conduct a performance test no later than 12 months after April 3, 2024, and must conduct each following annual stack test no later than 12 months after the previous stack test.</p> <p>The percentage reduction in the potential hydrogen chloride emissions is computed using the formula</p>



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	<p>in Minn. R. 7011.1265, subp. 3(A).</p> <p>40 CFR pt. 60, Appendix A, Method 26 or 26A, or 40 CFR pt. 63, Appendix A, Method 320, as amended, must be used for determining the hydrogen chloride emission rate. The minimum sampling time is one hour. An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 26 test run for hydrogen chloride. The average of the hydrogen chloride emission concentration or percent reduction is used to determine compliance.</p> <p>To determine the percent reduction of HCl, concurrent sampling for HCl at the inlet and outlet of the air pollution control system must be performed at each occurrence of HCl emissions performance testing. [Minn. R. 7011.1265, subp. 1, Minn. R. 7011.1265, subp. 3(A), Minn. R. 7011.1265, subp. 5, Minn. R. 7011.1270(A), Minn. R. 7017.2020, subp. 1]</p>
<b>EQUI 21</b>	<b>SO2 (EQUI 1 scrubber inlet)</b>
6.6.1	Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter in which a RATA was conducted. [Minn. R. 7017.1180, subp. 3]
6.6.2	Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar quarter in which a CGA was conducted. [Minn. R. 7017.1180, subp. 1]
6.6.3	The Permittee must conduct a cylinder gas audit: Due by the end of each three of four calendar quarters but no more than three quarters in succession. A CGA is not required during any calendar quarter in which a RATA was performed. [40 CFR pt. 60, Appendix F, 5.1.2, Minn. R. 7017.1010, subp. 1(C)]
6.6.4	The Permittee must conduct a relative accuracy test audit: Due one of each four calendar quarters. [40 CFR pt. 60, Appendix F, 5.1.1, Minn. R. 7017.1010, subp. 1(C)]
<b>EQUI 22</b>	<b>O2 (EQUI 1 scrubber inlet)</b>
6.7.1	Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter in which a RATA was conducted. [Minn. R. 7017.1180, subp. 3]
6.7.2	Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar quarter in which a CGA was conducted. [Minn. R. 7017.1180, subp. 1]
6.7.3	The Permittee must conduct a cylinder gas audit: Due by the end of each three of four calendar quarters but no more than three quarters in succession. A CGA is not required during any calendar quarter in which a RATA was performed. [40 CFR pt. 60, Appendix F, 5.1.2, Minn. R. 7017.1010, subp. 1(C)]
6.7.4	The Permittee must conduct a relative accuracy test audit: Due one of each four calendar quarters. [40 CFR pt. 60, Appendix F, 5.1.1, Minn. R. 7017.1010, subp. 1(C)]
<b>EQUI 27</b>	<b>SO2 (EQUI 2 scrubber inlet)</b>
6.8.1	Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter in which a RATA was conducted. [Minn. R. 7017.1180, subp. 3]
6.8.2	Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar quarter in which a CGA was conducted. [Minn. R. 7017.1180, subp. 1]
6.8.3	The Permittee must conduct a cylinder gas audit: Due by the end of each three of four calendar quarters but no more than three quarters in succession. A CGA is not required during any calendar quarter in which a RATA was performed. [40 CFR pt. 60, Appendix F, 5.1.2, Minn. R. 7017.1010, subp. 1(C)]
6.8.4	The Permittee must conduct a relative accuracy test audit: Due one of each four calendar quarters. [40 CFR pt. 60, Appendix F, 5.1.1, Minn. R. 7017.1010, subp. 1(C)]
<b>EQUI 28</b>	<b>O2 (EQUI 2 scrubber inlet)</b>
6.9.1	Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter in which a RATA was conducted. [Minn. R. 7017.1180, subp. 3]

<b>Requirement number</b>	<b>Requirement and citation</b>
6.9.2	Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar quarter in which a CGA was conducted. [Minn. R. 7017.1180, subp. 1]
6.9.3	The Permittee must conduct a cylinder gas audit: Due by the end of each three of four calendar quarters but no more than three quarters in succession. A CGA is not required during any calendar quarter in which a RATA was performed. [40 CFR pt. 60, Appendix F, 5.1.2, Minn. R. 7017.1010, subp. 1(C)]
6.9.4	The Permittee must conduct a relative accuracy test audit: Due one of each four calendar quarters. [40 CFR pt. 60, Appendix F, 5.1.1, Minn. R. 7017.1010, subp. 1(C)]
<b>EQUI 29</b>	<b>Opacity</b>
6.10.1	The Permittee must conduct quarterly COMS performance audits: Due once per QA operating quarter (calendar quarter in which the unit operates at least 168 hours) after COMS certification test. Quarterly performance audits will include: optical alignment, calibration error, and zero compensation according to Procedure 3 of 40 CFR Pt. 60, Appendix F, section 10.0(2).  Sources that achieve quality assured data for four consecutive quarters may reduce their auditing frequency to semi-annual. If a performance audit is failed, the source must resume quarterly testing for that audit requirement until it again demonstrates successful performance over four consecutive quarters. [40 CFR pt. 60, Appendix F, Minn. R. 7017.1010, subp. 1(C)]
6.10.2	The Permittee must perform annual zero alignment as described in Procedure 3, section 10.3 of 40 CFR Pt. 60, Appendix F. [40 CFR pt. 60, Appendix F, Minn. R. 7017.1010, subp. 1(C)]
<b>EQUI 41</b>	<b>CO (EQUI 1 stack)</b>
6.11.1	Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter in which a RATA was conducted. [Minn. R. 7017.1180, subp. 3]
6.11.2	Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar quarter in which a CGA was conducted. [Minn. R. 7017.1180, subp. 1]
6.11.3	The Permittee must conduct a cylinder gas audit: Due by the end of each three of four calendar quarters but no more than three quarters in succession. A CGA is not required during any calendar quarter in which a RATA was performed. [40 CFR pt. 60, Appendix F, 5.1.2, Minn. R. 7017.1010, subp. 1(C)]
6.11.4	The Permittee must conduct a relative accuracy test audit: Due one of each four calendar quarters. [40 CFR pt. 60, Appendix F, 5.1.1, Minn. R. 7017.1010, subp. 1(C)]
<b>EQUI 42</b>	<b>NOx (EQUI 1 stack)</b>
6.12.1	Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter in which a RATA was conducted. [Minn. R. 7017.1180, subp. 3]
6.12.2	Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar quarter in which a CGA was conducted. [Minn. R. 7017.1180, subp. 1]
6.12.3	The Permittee must conduct a cylinder gas audit: Due by the end of each three of four calendar quarters but no more than three quarters in succession. A CGA is not required during any calendar quarter in which a RATA was performed. [40 CFR pt. 60, Appendix F, 5.1.2, Minn. R. 7017.1010, subp. 1(C)]
6.12.4	The Permittee must conduct a relative accuracy test audit: Due one of each four calendar quarters. [40 CFR pt. 60, Appendix F, 5.1.1, Minn. R. 7017.1010, subp. 1(C)]
<b>EQUI 43</b>	<b>SO2 (EQUI 1 stack)</b>
6.13.1	Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter in which a RATA was conducted. [Minn. R. 7017.1180, subp. 3]
6.13.2	Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar quarter in which a CGA was conducted. [Minn. R. 7017.1180, subp. 1]

Requirement number	Requirement and citation
6.13.3	The Permittee must conduct a cylinder gas audit: Due by the end of each three of four calendar quarters but no more than three quarters in succession. A CGA is not required during any calendar quarter in which a RATA was performed. [40 CFR pt. 60, Appendix F, 5.1.2, Minn. R. 7017.1010, subp. 1(C)]
6.13.4	The Permittee must conduct a relative accuracy test audit: Due one of each four calendar quarters. [40 CFR pt. 60, Appendix F, 5.1.1, Minn. R. 7017.1010, subp. 1(C)]
<b>EQUI 44</b>	<b>O2 (EQUI 1 stack)</b>
6.14.1	Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter in which a RATA was conducted. [Minn. R. 7017.1180, subp. 3]
6.14.2	Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar quarter in which a CGA was conducted. [Minn. R. 7017.1180, subp. 1]
6.14.3	The Permittee must conduct a cylinder gas audit: Due by the end of each three of four calendar quarters but no more than three quarters in succession. A CGA is not required during any calendar quarter in which a RATA was performed. [40 CFR pt. 60, Appendix F, 5.1.2, Minn. R. 7017.1010, subp. 1(C)]
6.14.4	The Permittee must conduct a relative accuracy test audit: Due one of each four calendar quarters. [40 CFR pt. 60, Appendix F, 5.1.1, Minn. R. 7017.1010, subp. 1(C)]
<b>EQUI 45</b>	<b>CO (EQU 2 stack)</b>
6.15.1	Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter in which a RATA was conducted. [Minn. R. 7017.1180, subp. 3]
6.15.2	Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar quarter in which a CGA was conducted. [Minn. R. 7017.1180, subp. 1]
6.15.3	The Permittee must conduct a cylinder gas audit: Due by the end of each three of four calendar quarters but no more than three quarters in succession. A CGA is not required during any calendar quarter in which a RATA was performed. [40 CFR pt. 60, Appendix F, 5.1.2, Minn. R. 7017.1010, subp. 1(C)]
6.15.4	The Permittee must conduct a relative accuracy test audit: Due one of each four calendar quarters. [40 CFR pt. 60, Appendix F, 5.1.1, Minn. R. 7017.1010, subp. 1(C)]
<b>EQUI 46</b>	<b>NOx (EQUI 2 stack)</b>
6.16.1	Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter in which a RATA was conducted. [Minn. R. 7017.1180, subp. 3]
6.16.2	Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar quarter in which a CGA was conducted. [Minn. R. 7017.1180, subp. 1]
6.16.3	The Permittee must conduct a cylinder gas audit: Due by the end of each three of four calendar quarters but no more than three quarters in succession. A CGA is not required during any calendar quarter in which a RATA was performed. [40 CFR pt. 60, Appendix F, 5.1.2, Minn. R. 7017.1010, subp. 1(C)]
6.16.4	The Permittee must conduct a relative accuracy test audit: Due one of each four calendar quarters. [40 CFR pt. 60, Appendix F, 5.1.1, Minn. R. 7017.1010, subp. 1(C)]
<b>EQUI 47</b>	<b>SO2 (EQUI 2 stack)</b>
6.17.1	Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter in which a RATA was conducted. [Minn. R. 7017.1180, subp. 3]
6.17.2	Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar quarter in which a CGA was conducted. [Minn. R. 7017.1180, subp. 1]
6.17.3	The Permittee must conduct a cylinder gas audit: Due by the end of each three of four calendar quarters but no more than three quarters in succession. A CGA is not required during any calendar quarter in which a RATA was performed. [40 CFR pt. 60, Appendix F, 5.1.2, Minn. R. 7017.1010, subp.

Requirement number	Requirement and citation
	1(C)]
6.17.4	The Permittee must conduct a relative accuracy test audit: Due one of each four calendar quarters. [40 CFR pt. 60, Appendix F, 5.1.1, Minn. R. 7017.1010, subp. 1(C)]
<b>EQUI 48</b>	<b>O2 (EQUI 2 stack)</b>
6.18.1	Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter in which a RATA was conducted. [Minn. R. 7017.1180, subp. 3]
6.18.2	Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar quarter in which a CGA was conducted. [Minn. R. 7017.1180, subp. 1]
6.18.3	The Permittee must conduct a cylinder gas audit: Due by the end of each three of four calendar quarters but no more than three quarters in succession. A CGA is not required during any calendar quarter in which a RATA was performed. [40 CFR pt. 60, Appendix F, 5.1.2, Minn. R. 7017.1010, subp. 1(C)]
6.18.4	The Permittee must conduct a relative accuracy test audit: Due one of each four calendar quarters. [40 CFR pt. 60, Appendix F, 5.1.1, Minn. R. 7017.1010, subp. 1(C)]
<b>EQUI 49</b>	<b>Opacity (EQUI 1 stack)</b>
6.19.1	<p>The Permittee must conduct quarterly COMS performance audits: Due once per QA operating quarter (calendar quarter in which the unit operates at least 168 hours) after COMS certification test. Quarterly performance audits will include: optical alignment, calibration error, and zero compensation according to Procedure 3 of 40 CFR Pt. 60, Appendix F, section 10.0(2).</p> <p>Sources that achieve quality assured data for four consecutive quarters may reduce their auditing frequency to semi-annual. If a performance audit is failed, the source must resume quarterly testing for that audit requirement until it again demonstrates successful performance over four consecutive quarters. [40 CFR pt. 60, Appendix F, Minn. R. 7017.1010, subp. 1(C)]</p>
6.19.2	The Permittee must perform annual zero alignment as described in Procedure 3, section 10.3 of 40 CFR Pt. 60, Appendix F. [40 CFR pt. 60, Appendix F, Minn. R. 7017.1010, subp. 1(C)]

7. Appendices

**Appendix A. Insignificant activities and general applicable requirements**

The table below lists the insignificant activities that are currently at the Facility and their associated general applicable requirements.

<b>Minn. R.</b>	<b>Rule description of the activity</b>	<b>General applicable requirement</b>
Minn. R. 7007.1300, subp. 3(E)	Brazing, soldering, torch-cutting, or welding equipment <i>Welding equipment</i>	PM, variable depending on airflow Opacity <= 20% (Minn. R. 7011.0715)
Minn. R. 7007.1300, subp. 3(F)	Individual units with potential emissions less than 2000 lb/year of certain pollutants <i>RDF conveyor and unloading,</i> <i>Portable space heaters</i>	PM, variable depending on airflow Opacity <= 20% (Minn. R. 7011.0715), PM <= 0.40 lb/MMBtu Opacity <= 20% with exceptions (Minn. R. 7011.0515)
Minn. R. 7007.1300, subp. 3(G)	Fugitive dust emissions from unpaved roads and parking lots	Requirement to take reasonable measures to prevent PM from becoming airborne (Minn. R. 7011.0150)

## Appendix B. 40 CFR Part 63, Subpart A—General Provisions

### § 63.1 Applicability.

(a) *General.*

(1) Terms used throughout this part are defined in § 63.2 or in the Clean Air Act (Act) as amended in 1990, except that individual subparts of this part may include specific definitions in addition to or that supersede definitions in § 63.2.

(2) This part contains national emission standards for hazardous air pollutants (NESHAP) established pursuant to section 112 of the Act as amended November 15, 1990. These standards regulate specific categories of stationary sources that emit (or have the potential to emit) one or more hazardous air pollutants listed in this part pursuant to section 112(b) of the Act. This section explains the applicability of such standards to sources affected by them. The standards in this part are independent of NESHAP contained in 40 CFR part 61. The NESHAP in part 61 promulgated by signature of the Administrator before November 15, 1990 (i.e., the date of enactment of the Clean Air Act Amendments of 1990) remain in effect until they are amended, if appropriate, and added to this part.

(3) No emission standard or other requirement established under this part shall be interpreted, construed, or applied to diminish or replace the requirements of a more stringent emission limitation or other applicable requirement established by the Administrator pursuant to other authority of the Act (section 111, part C or D or any other authority of this Act), or a standard issued under State authority. The Administrator may specify in a specific standard under this part that facilities subject to other provisions under the Act need only comply with the provisions of that standard.

(4) (i) Each relevant standard in this part 63 must identify explicitly whether each provision in this subpart A is or is not included in such relevant standard.

(ii) If a relevant part 63 standard incorporates the requirements of 40 CFR part 60, part 61 or other part 63 standards, the relevant part 63 standard must identify explicitly the applicability of each corresponding part 60, part 61, or other part 63 subpart A (General) provision.

(iii) The General Provisions in this subpart A do not apply to regulations developed pursuant to section 112(r) of the amended Act, unless otherwise specified in those regulations.

(5) [Reserved]

(6) To obtain the most current list of categories of sources to be regulated under section 112 of the Act, or to obtain the most recent regulation promulgation schedule established pursuant to section 112(e) of the Act, contact the Office of the Director, Emission Standards Division, Office of Air Quality Planning and Standards, U.S. EPA (MD-13), Research Triangle Park, North Carolina 27711.

(7)-(9) [Reserved]

(10) For the purposes of this part, time periods specified in days shall be measured in calendar days, even if the word “calendar” is absent, unless otherwise specified in an applicable requirement.

(11) For the purposes of this part, if an explicit postmark deadline is not specified in an applicable requirement for the submittal of a notification, application, test plan, report, or other written communication to the Administrator, the owner or operator shall postmark the submittal on or before the number of days specified in the applicable requirement. For example, if a notification must be

submitted 15 days before a particular event is scheduled to take place, the notification shall be postmarked on or before 15 days preceding the event; likewise, if a notification must be submitted 15 days after a particular event takes place, the notification shall be postmarked on or before 15 days following the end of the event. The use of reliable non-Government mail carriers that provide indications of verifiable delivery of information required to be submitted to the Administrator, similar to the postmark provided by the U.S. Postal Service, or alternative means of delivery agreed to by the permitting authority, is acceptable.

(12) Notwithstanding time periods or postmark deadlines specified in this part for the submittal of information to the Administrator by an owner or operator, or the review of such information by the Administrator, such time periods or deadlines may be changed by mutual agreement between the owner or operator and the Administrator. Procedures governing the implementation of this provision are specified in § 63.9(i).

*(b) Initial applicability determination for this part.*

(1) The provisions of this part apply to the owner or operator of any stationary source that -

- (i) Emits or has the potential to emit any hazardous air pollutant listed in or pursuant to section 112(b) of the Act; and
- (ii) Is subject to any standard, limitation, prohibition, or other federally enforceable requirement established pursuant to this part.

(2) [Reserved]

(3) An owner or operator of a stationary source who is in the relevant source category and who determines that the source is not subject to a relevant standard or other requirement established under this part must keep a record as specified in § 63.10(b)(3).

*(c) Applicability of this part after a relevant standard has been set under this part.*

(1) If a relevant standard has been established under this part, the owner or operator of an affected source must comply with the provisions of that standard and of this subpart as provided in paragraph (a)(4) of this section.

(2) Except as provided in § 63.10(b)(3), if a relevant standard has been established under this part, the owner or operator of an affected source may be required to obtain a title V permit from a permitting authority in the State in which the source is located. Emission standards promulgated in this part for area sources pursuant to section 112(c)(3) of the Act will specify whether -

- (i) States will have the option to exclude area sources affected by that standard from the requirement to obtain a title V permit (i.e., the standard will exempt the category of area sources altogether from the permitting requirement);
- (ii) States will have the option to defer permitting of area sources in that category until the Administrator takes rulemaking action to determine applicability of the permitting requirements; or
- (iii) If a standard fails to specify what the permitting requirements will be for area sources affected by such a standard, then area sources that are subject to the standard will be subject to the requirement to obtain a title V permit without any deferral.

(3)-(4) [Reserved]

(5) If an area source that otherwise would be subject to an emission standard or other requirement established under this part if it were a major source subsequently increases its emissions of hazardous air pollutants (or its potential to emit hazardous air pollutants) such that the source is a major source that is subject to the emission standard or other requirement, such source also shall be subject to the notification requirements of this subpart.

(6) A major source may become an area source at any time upon reducing its emissions of and potential to emit hazardous air pollutants, as defined in this subpart, to below the major source thresholds established in § 63.2, subject to the provisions in paragraphs (c)(6)(i) and (ii) of this section.

(i) A major source reclassifying to area source status is subject to the applicability of standards, compliance dates and notification requirements specified in (c)(6)(i)(A) of this section. An area source that previously was a major source and becomes a major source again is subject to the applicability of standards, compliance dates, and notification requirements specified in (c)(6)(i)(B) of this section:

(A) A major source reclassifying to area source status under this part remains subject to any applicable major source requirements established under this part until the reclassification becomes effective. After the reclassification becomes effective, the source is subject to any applicable area source requirements established under this part immediately, provided the compliance date for the area source requirements has passed. The owner or operator of a major source that becomes an area source subject to newly applicable area source requirements under this part must comply with the initial notification requirements pursuant to § 63.9(b). The owner or operator of a major source that becomes an area source must also provide to the Administrator any change in the information already provided under § 63.9(b) per § 63.9(j).

(B) An area source that previously was a major source under this part and that becomes a major source again is subject to the applicable major source requirements established under this part immediately upon becoming a major source again, provided the compliance date for the major source requirements has passed, notwithstanding any provision within the applicable subparts. The owner or operator of an area source that becomes a major source again must comply with the initial notification pursuant to § 63.9(b). The owner or operator must also provide to the Administrator any change in the information already provided under § 63.9(b) per § 63.9(j).

(ii) Becoming an area source does not absolve a source subject to an enforcement action or investigation for major source violations or infractions from the consequences of any actions occurring when the source was major. Becoming a major source does not absolve a source subject to an enforcement action or investigation for area source violations or infractions from the consequences of any actions occurring when the source was an area source.

(d) [Reserved]

(e) If the Administrator promulgates an emission standard under section 112(d) or (h) of the Act that is applicable to a source subject to an emission limitation by permit established under section 112(j) of the Act, and the requirements under the section 112(j) emission limitation are substantially as effective as the promulgated emission standard, the owner or operator may request the permitting authority to revise



the source's title V permit to reflect that the emission limitation in the permit satisfies the requirements of the promulgated emission standard. The process by which the permitting authority determines whether the section 112(j) emission limitation is substantially as effective as the promulgated emission standard must include, consistent with part 70 or 71 of this chapter, the opportunity for full public, EPA, and affected State review (including the opportunity for EPA's objection) prior to the permit revision being finalized. A negative determination by the permitting authority constitutes final action for purposes of review and appeal under the applicable title V operating permit program.

### § 63.2 Definitions.

The terms used in this part are defined in the Act or in this section as follows:

*Act* means the Clean Air Act (42 U.S.C. 7401 *et seq.*, as amended by Pub. L. 101-549, 104 Stat. 2399).

*Actual emissions* is defined in subpart D of this part for the purpose of granting a compliance extension for an early reduction of hazardous air pollutants.

*Administrator* means the Administrator of the United States Environmental Protection Agency or his or her authorized representative (e.g., a State that has been delegated the authority to implement the provisions of this part).

*Affected source*, for the purposes of this part, means the collection of equipment, activities, or both within a single contiguous area and under common control that is included in a section 112(c) source category or subcategory for which a section 112(d) standard or other relevant standard is established pursuant to section 112 of the Act. Each relevant standard will define the "affected source," as defined in this paragraph unless a different definition is warranted based on a published justification as to why this definition would result in significant administrative, practical, or implementation problems and why the different definition would resolve those problems. The term "affected source," as used in this part, is separate and distinct from any other use of that term in EPA regulations such as those implementing title IV of the Act. Affected source may be defined differently for part 63 than affected facility and stationary source in parts 60 and 61, respectively. This definition of "affected source," and the procedures for adopting an alternative definition of "affected source," shall apply to each section 112(d) standard for which the initial proposed rule is signed by the Administrator after June 30, 2002.

*Alternative emission limitation* means conditions established pursuant to sections 112(i)(5) or 112(i)(6) of the Act by the Administrator or by a State with an approved permit program.

*Alternative emission standard* means an alternative means of emission limitation that, after notice and opportunity for public comment, has been demonstrated by an owner or operator to the Administrator's satisfaction to achieve a reduction in emissions of any air pollutant at least equivalent to the reduction in emissions of such pollutant achieved under a relevant design, equipment, work practice, or operational emission standard, or combination thereof, established under this part pursuant to section 112(h) of the Act.

*Alternative test method* means any method of sampling and analyzing for an air pollutant that has been demonstrated to the Administrator's satisfaction, using Method 301 in appendix A of this part, to produce results adequate for the Administrator's determination that it may be used in place of a test method specified in this part.

*Approved permit program* means a State permit program approved by the Administrator as meeting the requirements of part 70 of this chapter or a Federal permit program established in this chapter pursuant to title V of the Act (42 U.S.C. 7661).

*Area source* means any stationary source of hazardous air pollutants that is not a major source as defined in this part.

*Commenced* means, with respect to construction or reconstruction of an affected source, that an owner or operator has undertaken a continuous program of construction or reconstruction or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or reconstruction.

*Compliance date* means the date by which an affected source is required to be in compliance with a relevant standard, limitation, prohibition, or any federally enforceable requirement established by the Administrator (or a State with an approved permit program) pursuant to section 112 of the Act.

*Compliance schedule* means:

- (1) In the case of an affected source that is in compliance with all applicable requirements established under this part, a statement that the source will continue to comply with such requirements; or
- (2) In the case of an affected source that is required to comply with applicable requirements by a future date, a statement that the source will meet such requirements on a timely basis and, if required by an applicable requirement, a detailed schedule of the dates by which each step toward compliance will be reached; or
- (3) In the case of an affected source not in compliance with all applicable requirements established under this part, a schedule of remedial measures, including an enforceable sequence of actions or operations with milestones and a schedule for the submission of certified progress reports, where applicable, leading to compliance with a relevant standard, limitation, prohibition, or any federally enforceable requirement established pursuant to section 112 of the Act for which the affected source is not in compliance. This compliance schedule shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the source is subject. Any such schedule of compliance shall be supplemental to, and shall not sanction noncompliance with, the applicable requirements on which it is based.

*Construction* means the on-site fabrication, erection, or installation of an affected source. Construction does not include the removal of all equipment comprising an affected source from an existing location and reinstallation of such equipment at a new location. The owner or operator of an existing affected source that is relocated may elect not to reinstall minor ancillary equipment including, but not limited to, piping, ductwork, and valves. However, removal and reinstallation of an affected source will be construed as reconstruction if it satisfies the criteria for reconstruction as defined in this section. The costs of replacing minor ancillary equipment must be considered in determining whether the existing affected source is reconstructed.

*Continuous emission monitoring system (CEMS)* means the total equipment that may be required to meet the data acquisition and availability requirements of this part, used to sample, condition (if applicable), analyze, and provide a record of emissions.

*Continuous monitoring system (CMS)* is a comprehensive term that may include, but is not limited to, continuous emission monitoring systems, continuous opacity monitoring systems, continuous parameter monitoring systems, or other manual or automatic monitoring that is used for demonstrating compliance with an applicable regulation on a continuous basis as defined by the regulation.

*Continuous opacity monitoring system (COMS)* means a continuous monitoring system that measures the opacity of emissions.

*Continuous parameter monitoring system* means the total equipment that may be required to meet the data acquisition and availability requirements of this part, used to sample, condition (if applicable), analyze, and provide a record of process or control system parameters.

*Effective date* means:

- (1) With regard to an emission standard established under this part, the date of promulgation in the Federal Register of such standard; or
- (2) With regard to an alternative emission limitation or equivalent emission limitation determined by the Administrator (or a State with an approved permit program), the date that the alternative emission limitation or equivalent emission limitation becomes effective according to the provisions of this part.

*Emission standard* means a national standard, limitation, prohibition, or other regulation promulgated in a subpart of this part pursuant to sections 112(d), 112(h), or 112(f) of the Act.

*Emissions averaging* is a way to comply with the emission limitations specified in a relevant standard, whereby an affected source, if allowed under a subpart of this part, may create emission credits by reducing emissions from specific points to a level below that required by the relevant standard, and those credits are used to offset emissions from points that are not controlled to the level required by the relevant standard.

*EPA* means the United States Environmental Protection Agency.

*Equivalent emission limitation* means any maximum achievable control technology emission limitation or requirements which are applicable to a major source of hazardous air pollutants and are adopted by the Administrator (or a State with an approved permit program) on a case-by-case basis, pursuant to section 112(g) or (j) of the Act.

*Excess emissions and continuous monitoring system performance report* is a report that must be submitted periodically by an affected source in order to provide data on its compliance with relevant emission limits, operating parameters, and the performance of its continuous parameter monitoring systems.

*Existing source* means any affected source that is not a new source.

*Federally enforceable* means all limitations and conditions that are enforceable by the Administrator and citizens under the Act or that are enforceable under other statutes administered by the Administrator. Examples of federally enforceable limitations and conditions include, but are not limited to:

- (1) Emission standards, alternative emission standards, alternative emission limitations, and equivalent emission limitations established pursuant to section 112 of the Act as amended in 1990;
- (2) New source performance standards established pursuant to section 111 of the Act, and emission standards established pursuant to section 112 of the Act before it was amended in 1990;
- (3) All terms and conditions in a title V permit, including any provisions that limit a source's potential to emit, unless expressly designated as not federally enforceable;
- (4) Limitations and conditions that are part of an approved State Implementation Plan (SIP) or a Federal Implementation Plan (FIP);
- (5) Limitations and conditions that are part of a Federal construction permit issued under 40 CFR 52.21 or any construction permit issued under regulations approved by the EPA in accordance with 40 CFR part 51;

(6) Limitations and conditions that are part of an operating permit where the permit and the permitting program pursuant to which it was issued meet all of the following criteria:

- (i) The operating permit program has been submitted to and approved by EPA into a State implementation plan (SIP) under section 110 of the CAA;
- (ii) The SIP imposes a legal obligation that operating permit holders adhere to the terms and limitations of such permits and provides that permits which do not conform to the operating permit program requirements and the requirements of EPA's underlying regulations may be deemed not "federally enforceable" by EPA;
- (iii) The operating permit program requires that all emission limitations, controls, and other requirements imposed by such permits will be at least as stringent as any other applicable limitations and requirements contained in the SIP or enforceable under the SIP, and that the program may not issue permits that waive, or make less stringent, any limitations or requirements contained in or issued pursuant to the SIP, or that are otherwise "federally enforceable";
- (iv) The limitations, controls, and requirements in the permit in question are permanent, quantifiable, and otherwise enforceable as a practical matter; and
- (v) The permit in question was issued only after adequate and timely notice and opportunity for comment for EPA and the public.

(7) Limitations and conditions in a State rule or program that has been approved by the EPA under subpart E of this part for the purposes of implementing and enforcing section 112; and

(8) Individual consent agreements that the EPA has legal authority to create.

*Fixed capital cost* means the capital needed to provide all the depreciable components of an existing source.

*Force majeure* means, for purposes of § 63.7, an event that will be or has been caused by circumstances beyond the control of the affected facility, its contractors, or any entity controlled by the affected facility that prevents the owner or operator from complying with the regulatory requirement to conduct performance tests within the specified timeframe despite the affected facility's best efforts to fulfill the obligation. Examples of such events are acts of nature, acts of war or terrorism, or equipment failure or safety hazard beyond the control of the affected facility.

*Fugitive emissions* means those emissions from a stationary source that could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening. Under section 112 of the Act, all fugitive emissions are to be considered in determining whether a stationary source is a major source.

*Hazardous air pollutant* means any air pollutant listed in or pursuant to section 112(b) of the Act.

*Issuance* of a part 70 permit will occur, if the State is the permitting authority, in accordance with the requirements of part 70 of this chapter and the applicable, approved State permit program. When the EPA is the permitting authority, issuance of a title V permit occurs immediately after the EPA takes final action on the final permit.

*Major source* means any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants, unless the Administrator establishes a lesser quantity, or in the case of radionuclides, different criteria from those specified in this sentence.

*Malfunction* means any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

*Monitoring* means the collection and use of measurement data or other information to control the operation of a process or pollution control device or to verify a work practice standard relative to assuring compliance with applicable requirements. Monitoring is composed of four elements:

- (1) Indicator(s) of performance - the parameter or parameters you measure or observe for demonstrating proper operation of the pollution control measures or compliance with the applicable emissions limitation or standard. Indicators of performance may include direct or predicted emissions measurements (including opacity), operational parametric values that correspond to process or control device (and capture system) efficiencies or emissions rates, and recorded findings of inspection of work practice activities, materials tracking, or design characteristics. Indicators may be expressed as a single maximum or minimum value, a function of process variables (for example, within a range of pressure drops), a particular operational or work practice status (for example, a damper position, completion of a waste recovery task, materials tracking), or an interdependency between two or among more than two variables.
- (2) Measurement techniques - the means by which you gather and record information of or about the indicators of performance. The components of the measurement technique include the detector type, location and installation specifications, inspection procedures, and quality assurance and quality control measures. Examples of measurement techniques include continuous emission monitoring systems, continuous opacity monitoring systems, continuous parametric monitoring systems, and manual inspections that include making records of process conditions or work practices.
- (3) Monitoring frequency - the number of times you obtain and record monitoring data over a specified time interval. Examples of monitoring frequencies include at least four points equally spaced for each hour for continuous emissions or parametric monitoring systems, at least every 10 seconds for continuous opacity monitoring systems, and at least once per operating day (or week, month, etc.) for work practice or design inspections.
- (4) Averaging time - the period over which you average and use data to verify proper operation of the pollution control approach or compliance with the emissions limitation or standard. Examples of averaging time include a 3-hour average in units of the emissions limitation, a 30-day rolling average emissions value, a daily average of a control device operational parametric range, and an instantaneous alarm.

*New affected source* means the collection of equipment, activities, or both within a single contiguous area and under common control that is included in a section 112(c) source category or subcategory that is subject to a section 112(d) or other relevant standard for new sources. This definition of "new affected source," and the criteria to be utilized in implementing it, shall apply to each section 112(d) standard for which the initial proposed rule is signed by the Administrator after June 30, 2002. Each relevant standard will define the term "new affected source," which will be the same as the "affected source" unless a different collection is warranted based on consideration of factors including:

- (1) Emission reduction impacts of controlling individual sources versus groups of sources;
- (2) Cost effectiveness of controlling individual equipment;
- (3) Flexibility to accommodate common control strategies;

- (4) Cost/benefits of emissions averaging;
- (5) Incentives for pollution prevention;
- (6) Feasibility and cost of controlling processes that share common equipment (e.g., product recovery devices);
- (7) Feasibility and cost of monitoring; and
- (8) Other relevant factors.

*New source* means any affected source the construction or reconstruction of which is commenced after the Administrator first proposes a relevant emission standard under this part establishing an emission standard applicable to such source.

*One-hour period*, unless otherwise defined in an applicable subpart, means any 60-minute period commencing on the hour.

*Opacity* means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background. For continuous opacity monitoring systems, opacity means the fraction of incident light that is attenuated by an optical medium.

*Owner or operator* means any person who owns, leases, operates, controls, or supervises a stationary source.

*Performance audit* means a procedure to analyze blind samples, the content of which is known by the Administrator, simultaneously with the analysis of performance test samples in order to provide a measure of test data quality.

*Performance evaluation* means the conduct of relative accuracy testing, calibration error testing, and other measurements used in validating the continuous monitoring system data.

*Performance test* means the collection of data resulting from the execution of a test method (usually three emission test runs) used to demonstrate compliance with a relevant emission standard as specified in the performance test section of the relevant standard.

*Permit modification* means a change to a title V permit as defined in regulations codified in this chapter to implement title V of the Act (42 U.S.C. 7661).

*Permit program* means a comprehensive State operating permit system established pursuant to title V of the Act (42 U.S.C. 7661) and regulations codified in part 70 of this chapter and applicable State regulations, or a comprehensive Federal operating permit system established pursuant to title V of the Act and regulations codified in this chapter.

*Permit revision* means any permit modification or administrative permit amendment to a title V permit as defined in regulations codified in this chapter to implement title V of the Act (42 U.S.C. 7661).

*Permitting authority* means:

- (1) The State air pollution control agency, local agency, other State agency, or other agency authorized by the Administrator to carry out a permit program under part 70 of this chapter; or
- (2) The Administrator, in the case of EPA-implemented permit programs under title V of the Act (42 U.S.C. 7661).

*Pollution Prevention* means *source reduction* as defined under the Pollution Prevention Act (42 U.S.C. 13101-13109). The definition is as follows:

- (1) *Source reduction* is any practice that:

- (i) Reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, treatment, or disposal; and
  - (ii) Reduces the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants.
- (2) The term *source reduction* includes equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, substitution of raw materials, and improvements in housekeeping, maintenance, training, or inventory control.
- (3) The term *source reduction* does not include any practice that alters the physical, chemical, or biological characteristics or the volume of a hazardous substance, pollutant, or contaminant through a process or activity which itself is not integral to and necessary for the production of a product or the providing of a service.

*Potential to emit* means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is enforceable.

*Reconstruction*, unless otherwise defined in a relevant standard, means the replacement of components of an affected or a previously nonaffected source to such an extent that:

- (1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new source; and
- (2) It is technologically and economically feasible for the reconstructed source to meet the relevant standard(s) established by the Administrator (or a State) pursuant to section 112 of the Act. Upon reconstruction, an affected source, or a stationary source that becomes an affected source, is subject to relevant standards for new sources, including compliance dates, irrespective of any change in emissions of hazardous air pollutants from that source.

*Regulation promulgation schedule* means the schedule for the promulgation of emission standards under this part, established by the Administrator pursuant to section 112(e) of the Act and published in the Federal Register.

*Relevant standard* means:

- (1) An emission standard;
- (2) An alternative emission standard;
- (3) An alternative emission limitation; or
- (4) An equivalent emission limitation established pursuant to section 112 of the Act that applies to the collection of equipment, activities, or both regulated by such standard or limitation. A relevant standard may include or consist of a design, equipment, work practice, or operational requirement, or other measure, process, method, system, or technique (including prohibition of emissions) that the Administrator (or a State) establishes for new or existing sources to which such standard or limitation applies. Every relevant standard established pursuant to section 112 of the Act includes subpart A of this part, as provided by § 63.1(a)(4), and all applicable appendices of this part or of other parts of this chapter that are referenced in that standard.

*Responsible official* means one of the following:

- (1) For a corporation: A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities and either:
  - (i) The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or
  - (ii) The delegation of authority to such representative is approved in advance by the Administrator.
- (2) For a partnership or sole proprietorship: a general partner or the proprietor, respectively.
- (3) For a municipality, State, Federal, or other public agency: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of the EPA).
- (4) For affected sources (as defined in this part) applying for or subject to a title V permit: "responsible official" shall have the same meaning as defined in part 70 or Federal title V regulations in this chapter (42 U.S.C. 7661), whichever is applicable.

*Run* means one of a series of emission or other measurements needed to determine emissions for a representative operating period or cycle as specified in this part.

*Shutdown* means the cessation of operation of an affected source or portion of an affected source for any purpose.

*Six-minute period* means, with respect to opacity determinations, any one of the 10 equal parts of a 1-hour period.

*Source at a Performance Track member facility* means a major or area source located at a facility which has been accepted by EPA for membership in the Performance Track Program (as described at [www.epa.gov/PerformanceTrack](http://www.epa.gov/PerformanceTrack)) and is still a member of the Program. The Performance Track Program is a voluntary program that encourages continuous environmental improvement through the use of environmental management systems, local community outreach, and measurable results.

*Standard conditions* means a temperature of 293 K (68 °F) and a pressure of 101.3 kilopascals (29.92 in. Hg).

*Startup* means the setting in operation of an affected source or portion of an affected source for any purpose.

*State* means all non-Federal authorities, including local agencies, interstate associations, and State-wide programs, that have delegated authority to implement:

- (1) The provisions of this part and/or
- (2) the permit program established under part 70 of this chapter. The term State shall have its conventional meaning where clear from the context.

*Stationary source* means any building, structure, facility, or installation which emits or may emit any air pollutant.

*Test method* means the validated procedure for sampling, preparing, and analyzing for an air pollutant specified in a relevant standard as the performance test procedure. The test method may include methods described in



an appendix of this chapter, test methods incorporated by reference in this part, or methods validated for an application through procedures in Method 301 of appendix A of this part.

*Title V permit* means any permit issued, renewed, or revised pursuant to Federal or State regulations established to implement title V of the Act (42 U.S.C. 7661). A title V permit issued by a State permitting authority is called a part 70 permit in this part.

*Visible emission* means the observation of an emission of opacity or optical density above the threshold of vision.

*Working day* means any day on which Federal Government offices (or State government offices for a State that has obtained delegation under section 112(l)) are open for normal business. Saturdays, Sundays, and official Federal (or where delegated, State) holidays are not working days.

### § 63.3 Units and abbreviations.

Used in this part are abbreviations and symbols of units of measure. These are defined as follows:

(a) *System International (SI) units of measure:*

A = ampere

g = gram

Hz = hertz

J = joule

°K = degree Kelvin

kg = kilogram

l = liter

m = meter

m<sup>3</sup> = cubic meter

mg = milligram = 10<sup>-3</sup> gram

ml = milliliter = 10<sup>-3</sup> liter

mm = millimeter = 10<sup>-3</sup> meter

Mg = megagram = 10<sup>6</sup> gram = metric ton

MJ = megajoule

mol = mole

N = newton

ng = nanogram = 10<sup>-9</sup> gram

nm = nanometer = 10<sup>-9</sup> meter

Pa = pascal

s = second

V = volt

W = watt

$\Omega$  = ohm

$\mu\text{g}$  = microgram =  $10^{-6}$  gram

$\mu\text{l}$  = microliter =  $10^{-6}$  liter

(b) *Other units of measure:*

Btu = British thermal unit

$^{\circ}\text{C}$  = degree Celsius (centigrade)

cal = calorie

cfm = cubic feet per minute

cc = cubic centimeter

cu ft = cubic feet

d = day

dcf = dry cubic feet

dcm = dry cubic meter

dscf = dry cubic feet at standard conditions

dscm = dry cubic meter at standard conditions

eq = equivalent

$^{\circ}\text{F}$  degree Fahrenheit

ft = feet

$\text{ft}^2$  = square feet

$\text{ft}^3$  = cubic feet

gal = gallon

gr = grain

g-eq = gram equivalent

g-mole = gram mole

hr = hour

in. = inch

in.  $\text{H}_2\text{O}$  = inches of water

K = 1,000

kcal = kilocalorie

lb = pound

lpm = liter per minute

meq = milliequivalent

min = minute

MW = molecular weight

oz = ounces

ppb = parts per billion

ppbw = parts per billion by weight

ppbv = parts per billion by volume

ppm = parts per million

ppmw = parts per million by weight

ppmv = parts per million by volume

psia = pounds per square inch absolute

psig = pounds per square inch gage

°R = degree Rankine

scf = cubic feet at standard conditions

scfh = cubic feet at standard conditions per hour

scm = cubic meter at standard conditions

scmm = cubic meter at standard conditions per minute

sec = second

sq ft = square feet

std = at standard conditions

v/v = volume per volume

yd<sup>2</sup> = square yards

yr = year

(c) *Miscellaneous:*

act = actual

avg = average

I.D. = inside diameter

M = molar

N = normal

O.D. = outside diameter

% = percent

**§ 63.4 Prohibited activities and circumvention.**

(a) *Prohibited activities.*

(1) No owner or operator subject to the provisions of this part must operate any affected source in violation of the requirements of this part. Affected sources subject to and in compliance with either an extension of compliance or an exemption from compliance are not in violation of the requirements of this part. An extension of compliance can be granted by the Administrator under this part; by a State with an approved permit program; or by the President under section 112(i)(4) of the Act.

(2) No owner or operator subject to the provisions of this part shall fail to keep records, notify, report, or revise reports as required under this part.

(3)-(5) [Reserved]

(b) *Circumvention.* No owner or operator subject to the provisions of this part shall build, erect, install, or use any article, machine, equipment, or process to conceal an emission that would otherwise constitute noncompliance with a relevant standard. Such concealment includes, but is not limited to -

(1) The use of diluents to achieve compliance with a relevant standard based on the concentration of a pollutant in the effluent discharged to the atmosphere;

(2) The use of gaseous diluents to achieve compliance with a relevant standard for visible emissions;  
and

(c) *Fragmentation.* Fragmentation after November 15, 1990 which divides ownership of an operation, within the same facility among various owners where there is no real change in control, will not affect applicability. The owner and operator must not use fragmentation or phasing of reconstruction activities (i.e., intentionally dividing reconstruction into multiple parts for purposes of avoiding new source requirements) to avoid becoming subject to new source requirements.

**§ 63.5 Preconstruction review and notification requirements.**

(a) *Applicability.*

(1) This section implements the preconstruction review requirements of section 112(i)(1). After the effective date of a relevant standard, promulgated pursuant to section 112(d), (f), or (h) of the Act, under this part, the preconstruction review requirements in this section apply to the owner or operator of new affected sources and reconstructed affected sources that are major-emitting as specified in this section. New and reconstructed affected sources that commence construction or reconstruction before the effective date of a relevant standard are not subject to the preconstruction review requirements specified in paragraphs (b)(3), (d), and (e) of this section.

(2) This section includes notification requirements for new affected sources and reconstructed affected sources that are not major-emitting affected sources and that are or become subject to a relevant promulgated emission standard after the effective date of a relevant standard promulgated under this part.

(b) *Requirements for existing, newly constructed, and reconstructed sources.*

(1) A new affected source for which construction commences after proposal of a relevant standard is subject to relevant standards for new affected sources, including compliance dates. An affected source for which reconstruction commences after proposal of a relevant standard is subject to relevant

standards for new sources, including compliance dates, irrespective of any change in emissions of hazardous air pollutants from that source.

(2) [Reserved]

(3) After the effective date of any relevant standard promulgated by the Administrator under this part, no person may, without obtaining written approval in advance from the Administrator in accordance with the procedures specified in paragraphs (d) and (e) of this section, do any of the following:

- (i) Construct a new affected source that is major-emitting and subject to such standard;
- (ii) Reconstruct an affected source that is major-emitting and subject to such standard; or
- (iii) Reconstruct a major source such that the source becomes an affected source that is major-emitting and subject to the standard.

(4) After the effective date of any relevant standard promulgated by the Administrator under this part, an owner or operator who constructs a new affected source that is not major-emitting or reconstructs an affected source that is not major-emitting that is subject to such standard, or reconstructs a source such that the source becomes an affected source subject to the standard, must notify the Administrator of the intended construction or reconstruction. The notification must be submitted in accordance with the procedures in § 63.9(b).

(5) [Reserved]

(6) After the effective date of any relevant standard promulgated by the Administrator under this part, equipment added (or a process change) to an affected source that is within the scope of the definition of affected source under the relevant standard must be considered part of the affected source and subject to all provisions of the relevant standard established for that affected source.

(c) [Reserved]

(d) *Application for approval of construction or reconstruction.* The provisions of this paragraph implement section 112(i)(1) of the Act.

(1) *General application requirements.*

(i) An owner or operator who is subject to the requirements of paragraph (b)(3) of this section must submit to the Administrator an application for approval of the construction or reconstruction. The application must be submitted as soon as practicable before actual construction or reconstruction begins. The application for approval of construction or reconstruction may be used to fulfill the initial notification requirements of § 63.9(b)(5). The owner or operator may submit the application for approval well in advance of the date actual construction or reconstruction begins in order to ensure a timely review by the Administrator and that the planned date to begin will not be delayed.

(ii) A separate application shall be submitted for each construction or reconstruction. Each application for approval of construction or reconstruction shall include at a minimum:

- (A) The applicant's name and address;
- (B) A notification of intention to construct a new major affected source or make any physical or operational change to a major affected source that may meet or has been

determined to meet the criteria for a reconstruction, as defined in § 63.2 or in the relevant standard;

(C) The address (i.e., physical location) or proposed address of the source;

(D) An identification of the relevant standard that is the basis of the application;

(E) The expected date of the beginning of actual construction or reconstruction;

(F) The expected completion date of the construction or reconstruction;

(G) [Reserved]

(H) The type and quantity of hazardous air pollutants emitted by the source, reported in units and averaging times and in accordance with the test methods specified in the relevant standard, or if actual emissions data are not yet available, an estimate of the type and quantity of hazardous air pollutants expected to be emitted by the source reported in units and averaging times specified in the relevant standard. The owner or operator may submit percent reduction information if a relevant standard is established in terms of percent reduction. However, operating parameters, such as flow rate, shall be included in the submission to the extent that they demonstrate performance and compliance; and

(I) [Reserved]

(J) Other information as specified in paragraphs (d)(2) and (d)(3) of this section.

(iii) An owner or operator who submits estimates or preliminary information in place of the actual emissions data and analysis required in paragraphs (d)(1)(ii)(H) and (d)(2) of this section shall submit the actual, measured emissions data and other correct information as soon as available but no later than with the notification of compliance status required in § 63.9(h) (see § 63.9(h)(5)).

(2) *Application for approval of construction.* Each application for approval of construction must include, in addition to the information required in paragraph (d)(1)(ii) of this section, technical information describing the proposed nature, size, design, operating design capacity, and method of operation of the source, including an identification of each type of emission point for each type of hazardous air pollutant that is emitted (or could reasonably be anticipated to be emitted) and a description of the planned air pollution control system (equipment or method) for each emission point. The description of the equipment to be used for the control of emissions must include each control device for each hazardous air pollutant and the estimated control efficiency (percent) for each control device. The description of the method to be used for the control of emissions must include an estimated control efficiency (percent) for that method. Such technical information must include calculations of emission estimates in sufficient detail to permit assessment of the validity of the calculations.

(3) *Application for approval of reconstruction.* Each application for approval of reconstruction shall include, in addition to the information required in paragraph (d)(1)(ii) of this section -

(i) A brief description of the affected source and the components that are to be replaced;

(ii) A description of present and proposed emission control systems (i.e., equipment or methods). The description of the equipment to be used for the control of emissions shall include each control device for each hazardous air pollutant and the estimated control

efficiency (percent) for each control device. The description of the method to be used for the control of emissions shall include an estimated control efficiency (percent) for that method. Such technical information shall include calculations of emission estimates in sufficient detail to permit assessment of the validity of the calculations;

- (iii) An estimate of the fixed capital cost of the replacements and of constructing a comparable entirely new source;
- (iv) The estimated life of the affected source after the replacements; and
- (v) A discussion of any economic or technical limitations the source may have in complying with relevant standards or other requirements after the proposed replacements. The discussion shall be sufficiently detailed to demonstrate to the Administrator's satisfaction that the technical or economic limitations affect the source's ability to comply with the relevant standard and how they do so.
- (vi) If in the application for approval of reconstruction the owner or operator designates the affected source as a reconstructed source and declares that there are no economic or technical limitations to prevent the source from complying with all relevant standards or other requirements, the owner or operator need not submit the information required in paragraphs (d)(3)(iii) through (d)(3)(v) of this section.

(4) *Additional information.* The Administrator may request additional relevant information after the submittal of an application for approval of construction or reconstruction.

(e) *Approval of construction or reconstruction.*

(1) (i) If the Administrator determines that, if properly constructed, or reconstructed, and operated, a new or existing source for which an application under paragraph (d) of this section was submitted will not cause emissions in violation of the relevant standard(s) and any other federally enforceable requirements, the Administrator will approve the construction or reconstruction.

(ii) In addition, in the case of reconstruction, the Administrator's determination under this paragraph will be based on:

- (A) The fixed capital cost of the replacements in comparison to the fixed capital cost that would be required to construct a comparable entirely new source;
- (B) The estimated life of the source after the replacements compared to the life of a comparable entirely new source;
- (C) The extent to which the components being replaced cause or contribute to the emissions from the source; and
- (D) Any economic or technical limitations on compliance with relevant standards that are inherent in the proposed replacements.

(2) (i) The Administrator will notify the owner or operator in writing of approval or intention to deny approval of construction or reconstruction within 60 calendar days after receipt of sufficient information to evaluate an application submitted under paragraph (d) of this section. The 60-day approval or denial period will begin after the owner or operator has been notified in writing that his/her application is complete. The Administrator will notify the owner or operator in writing of the status of his/her application, that is, whether the application contains sufficient information to make a

determination, within 30 calendar days after receipt of the original application and within 30 calendar days after receipt of any supplementary information that is submitted.

(ii) When notifying the owner or operator that his/her application is not complete, the Administrator will specify the information needed to complete the application and provide notice of opportunity for the applicant to present, in writing, within 30 calendar days after he/she is notified of the incomplete application, additional information or arguments to the Administrator to enable further action on the application.

(3) Before denying any application for approval of construction or reconstruction, the Administrator will notify the applicant of the Administrator's intention to issue the denial together with -

(i) Notice of the information and findings on which the intended denial is based; and

(ii) Notice of opportunity for the applicant to present, in writing, within 30 calendar days after he/she is notified of the intended denial, additional information or arguments to the Administrator to enable further action on the application.

(4) A final determination to deny any application for approval will be in writing and will specify the grounds on which the denial is based. The final determination will be made within 60 calendar days of presentation of additional information or arguments (if the application is complete), or within 60 calendar days after the final date specified for presentation if no presentation is made.

(5) Neither the submission of an application for approval nor the Administrator's approval of construction or reconstruction shall -

(i) Relieve an owner or operator of legal responsibility for compliance with any applicable provisions of this part or with any other applicable Federal, State, or local requirement; or

(ii) Prevent the Administrator from implementing or enforcing this part or taking any other action under the Act.

(f) *Approval of construction or reconstruction based on prior State preconstruction review.*

(1) Preconstruction review procedures that a State utilizes for other purposes may also be utilized for purposes of this section if the procedures are substantially equivalent to those specified in this section. The Administrator will approve an application for construction or reconstruction specified in paragraphs (b)(3) and (d) of this section if the owner or operator of a new affected source or reconstructed affected source, who is subject to such requirement meets the following conditions:

(i) The owner or operator of the new affected source or reconstructed affected source has undergone a preconstruction review and approval process in the State in which the source is (or would be) located and has received a federally enforceable construction permit that contains a finding that the source will meet the relevant promulgated emission standard, if the source is properly built and operated.

(ii) Provide a statement from the State or other evidence (such as State regulations) that it considered the factors specified in paragraph (e)(1) of this section.

(2) The owner or operator must submit to the Administrator the request for approval of construction or reconstruction under this paragraph (f)(2) no later than the application deadline specified in paragraph (d)(1) of this section (see also § 63.9(b)(2)). The owner or operator must include in the request information sufficient for the Administrator's determination. The Administrator will evaluate



the owner or operator's request in accordance with the procedures specified in paragraph (e) of this section. The Administrator may request additional relevant information after the submittal of a request for approval of construction or reconstruction under this paragraph (f)(2).

**§ 63.6 Compliance with standards and maintenance requirements.**

*(a) Applicability.*

(1) The requirements in this section apply to the owner or operator of affected sources for which any relevant standard has been established pursuant to section 112 of the Act and the applicability of such requirements is set out in accordance with § 63.1(a)(4) unless -

- (i) The Administrator (or a State with an approved permit program) has granted an extension of compliance consistent with paragraph (i) of this section; or
- (ii) The President has granted an exemption from compliance with any relevant standard in accordance with section 112(i)(4) of the Act.

(2) If an area source that otherwise would be subject to an emission standard or other requirement established under this part if it were a major source subsequently increases its emissions of hazardous air pollutants (or its potential to emit hazardous air pollutants) such that the source is a major source, such source shall be subject to the relevant emission standard or other requirement.

*(b) Compliance dates for new and reconstructed sources.*

(1) Except as specified in paragraphs (b)(3) and (4) of this section, the owner or operator of a new or reconstructed affected source for which construction or reconstruction commences after proposal of a relevant standard that has an initial startup before the effective date of a relevant standard established under this part pursuant to section 112(d), (f), or (h) of the Act must comply with such standard not later than the standard's effective date.

(2) Except as specified in paragraphs (b)(3) and (4) of this section, the owner or operator of a new or reconstructed affected source that has an initial startup after the effective date of a relevant standard established under this part pursuant to section 112(d), (f), or (h) of the Act must comply with such standard upon startup of the source.

(3) The owner or operator of an affected source for which construction or reconstruction is commenced after the proposal date of a relevant standard established under this part pursuant to section 112(d), 112(f), or 112(h) of the Act but before the effective date (that is, promulgation) of such standard shall comply with the relevant emission standard not later than the date 3 years after the effective date if:

- (i) The promulgated standard (that is, the relevant standard) is more stringent than the proposed standard; for purposes of this paragraph, a finding that controls or compliance methods are "more stringent" must include control technologies or performance criteria and compliance or compliance assurance methods that are different but are substantially equivalent to those required by the promulgated rule, as determined by the Administrator (or his or her authorized representative); and
- (ii) The owner or operator complies with the standard as proposed during the 3-year period immediately after the effective date.

(4) The owner or operator of an affected source for which construction or reconstruction is commenced after the proposal date of a relevant standard established pursuant to section 112(d) of the Act but before the proposal date of a relevant standard established pursuant to section 112(f) shall not be required to comply with the section 112(f) emission standard until the date 10 years after the date construction or reconstruction is commenced, except that, if the section 112(f) standard is promulgated more than 10 years after construction or reconstruction is commenced, the owner or operator must comply with the standard as provided in paragraphs (b)(1) and (2) of this section.

(5) The owner or operator of a new source that is subject to the compliance requirements of paragraph (b)(3) or (4) of this section must notify the Administrator in accordance with § 63.9(d)

(6) [Reserved]

(7) When an area source increases its emissions of (or its potential to emit) hazardous air pollutants such that the source becomes a major source, the portion of the facility that meets the definition of a new affected source must comply with all requirements of that standard applicable to new sources. The source owner or operator must comply with the relevant standard upon startup.

(c) *Compliance dates for existing sources.*

(1) After the effective date of a relevant standard established under this part pursuant to section 112(d) or 112(h) of the Act, the owner or operator of an existing source shall comply with such standard by the compliance date established by the Administrator in the applicable subpart(s) of this part, except as provided in § 63.1(c)(6)(i). Except as otherwise provided for in section 112 of the Act, in no case will the compliance date established for an existing source in an applicable subpart of this part exceed 3 years after the effective date of such standard.

(2) If an existing source is subject to a standard established under this part pursuant to section 112(f) of the Act, the owner or operator must comply with the standard by the date 90 days after the standard's effective date, or by the date specified in an extension granted to the source by the Administrator under paragraph (i)(4)(ii) of this section, whichever is later.

(3)-(4) [Reserved]

(5) Except as provided in paragraph (b)(7) of this section, the owner or operator of an area source that increases its emissions of (or its potential to emit) hazardous air pollutants such that the source becomes a major source and meets the definition of an existing source in the applicable major source standard shall be subject to relevant standards for existing sources. Except as provided in paragraph § 63.1(c)(6)(i)(B), such sources must comply by the date specified in the standards for existing area sources that become major sources. If no such compliance date is specified in the standards, the source shall have a period of time to comply with the relevant emission standard that is equivalent to the compliance period specified in the relevant standard for existing sources in existence at the time the standard becomes effective.

(d) [Reserved]

(e) *Operation and maintenance requirements.*

(1) (i) At all times, including periods of startup, shutdown, and malfunction, the owner or operator must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices

for minimizing emissions. During a period of startup, shutdown, or malfunction, this general duty to minimize emissions requires that the owner or operator reduce emissions from the affected source to the greatest extent which is consistent with safety and good air pollution control practices. The general duty to minimize emissions during a period of startup, shutdown, or malfunction does not require the owner or operator to achieve emission levels that would be required by the applicable standard at other times if this is not consistent with safety and good air pollution control practices, nor does it require the owner or operator to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures (including the startup, shutdown, and malfunction plan required in paragraph (e)(3) of this section), review of operation and maintenance records, and inspection of the source.

(ii) Malfunctions must be corrected as soon as practicable after their occurrence. To the extent that an unexpected event arises during a startup, shutdown, or malfunction, an owner or operator must comply by minimizing emissions during such a startup, shutdown, and malfunction event consistent with safety and good air pollution control practices.

(iii) Operation and maintenance requirements established pursuant to section 112 of the Act are enforceable independent of emissions limitations or other requirements in relevant standards.

(2) [Reserved]

(3) *Startup, shutdown, and malfunction plan.*

(i) The owner or operator of an affected source must develop a written startup, shutdown, and malfunction plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown, and malfunction; and a program of corrective action for malfunctioning process, air pollution control, and monitoring equipment used to comply with the relevant standard. The startup, shutdown, and malfunction plan does not need to address any scenario that would not cause the source to exceed an applicable emission limitation in the relevant standard. This plan must be developed by the owner or operator by the source's compliance date for that relevant standard. The purpose of the startup, shutdown, and malfunction plan is to -

(A) Ensure that, at all times, the owner or operator operates and maintains each affected source, including associated air pollution control and monitoring equipment, in a manner which satisfies the general duty to minimize emissions established by paragraph (e)(1)(i) of this section;

(B) Ensure that owners or operators are prepared to correct malfunctions as soon as practicable after their occurrence in order to minimize excess emissions of hazardous air pollutants; and

(C) Reduce the reporting burden associated with periods of startup, shutdown, and malfunction (including corrective action taken to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation).

(ii) [Reserved]

(iii) When actions taken by the owner or operator during a startup or shutdown (and the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards), or malfunction (including actions taken to correct a malfunction) are consistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan, the owner or operator must keep records for that event which demonstrate that the procedures specified in the plan were followed. These records may take the form of a "checklist," or other effective form of recordkeeping that confirms conformance with the startup, shutdown, and malfunction plan and describes the actions taken for that event. In addition, the owner or operator must keep records of these events as specified in paragraph 63.10(b), including records of the occurrence and duration of each startup or shutdown (if the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards), or malfunction of operation and each malfunction of the air pollution control and monitoring equipment. Furthermore, the owner or operator shall confirm that actions taken during the relevant reporting period during periods of startup, shutdown, and malfunction were consistent with the affected source's startup, shutdown and malfunction plan in the semiannual (or more frequent) startup, shutdown, and malfunction report required in § 63.10(d)(5).

(iv) If an action taken by the owner or operator during a startup, shutdown, or malfunction (including an action taken to correct a malfunction) is not consistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan, and the source exceeds any applicable emission limitation in the relevant emission standard, then the owner or operator must record the actions taken for that event and must report such actions within 2 working days after commencing actions inconsistent with the plan, followed by a letter within 7 working days after the end of the event, in accordance with § 63.10(d)(5) (unless the owner or operator makes alternative reporting arrangements, in advance, with the Administrator).

(v) The owner or operator must maintain at the affected source a current startup, shutdown, and malfunction plan and must make the plan available upon request for inspection and copying by the Administrator. In addition, if the startup, shutdown, and malfunction plan is subsequently revised as provided in paragraph (e)(3)(viii) of this section, the owner or operator must maintain at the affected source each previous (i.e., superseded) version of the startup, shutdown, and malfunction plan, and must make each such previous version available for inspection and copying by the Administrator for a period of 5 years after revision of the plan. If at any time after adoption of a startup, shutdown, and malfunction plan the affected source ceases operation or is otherwise no longer subject to the provisions of this part, the owner or operator must retain a copy of the most recent plan for 5 years from the date the source ceases operation or is no longer subject to this part and must make the plan available upon request for inspection and copying by the Administrator. The Administrator may at any time request in writing that the owner or operator submit a copy of any startup, shutdown, and malfunction plan (or a portion thereof) which is maintained at the affected source or in the possession of the owner or operator. Upon receipt of such a request, the owner or operator must promptly submit a copy of the requested plan (or a portion thereof) to the Administrator. The owner or operator may elect to submit the required copy of any startup, shutdown, and malfunction plan to the Administrator in an electronic format. If the owner or operator claims that any portion of such a startup, shutdown, and malfunction plan is confidential business information entitled to

protection from disclosure under section 114(c) of the Act or 40 CFR 2.301, the material which is claimed as confidential must be clearly designated in the submission.

(vi) To satisfy the requirements of this section to develop a startup, shutdown, and malfunction plan, the owner or operator may use the affected source's standard operating procedures (SOP) manual, or an Occupational Safety and Health Administration (OSHA) or other plan, provided the alternative plans meet all the requirements of this section and are made available for inspection or submitted when requested by the Administrator.

(vii) Based on the results of a determination made under paragraph (e)(1)(i) of this section, the Administrator may require that an owner or operator of an affected source make changes to the startup, shutdown, and malfunction plan for that source. The Administrator must require appropriate revisions to a startup, shutdown, and malfunction plan, if the Administrator finds that the plan:

- (A) Does not address a startup, shutdown, or malfunction event that has occurred;
- (B) Fails to provide for the operation of the source (including associated air pollution control and monitoring equipment) during a startup, shutdown, or malfunction event in a manner consistent with the general duty to minimize emissions established by paragraph (e)(1)(i) of this section;
- (C) Does not provide adequate procedures for correcting malfunctioning process and/or air pollution control and monitoring equipment as quickly as practicable; or
- (D) Includes an event that does not meet the definition of startup, shutdown, or malfunction listed in § 63.2.

(viii) The owner or operator may periodically revise the startup, shutdown, and malfunction plan for the affected source as necessary to satisfy the requirements of this part or to reflect changes in equipment or procedures at the affected source. Unless the permitting authority provides otherwise, the owner or operator may make such revisions to the startup, shutdown, and malfunction plan without prior approval by the Administrator or the permitting authority. However, each such revision to a startup, shutdown, and malfunction plan must be reported in the semiannual report required by § 63.10(d)(5). If the startup, shutdown, and malfunction plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction but was not included in the startup, shutdown, and malfunction plan at the time the owner or operator developed the plan, the owner or operator must revise the startup, shutdown, and malfunction plan within 45 days after the event to include detailed procedures for operating and maintaining the source during similar malfunction events and a program of corrective action for similar malfunctions of process or air pollution control and monitoring equipment. In the event that the owner or operator makes any revision to the startup, shutdown, and malfunction plan which alters the scope of the activities at the source which are deemed to be a startup, shutdown, or malfunction, or otherwise modifies the applicability of any emission limit, work practice requirement, or other requirement in a standard established under this part, the revised plan shall not take effect until after the owner or operator has provided a written notice describing the revision to the permitting authority.

(ix) The title V permit for an affected source must require that the owner or operator develop a startup, shutdown, and malfunction plan which conforms to the provisions of this part, but may

do so by citing to the relevant subpart or subparagraphs of paragraph (e) of this section. However, any revisions made to the startup, shutdown, and malfunction plan in accordance with the procedures established by this part shall not be deemed to constitute permit revisions under part 70 or part 71 of this chapter and the elements of the startup, shutdown, and malfunction plan shall not be considered an applicable requirement as defined in § 70.2 and § 71.2 of this chapter. Moreover, none of the procedures specified by the startup, shutdown, and malfunction plan for an affected source shall be deemed to fall within the permit shield provision in section 504(f) of the Act.

(f) *Compliance with nonopacity emission standards -*

(1) *Applicability.* The non-opacity emission standards set forth in this part shall apply at all times except as otherwise specified in an applicable subpart. If a startup, shutdown, or malfunction of one portion of an affected source does not affect the ability of particular emission points within other portions of the affected source to comply with the non-opacity emission standards set forth in this part, then that emission point must still be required to comply with the non-opacity emission standards and other applicable requirements.

(2) *Methods for determining compliance.*

(i) The Administrator will determine compliance with nonopacity emission standards in this part based on the results of performance tests conducted according to the procedures in § 63.7, unless otherwise specified in an applicable subpart of this part.

(ii) The Administrator will determine compliance with nonopacity emission standards in this part by evaluation of an owner or operator's conformance with operation and maintenance requirements, including the evaluation of monitoring data, as specified in § 63.6(e) and applicable subparts of this part.

(iii) If an affected source conducts performance testing at startup to obtain an operating permit in the State in which the source is located, the results of such testing may be used to demonstrate compliance with a relevant standard if -

(A) The performance test was conducted within a reasonable amount of time before an initial performance test is required to be conducted under the relevant standard;

(B) The performance test was conducted under representative operating conditions for the source;

(C) The performance test was conducted and the resulting data were reduced using EPA-approved test methods and procedures, as specified in § 63.7(e) of this subpart; and

(D) The performance test was appropriately quality-assured, as specified in § 63.7(c).

(iv) The Administrator will determine compliance with design, equipment, work practice, or operational emission standards in this part by review of records, inspection of the source, and other procedures specified in applicable subparts of this part.

(v) The Administrator will determine compliance with design, equipment, work practice, or operational emission standards in this part by evaluation of an owner or operator's

conformance with operation and maintenance requirements, as specified in paragraph (e) of this section and applicable subparts of this part.

(3) *Finding of compliance.* The Administrator will make a finding concerning an affected source's compliance with a non-opacity emission standard, as specified in paragraphs (f)(1) and (2) of this section, upon obtaining all the compliance information required by the relevant standard (including the written reports of performance test results, monitoring results, and other information, if applicable), and information available to the Administrator pursuant to paragraph (e)(1)(i) of this section.

(g) *Use of an alternative nonopacity emission standard.*

(1) If, in the Administrator's judgment, an owner or operator of an affected source has established that an alternative means of emission limitation will achieve a reduction in emissions of a hazardous air pollutant from an affected source at least equivalent to the reduction in emissions of that pollutant from that source achieved under any design, equipment, work practice, or operational emission standard, or combination thereof, established under this part pursuant to section 112(h) of the Act, the Administrator will publish in the Federal Register a notice permitting the use of the alternative emission standard for purposes of compliance with the promulgated standard. Any Federal Register notice under this paragraph shall be published only after the public is notified and given the opportunity to comment. Such notice will restrict the permission to the stationary source(s) or category(ies) of sources from which the alternative emission standard will achieve equivalent emission reductions. The Administrator will condition permission in such notice on requirements to assure the proper operation and maintenance of equipment and practices required for compliance with the alternative emission standard and other requirements, including appropriate quality assurance and quality control requirements, that are deemed necessary.

(2) An owner or operator requesting permission under this paragraph shall, unless otherwise specified in an applicable subpart, submit a proposed test plan or the results of testing and monitoring in accordance with § 63.7 and § 63.8, a description of the procedures followed in testing or monitoring, and a description of pertinent conditions during testing or monitoring. Any testing or monitoring conducted to request permission to use an alternative nonopacity emission standard shall be appropriately quality assured and quality controlled, as specified in § 63.7 and § 63.8.

(3) The Administrator may establish general procedures in an applicable subpart that accomplish the requirements of paragraphs (g)(1) and (g)(2) of this section.

(h) *Compliance with opacity and visible emission standards -*

(1) *Applicability.* The opacity and visible emission standards set forth in this part must apply at all times except as otherwise specified in an applicable subpart. If a startup, shutdown, or malfunction of one portion of an affected source does not affect the ability of particular emission points within other portions of the affected source to comply with the opacity and visible emission standards set forth in this part, then that emission point shall still be required to comply with the opacity and visible emission standards and other applicable requirements.

(2) *Methods for determining compliance.*

(i) The Administrator will determine compliance with opacity and visible emission standards in this part based on the results of the test method specified in an applicable subpart. Whenever a

continuous opacity monitoring system (COMS) is required to be installed to determine compliance with numerical opacity emission standards in this part, compliance with opacity emission standards in this part shall be determined by using the results from the COMS. Whenever an opacity emission test method is not specified, compliance with opacity emission standards in this part shall be determined by conducting observations in accordance with Test Method 9 in appendix A of part 60 of this chapter or the method specified in paragraph (h)(7)(ii) of this section. Whenever a visible emission test method is not specified, compliance with visible emission standards in this part shall be determined by conducting observations in accordance with Test Method 22 in appendix A of part 60 of this chapter.

(ii) [Reserved]

(iii) If an affected source undergoes opacity or visible emission testing at startup to obtain an operating permit in the State in which the source is located, the results of such testing may be used to demonstrate compliance with a relevant standard if -

- (A) The opacity or visible emission test was conducted within a reasonable amount of time before a performance test is required to be conducted under the relevant standard;
- (B) The opacity or visible emission test was conducted under representative operating conditions for the source;
- (C) The opacity or visible emission test was conducted and the resulting data were reduced using EPA-approved test methods and procedures, as specified in § 63.7(e); and
- (D) The opacity or visible emission test was appropriately quality-assured, as specified in § 63.7(c) of this section.

(3) [Reserved]

(4) *Notification of opacity or visible emission observations.* The owner or operator of an affected source shall notify the Administrator in writing of the anticipated date for conducting opacity or visible emission observations in accordance with § 63.9(f), if such observations are required for the source by a relevant standard.

(5) *Conduct of opacity or visible emission observations.* When a relevant standard under this part includes an opacity or visible emission standard, the owner or operator of an affected source shall comply with the following:

(i) For the purpose of demonstrating initial compliance, opacity or visible emission observations shall be conducted concurrently with the initial performance test required in § 63.7 unless one of the following conditions applies:

- (A) If no performance test under § 63.7 is required, opacity or visible emission observations shall be conducted within 60 days after achieving the maximum production rate at which a new or reconstructed source will be operated, but not later than 120 days after initial startup of the source, or within 120 days after the effective date of the relevant standard in the case of new sources that start up before the standard's effective date. If no performance test under § 63.7 is required, opacity or



visible emission observations shall be conducted within 120 days after the compliance date for an existing or modified source; or

(B) If visibility or other conditions prevent the opacity or visible emission observations from being conducted concurrently with the initial performance test required under § 63.7, or within the time period specified in paragraph (h)(5)(i)(A) of this section, the source's owner or operator shall reschedule the opacity or visible emission observations as soon after the initial performance test, or time period, as possible, but not later than 30 days thereafter, and shall advise the Administrator of the rescheduled date. The rescheduled opacity or visible emission observations shall be conducted (to the extent possible) under the same operating conditions that existed during the initial performance test conducted under § 63.7. The visible emissions observer shall determine whether visibility or other conditions prevent the opacity or visible emission observations from being made concurrently with the initial performance test in accordance with procedures contained in Test Method 9 or Test Method 22 in appendix A of part 60 of this chapter.

(ii) For the purpose of demonstrating initial compliance, the minimum total time of opacity observations shall be 3 hours (30 6-minute averages) for the performance test or other required set of observations (e.g., for fugitive-type emission sources subject only to an opacity emission standard).

(iii) The owner or operator of an affected source to which an opacity or visible emission standard in this part applies shall conduct opacity or visible emission observations in accordance with the provisions of this section, record the results of the evaluation of emissions, and report to the Administrator the opacity or visible emission results in accordance with the provisions of § 63.10(d).

(iv) [Reserved]

(v) Opacity readings of portions of plumes that contain condensed, uncombined water vapor shall not be used for purposes of determining compliance with opacity emission standards.

(6) *Availability of records.* The owner or operator of an affected source shall make available, upon request by the Administrator, such records that the Administrator deems necessary to determine the conditions under which the visual observations were made and shall provide evidence indicating proof of current visible observer emission certification.

(7) *Use of a continuous opacity monitoring system.*

(i) The owner or operator of an affected source required to use a continuous opacity monitoring system (COMS) shall record the monitoring data produced during a performance test required under § 63.7 and shall furnish the Administrator a written report of the monitoring results in accordance with the provisions of § 63.10(e)(4).

(ii) Whenever an opacity emission test method has not been specified in an applicable subpart, or an owner or operator of an affected source is required to conduct Test Method 9 observations (see appendix A of part 60 of this chapter), the owner or operator may submit, for compliance purposes, COMS data results produced during any performance test required under § 63.7 in lieu of Method 9 data. If the owner or operator elects to submit COMS data for

compliance with the opacity emission standard, he or she shall notify the Administrator of that decision, in writing, simultaneously with the notification under § 63.7(b) of the date the performance test is scheduled to begin. Once the owner or operator of an affected source has notified the Administrator to that effect, the COMS data results will be used to determine opacity compliance during subsequent performance tests required under § 63.7, unless the owner or operator notifies the Administrator in writing to the contrary not later than with the notification under § 63.7(b) of the date the subsequent performance test is scheduled to begin.

(iii) For the purposes of determining compliance with the opacity emission standard during a performance test required under § 63.7 using COMS data, the COMS data shall be reduced to 6-minute averages over the duration of the mass emission performance test.

(iv) The owner or operator of an affected source using a COMS for compliance purposes is responsible for demonstrating that he/she has complied with the performance evaluation requirements of § 63.8(e), that the COMS has been properly maintained, operated, and data quality-assured, as specified in § 63.8(c) and § 63.8(d), and that the resulting data have not been altered in any way.

(v) Except as provided in paragraph (h)(7)(ii) of this section, the results of continuous monitoring by a COMS that indicate that the opacity at the time visual observations were made was not in excess of the emission standard are probative but not conclusive evidence of the actual opacity of an emission, provided that the affected source proves that, at the time of the alleged violation, the instrument used was properly maintained, as specified in § 63.8(c), and met Performance Specification 1 in appendix B of part 60 of this chapter, and that the resulting data have not been altered in any way.

(8) *Finding of compliance.* The Administrator will make a finding concerning an affected source's compliance with an opacity or visible emission standard upon obtaining all the compliance information required by the relevant standard (including the written reports of the results of the performance tests required by § 63.7, the results of Test Method 9 or another required opacity or visible emission test method, the observer certification required by paragraph (h)(6) of this section, and the continuous opacity monitoring system results, whichever is/are applicable) and any information available to the Administrator needed to determine whether proper operation and maintenance practices are being used.

(9) *Adjustment to an opacity emission standard.*

(i) If the Administrator finds under paragraph (h)(8) of this section that an affected source is in compliance with all relevant standards for which initial performance tests were conducted under § 63.7, but during the time such performance tests were conducted fails to meet any relevant opacity emission standard, the owner or operator of such source may petition the Administrator to make appropriate adjustment to the opacity emission standard for the affected source. Until the Administrator notifies the owner or operator of the appropriate adjustment, the relevant opacity emission standard remains applicable.

(ii) The Administrator may grant such a petition upon a demonstration by the owner or operator that -

(A) The affected source and its associated air pollution control equipment were operated and maintained in a manner to minimize the opacity of emissions during the performance tests;

(B) The performance tests were performed under the conditions established by the Administrator; and

(C) The affected source and its associated air pollution control equipment were incapable of being adjusted or operated to meet the relevant opacity emission standard.

(iii) The Administrator will establish an adjusted opacity emission standard for the affected source meeting the above requirements at a level at which the source will be able, as indicated by the performance and opacity tests, to meet the opacity emission standard at all times during which the source is meeting the mass or concentration emission standard. The Administrator will promulgate the new opacity emission standard in the Federal Register.

(iv) After the Administrator promulgates an adjusted opacity emission standard for an affected source, the owner or operator of such source shall be subject to the new opacity emission standard, and the new opacity emission standard shall apply to such source during any subsequent performance tests.

*(i) Extension of compliance with emission standards.*

(1) Until an extension of compliance has been granted by the Administrator (or a State with an approved permit program) under this paragraph, the owner or operator of an affected source subject to the requirements of this section shall comply with all applicable requirements of this part.

*(2) Extension of compliance for early reductions and other reductions -*

*(i) Early reductions.* Pursuant to section 112(i)(5) of the Act, if the owner or operator of an existing source demonstrates that the source has achieved a reduction in emissions of hazardous air pollutants in accordance with the provisions of subpart D of this part, the Administrator (or the State with an approved permit program) will grant the owner or operator an extension of compliance with specific requirements of this part, as specified in subpart D.

*(ii) Other reductions.* Pursuant to section 112(i)(6) of the Act, if the owner or operator of an existing source has installed best available control technology (BACT) (as defined in section 169(3) of the Act) or technology required to meet a lowest achievable emission rate (LAER) (as defined in section 171 of the Act) prior to the promulgation of an emission standard in this part applicable to such source and the same pollutant (or stream of pollutants) controlled pursuant to the BACT or LAER installation, the Administrator will grant the owner or operator an extension of compliance with such emission standard that will apply until the date 5 years after the date on which such installation was achieved, as determined by the Administrator.

*(3) Request for extension of compliance.* Paragraphs (i)(4) through (i)(7) of this section concern requests for an extension of compliance with a relevant standard under this part (except requests for an extension of compliance under paragraph (i)(2)(i) of this section will be handled through procedures specified in subpart D of this part).

(4) (i) (A) The owner or operator of an existing source who is unable to comply with a relevant standard established under this part pursuant to section 112(d) of the Act may request that the Administrator

(or a State, when the State has an approved part 70 permit program and the source is required to obtain a part 70 permit under that program, or a State, when the State has been delegated the authority to implement and enforce the emission standard for that source) grant an extension allowing the source up to 1 additional year to comply with the standard, if such additional period is necessary for the installation of controls. An additional extension of up to 3 years may be added for mining waste operations, if the 1-year extension of compliance is insufficient to dry and cover mining waste in order to reduce emissions of any hazardous air pollutant. The owner or operator of an affected source who has requested an extension of compliance under this paragraph and who is otherwise required to obtain a title V permit shall apply for such permit or apply to have the source's title V permit revised to incorporate the conditions of the extension of compliance. The conditions of an extension of compliance granted under this paragraph will be incorporated into the affected source's title V permit according to the provisions of part 70 or Federal title V regulations in this chapter (42 U.S.C. 7661), whichever are applicable.

(B) Any request under this paragraph for an extension of compliance with a relevant standard must be submitted in writing to the appropriate authority no later than 120 days prior to the affected source's compliance date (as specified in paragraphs (b) and (c) of this section), except as provided for in paragraph (i)(4)(i)(C) of this section. Nonfrivolous requests submitted under this paragraph will stay the applicability of the rule as to the emission points in question until such time as the request is granted or denied. A denial will be effective as of the date of denial. Emission standards established under this part may specify alternative dates for the submittal of requests for an extension of compliance if alternatives are appropriate for the source categories affected by those standards.

(C) An owner or operator may submit a compliance extension request after the date specified in paragraph (i)(4)(i)(B) of this section provided the need for the compliance extension arose after that date, and before the otherwise applicable compliance date and the need arose due to circumstances beyond reasonable control of the owner or operator. This request must include, in addition to the information required in paragraph (i)(6)(i) of this section, a statement of the reasons additional time is needed and the date when the owner or operator first learned of the problems. Nonfrivolous requests submitted under this paragraph will stay the applicability of the rule as to the emission points in question until such time as the request is granted or denied. A denial will be effective as of the original compliance date.

(ii) The owner or operator of an existing source unable to comply with a relevant standard established under this part pursuant to section 112(f) of the Act may request that the Administrator grant an extension allowing the source up to 2 years after the standard's effective date to comply with the standard. The Administrator may grant such an extension if he/she finds that such additional period is necessary for the installation of controls and that steps will be taken during the period of the extension to assure that the health of persons will be protected from imminent endangerment. Any request for an extension of compliance with a relevant standard under this paragraph must be submitted in writing to the Administrator not later than 90 calendar days after the effective date of the relevant standard.

(5) The owner or operator of an existing source that has installed BACT or technology required to meet LAER [as specified in paragraph (i)(2)(ii) of this section] prior to the promulgation of a relevant emission standard in this part may request that the Administrator grant an extension allowing the source 5 years from the date on which such installation was achieved, as determined by the Administrator, to comply with the standard. Any request for an extension of compliance with a relevant standard under this paragraph shall be submitted in writing to the Administrator not later than 120 days after the promulgation date of the standard. The Administrator may grant such an extension if he or she finds that the installation of BACT or technology to meet LAER controls the same pollutant (or stream of pollutants) that would be controlled at that source by the relevant emission standard.

(6) (i) The request for a compliance extension under paragraph (i)(4) of this section shall include the following information:

(A) A description of the controls to be installed to comply with the standard;

(B) A compliance schedule, including the date by which each step toward compliance will be reached. At a minimum, the list of dates shall include:

(1) The date by which on-site construction, installation of emission control equipment, or a process change is planned to be initiated; and

(2) The date by which final compliance is to be achieved.

(3) The date by which on-site construction, installation of emission control equipment, or a process change is to be completed; and

(4) The date by which final compliance is to be achieved;

(C)-(D)

(ii) The request for a compliance extension under paragraph (i)(5) of this section shall include all information needed to demonstrate to the Administrator's satisfaction that the installation of BACT or technology to meet LAER controls the same pollutant (or stream of pollutants) that would be controlled at that source by the relevant emission standard.

(7) Advice on requesting an extension of compliance may be obtained from the Administrator (or the State with an approved permit program).

(8) *Approval of request for extension of compliance.* Paragraphs (i)(9) through (i)(14) of this section concern approval of an extension of compliance requested under paragraphs (i)(4) through (i)(6) of this section.

(9) Based on the information provided in any request made under paragraphs (i)(4) through (i)(6) of this section, or other information, the Administrator (or the State with an approved permit program) may grant an extension of compliance with an emission standard, as specified in paragraphs (i)(4) and (i)(5) of this section.

(10) The extension will be in writing and will -

(i) Identify each affected source covered by the extension;

(ii) Specify the termination date of the extension;

(iii) Specify the dates by which steps toward compliance are to be taken, if appropriate;

(iv) Specify other applicable requirements to which the compliance extension applies (e.g., performance tests); and

(v) (A) Under paragraph (i)(4), specify any additional conditions that the Administrator (or the State) deems necessary to assure installation of the necessary controls and protection of the health of persons during the extension period; or

(B) Under paragraph (i)(5), specify any additional conditions that the Administrator deems necessary to assure the proper operation and maintenance of the installed controls during the extension period.

(11) The owner or operator of an existing source that has been granted an extension of compliance under paragraph (i)(10) of this section may be required to submit to the Administrator (or the State with an approved permit program) progress reports indicating whether the steps toward compliance outlined in the compliance schedule have been reached. The contents of the progress reports and the dates by which they shall be submitted will be specified in the written extension of compliance granted under paragraph (i)(10) of this section.

(12) (i) The Administrator (or the State with an approved permit program) will notify the owner or operator in writing of approval or intention to deny approval of a request for an extension of compliance within 30 calendar days after receipt of sufficient information to evaluate a request submitted under paragraph (i)(4)(i) or (i)(5) of this section. The Administrator (or the State) will notify the owner or operator in writing of the status of his/her application, that is, whether the application contains sufficient information to make a determination, within 30 calendar days after receipt of the original application and within 30 calendar days after receipt of any supplementary information that is submitted. The 30-day approval or denial period will begin after the owner or operator has been notified in writing that his/her application is complete.

(ii) When notifying the owner or operator that his/her application is not complete, the Administrator will specify the information needed to complete the application and provide notice of opportunity for the applicant to present, in writing, within 30 calendar days after he/she is notified of the incomplete application, additional information or arguments to the Administrator to enable further action on the application.

(iii) Before denying any request for an extension of compliance, the Administrator (or the State with an approved permit program) will notify the owner or operator in writing of the Administrator's (or the State's) intention to issue the denial, together with -

(A) Notice of the information and findings on which the intended denial is based; and

(B) Notice of opportunity for the owner or operator to present in writing, within 15 calendar days after he/she is notified of the intended denial, additional information or arguments to the Administrator (or the State) before further action on the request.

(iv) The Administrator's final determination to deny any request for an extension will be in writing and will set forth the specific grounds on which the denial is based. The final determination will be made within 30 calendar days after presentation of additional information or argument (if the application is complete), or within 30 calendar days after the final date specified for the presentation if no presentation is made.

(13) (i) The Administrator will notify the owner or operator in writing of approval or intention to deny approval of a request for an extension of compliance within 30 calendar days after receipt of sufficient information to evaluate a request submitted under paragraph (i)(4)(ii) of this section. The 30-day approval or denial period will begin after the owner or operator has been notified in writing that his/her application is complete. The Administrator (or the State) will notify the owner or operator in writing of the status of his/her application, that is, whether the application contains sufficient information to make a determination, within 15 calendar days after receipt of the original application and within 15 calendar days after receipt of any supplementary information that is submitted.

(ii) When notifying the owner or operator that his/her application is not complete, the Administrator will specify the information needed to complete the application and provide notice of opportunity for the applicant to present, in writing, within 15 calendar days after he/she is notified of the incomplete application, additional information or arguments to the Administrator to enable further action on the application.

(iii) Before denying any request for an extension of compliance, the Administrator will notify the owner or operator in writing of the Administrator's intention to issue the denial, together with -

(A) Notice of the information and findings on which the intended denial is based; and

(B) Notice of opportunity for the owner or operator to present in writing, within 15 calendar days after he/she is notified of the intended denial, additional information or arguments to the Administrator before further action on the request.

(iv) A final determination to deny any request for an extension will be in writing and will set forth the specific grounds on which the denial is based. The final determination will be made within 30 calendar days after presentation of additional information or argument (if the application is complete), or within 30 calendar days after the final date specified for the presentation if no presentation is made.

(14) The Administrator (or the State with an approved permit program) may terminate an extension of compliance at an earlier date than specified if any specification under paragraph (i)(10)(iii) or (iv) of this section is not met. Upon a determination to terminate, the Administrator will notify, in writing, the owner or operator of the Administrator's determination to terminate, together with:

(i) Notice of the reason for termination; and

(ii) Notice of opportunity for the owner or operator to present in writing, within 15 calendar days after he/she is notified of the determination to terminate, additional information or arguments to the Administrator before further action on the termination.

(iii) A final determination to terminate an extension of compliance will be in writing and will set forth the specific grounds on which the termination is based. The final determination will be made within 30 calendar days after presentation of additional information or arguments, or within 30 calendar days after the final date specified for the presentation if no presentation is made.

(15) [Reserved]

(16) The granting of an extension under this section shall not abrogate the Administrator's authority under section 114 of the Act.

(j) *Exemption from compliance with emission standards.* The President may exempt any stationary source from compliance with any relevant standard established pursuant to section 112 of the Act for a period of not more than 2 years if the President determines that the technology to implement such standard is not available and that it is in the national security interests of the United States to do so. An exemption under this paragraph may be extended for 1 or more additional periods, each period not to exceed 2 years.

### § 63.7 Performance testing requirements.

(a) *Applicability and performance test dates.*

(1) The applicability of this section is set out in § 63.1(a)(4).

(2) Except as provided in paragraph (a)(4) of this section, if required to do performance testing by a relevant standard, and unless a waiver of performance testing is obtained under this section or the conditions of paragraph (c)(3)(ii)(B) of this section apply, the owner or operator of the affected source must perform such tests within 180 days of the compliance date for such source.

(i)-(viii) [Reserved]

(ix) Except as provided in paragraph (a)(4) of this section, when an emission standard promulgated under this part is more stringent than the standard proposed (see § 63.6(b)(3)), the owner or operator of a new or reconstructed source subject to that standard for which construction or reconstruction is commenced between the proposal and promulgation dates of the standard shall comply with performance testing requirements within 180 days after the standard's effective date, or within 180 days after startup of the source, whichever is later. If the promulgated standard is more stringent than the proposed standard, the owner or operator may choose to demonstrate compliance with either the proposed or the promulgated standard. If the owner or operator chooses to comply with the proposed standard initially, the owner or operator shall conduct a second performance test within 3 years and 180 days after the effective date of the standard, or after startup of the source, whichever is later, to demonstrate compliance with the promulgated standard.

(3) The Administrator may require an owner or operator to conduct performance tests at the affected source at any other time when the action is authorized by section 114 of the Act.

(4) If a force majeure is about to occur, occurs, or has occurred for which the affected owner or operator intends to assert a claim of force majeure:

(i) The owner or operator shall notify the Administrator, in writing as soon as practicable following the date the owner or operator first knew, or through due diligence should have known that the event may cause or caused a delay in testing beyond the regulatory deadline specified in paragraph (a)(2) or (a)(3) of this section, or elsewhere in this part, but the notification must occur before the performance test deadline unless the initial force majeure or a subsequent force majeure event delays the notice, and in such cases, the notification shall occur as soon as practicable.

(ii) The owner or operator shall provide to the Administrator a written description of the force majeure event and a rationale for attributing the delay in testing beyond the regulatory deadline to the force majeure; describe the measures taken or to be taken to minimize the delay; and identify a date by which the owner or operator proposes to conduct the



performance test. The performance test shall be conducted as soon as practicable after the force majeure occurs.

(iii) The decision as to whether or not to grant an extension to the performance test deadline is solely within the discretion of the Administrator. The Administrator will notify the owner or operator in writing of approval or disapproval of the request for an extension as soon as practicable.

(iv) Until an extension of the performance test deadline has been approved by the Administrator under paragraphs (a)(4)(i), (a)(4)(ii), and (a)(4)(iii) of this section, the owner or operator of the affected facility remains strictly subject to the requirements of this part.

*(b) Notification of performance test.*

(1) The owner or operator of an affected source must notify the Administrator in writing of his or her intention to conduct a performance test at least 60 calendar days before the performance test is initially scheduled to begin to allow the Administrator, upon request, to review and approve the site-specific test plan required under paragraph (c) of this section and to have an observer present during the test.

(2) In the event the owner or operator is unable to conduct the performance test on the date specified in the notification requirement specified in paragraph (b)(1) of this section due to unforeseeable circumstances beyond his or her control, the owner or operator must notify the Administrator as soon as practicable and without delay prior to the scheduled performance test date and specify the date when the performance test is rescheduled. This notification of delay in conducting the performance test shall not relieve the owner or operator of legal responsibility for compliance with any other applicable provisions of this part or with any other applicable Federal, State, or local requirement, nor will it prevent the Administrator from implementing or enforcing this part or taking any other action under the Act.

*(c) Quality assurance program.*

(1) The results of the quality assurance program required in this paragraph will be considered by the Administrator when he/she determines the validity of a performance test.

(2) (i) *Submission of site-specific test plan.* Before conducting a required performance test, the owner or operator of an affected source shall develop and, if requested by the Administrator, shall submit a site-specific test plan to the Administrator for approval. The test plan shall include a test program summary, the test schedule, data quality objectives, and both an internal and external quality assurance (QA) program. Data quality objectives are the pretest expectations of precision, accuracy, and completeness of data.

(ii) The internal QA program shall include, at a minimum, the activities planned by routine operators and analysts to provide an assessment of test data precision; an example of internal QA is the sampling and analysis of replicate samples.

(iii) The performance testing shall include a test method performance audit (PA) during the performance test. The PAs consist of blind audit samples supplied by an accredited audit sample provider and analyzed during the performance test in order to provide a measure of test data bias. Gaseous audit samples are designed to audit the performance of the sampling system as well as the analytical system and must be collected by the sampling system during

the compliance test just as the compliance samples are collected. If a liquid or solid audit sample is designed to audit the sampling system, it must also be collected by the sampling system during the compliance test. If multiple sampling systems or sampling trains are used during the compliance test for any of the test methods, the tester is only required to use one of the sampling systems per method to collect the audit sample. The audit sample must be analyzed by the same analyst using the same analytical reagents and analytical system and at the same time as the compliance samples. Retests are required when there is a failure to produce acceptable results for an audit sample. However, if the audit results do not affect the compliance or noncompliance status of the affected facility, the compliance authority may waive the reanalysis requirement, further audits, or retests and accept the results of the compliance test. Acceptance of the test results shall constitute a waiver of the reanalysis requirement, further audits, or retests. The compliance authority may also use the audit sample failure and the compliance test results as evidence to determine the compliance or noncompliance status of the affected facility. A blind audit sample is a sample whose value is known only to the sample provider and is not revealed to the tested facility until after they report the measured value of the audit sample. For pollutants that exist in the gas phase at ambient temperature, the audit sample shall consist of an appropriate concentration of the pollutant in air or nitrogen that can be introduced into the sampling system of the test method at or near the same entry point as a sample from the emission source. If no gas phase audit samples are available, an acceptable alternative is a sample of the pollutant in the same matrix that would be produced when the sample is recovered from the sampling system as required by the test method. For samples that exist only in a liquid or solid form at ambient temperature, the audit sample shall consist of an appropriate concentration of the pollutant in the same matrix that would be produced when the sample is recovered from the sampling system as required by the test method. An accredited audit sample provider (AASP) is an organization that has been accredited to prepare audit samples by an independent, third party accrediting body.

(A) The source owner, operator, or representative of the tested facility shall obtain an audit sample, if commercially available, from an AASP for each test method used for regulatory compliance purposes. No audit samples are required for the following test methods: Methods 3A and 3C of appendix A-3 of part 60 of this chapter; Methods 6C, 7E, 9, and 10 of appendix A-4 of part 60; Methods 18 and 19 of appendix A-6 of part 60; Methods 20, 22, and 25A of appendix A-7 of part 60; Methods 30A and 30B of appendix A-8 of part 60; and Methods 303, 318, 320, and 321 of appendix A of this part. If multiple sources at a single facility are tested during a compliance test event, only one audit sample is required for each method used during a compliance test. The compliance authority responsible for the compliance test may waive the requirement to include an audit sample if they believe that an audit sample is not necessary. "Commercially available" means that two or more independent AASPs have blind audit samples available for purchase. If the source owner, operator, or representative cannot find an audit sample for a specific method, the owner, operator, or representative shall consult the EPA Web site at the following URL, [www.epa.gov/ttn/emc](http://www.epa.gov/ttn/emc), to confirm whether there is a source that can supply an audit sample for that method. If the EPA Web site does not list an available audit sample at least 60 days prior to the beginning of the compliance test, the source owner, operator, or representative shall not be required

to include an audit sample as part of the quality assurance program for the compliance test. When ordering an audit sample, the source owner, operator, or representative shall give the sample provider an estimate for the concentration of each pollutant that is emitted by the source or the estimated concentration of each pollutant based on the permitted level and the name, address, and phone number of the compliance authority. The source owner, operator, or representative shall report the results for the audit sample along with a summary of the emission test results for the audited pollutant to the compliance authority and shall report the results of the audit sample to the AASP. The source owner, operator, or representative shall make both reports at the same time and in the same manner or shall report to the compliance authority first and then report to the AASP. If the method being audited is a method that allows the samples to be analyzed in the field and the tester plans to analyze the samples in the field, the tester may analyze the audit samples prior to collecting the emission samples provided a representative of the compliance authority is present at the testing site. The tester may request, and the compliance authority may grant, a waiver to the requirement that a representative of the compliance authority must be present at the testing site during the field analysis of an audit sample. The source owner, operator, or representative may report the results of the audit sample to the compliance authority and then report the results of the audit sample to the AASP prior to collecting any emission samples. The test protocol and final test report shall document whether an audit sample was ordered and utilized and the pass/fail results as applicable.

(B) An AASP shall have and shall prepare, analyze, and report the true value of audit samples in accordance with a written technical criteria document that describes how audit samples will be prepared and distributed in a manner that will ensure the integrity of the audit sample program. An acceptable technical criteria document shall contain standard operating procedures for all of the following operations:

- (1) Preparing the sample;
- (2) Confirming the true concentration of the sample;
- (3) Defining the acceptance limits for the results from a well qualified tester. This procedure must use well established statistical methods to analyze historical results from well qualified testers. The acceptance limits shall be set so that there is 95 percent confidence that 90 percent of well qualified labs will produce future results that are within the acceptance limit range;
- (4) Providing the opportunity for the compliance authority to comment on the selected concentration level for an audit sample;
- (5) Distributing the sample to the user in a manner that guarantees that the true value of the sample is unknown to the user;
- (6) Recording the measured concentration reported by the user and determining if the measured value is within acceptable limits;
- (7) Reporting the results from each audit sample in a timely manner to the compliance authority and to the source owner, operator, or representative by the AASP. The AASP shall make both reports at the same time and in the same manner or shall report to the compliance authority first and then report to the source owner, operator, or representative. The results shall include the name of the facility tested,

the date on which the compliance test was conducted, the name of the company performing the sample collection, the name of the company that analyzed the compliance samples including the audit sample, the measured result for the audit sample, and whether the testing company passed or failed the audit. The AASP shall report the true value of the audit sample to the compliance authority. The AASP may report the true value to the source owner, operator, or representative if the AASP's operating plan ensures that no laboratory will receive the same audit sample twice.

(8) Evaluating the acceptance limits of samples at least once every two years to determine in consultation with the voluntary consensus standard body if they should be changed.

(9) Maintaining a database, accessible to the compliance authorities, of results from the audit that shall include the name of the facility tested, the date on which the compliance test was conducted, the name of the company performing the sample collection, the name of the company that analyzed the compliance samples including the audit sample, the measured result for the audit sample, the true value of the audit sample, the acceptance range for the measured value, and whether the testing company passed or failed the audit.

(C) The accrediting body shall have a written technical criteria document that describes how it will ensure that the AASP is operating in accordance with the AASP technical criteria document that describes how audit samples are to be prepared and distributed. This document shall contain standard operating procedures for all of the following operations:

(1) Checking audit samples to confirm their true value as reported by the AASP.

(2) Performing technical systems audits of the AASP's facilities and operating procedures at least once every two years.

(3) Providing standards for use by the voluntary consensus standard body to approve the accrediting body that will accredit the audit sample providers.

(D) The technical criteria documents for the accredited sample providers and the accrediting body shall be developed through a public process guided by a voluntary consensus standards body (VCSB). The VCSB shall operate in accordance with the procedures and requirements in the Office of Management and Budget *Circular A-119*. A copy of Circular A-119 is available upon request by writing the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW., Washington, DC 20503, by calling (202) 395-6880 or downloading online at [http://standards.gov/standards\\_gov/a119.cfm](http://standards.gov/standards_gov/a119.cfm). The VCSB shall approve all accrediting bodies. The Administrator will review all technical criteria documents. If the technical criteria documents do not meet the minimum technical requirements in paragraphs (c)(2)(iii)(B) through (C) of this section, the technical criteria documents are not acceptable and the proposed audit sample program is not capable of producing audit samples of sufficient quality to be used in a compliance test. All acceptable technical criteria documents shall be posted on the EPA Web site at the following URL, <http://www.epa.gov/ttn/emc>.

(iv) The owner or operator of an affected source shall submit the site-specific test plan to the Administrator upon the Administrator's request at least 60 calendar days before the performance test is scheduled to take place, that is, simultaneously with the notification of

intention to conduct a performance test required under paragraph (b) of this section, or on a mutually agreed upon date.

(v) The Administrator may request additional relevant information after the submittal of a site-specific test plan.

*(3) Approval of site-specific test plan.*

(i) The Administrator will notify the owner or operator of approval or intention to deny approval of the site-specific test plan (if review of the site-specific test plan is requested) within 30 calendar days after receipt of the original plan and within 30 calendar days after receipt of any supplementary information that is submitted under paragraph (c)(3)(i)(B) of this section. Before disapproving any site-specific test plan, the Administrator will notify the applicant of the Administrator's intention to disapprove the plan together with -

(A) Notice of the information and findings on which the intended disapproval is based; and

(B) Notice of opportunity for the owner or operator to present, within 30 calendar days after he/she is notified of the intended disapproval, additional information to the Administrator before final action on the plan.

(ii) In the event that the Administrator fails to approve or disapprove the site-specific test plan within the time period specified in paragraph (c)(3)(i) of this section, the following conditions shall apply:

(A) If the owner or operator intends to demonstrate compliance using the test method(s) specified in the relevant standard or with only minor changes to those tests methods (see paragraph (e)(2)(i) of this section), the owner or operator must conduct the performance test within the time specified in this section using the specified method(s);

(B) If the owner or operator intends to demonstrate compliance by using an alternative to any test method specified in the relevant standard, the owner or operator is authorized to conduct the performance test using an alternative test method after the Administrator approves the use of the alternative method when the Administrator approves the site-specific test plan (if review of the site-specific test plan is requested) or after the alternative method is approved (see paragraph (f) of this section). However, the owner or operator is authorized to conduct the performance test using an alternative method in the absence of notification of approval 45 days after submission of the site-specific test plan or request to use an alternative method. The owner or operator is authorized to conduct the performance test within 60 calendar days after he/she is authorized to demonstrate compliance using an alternative test method. Notwithstanding the requirements in the preceding three sentences, the owner or operator may proceed to conduct the performance test as required in this section (without the Administrator's prior approval of the site-specific test plan) if he/she subsequently chooses to use the specified testing and monitoring methods instead of an alternative.

(iii) Neither the submission of a site-specific test plan for approval, nor the Administrator's approval or disapproval of a plan, nor the Administrator's failure to approve or disapprove a plan in a timely manner shall -

(A) Relieve an owner or operator of legal responsibility for compliance with any applicable provisions of this part or with any other applicable Federal, State, or local requirement; or

(B) Prevent the Administrator from implementing or enforcing this part or taking any other action under the Act.

(d) *Performance testing facilities.* If required to do performance testing, the owner or operator of each new source and, at the request of the Administrator, the owner or operator of each existing source, shall provide performance testing facilities as follows:

(1) Sampling ports adequate for test methods applicable to such source. This includes:

(i) Constructing the air pollution control system such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and procedures; and

(ii) Providing a stack or duct free of cyclonic flow during performance tests, as demonstrated by applicable test methods and procedures;

(2) Safe sampling platform(s);

(3) Safe access to sampling platform(s);

(4) Utilities for sampling and testing equipment; and

(5) Any other facilities that the Administrator deems necessary for safe and adequate testing of a source.

(e) *Conduct of performance tests.*

(1) Performance tests shall be conducted under such conditions as the Administrator specifies to the owner or operator based on representative performance (i.e., performance based on normal operating conditions) of the affected source. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test, nor shall emissions in excess of the level of the relevant standard during periods of startup, shutdown, and malfunction be considered a violation of the relevant standard unless otherwise specified in the relevant standard or a determination of noncompliance is made under § 63.6(e). Upon request, the owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

(2) Performance tests shall be conducted and data shall be reduced in accordance with the test methods and procedures set forth in this section, in each relevant standard, and, if required, in applicable appendices of parts 51, 60, 61, and 63 of this chapter unless the Administrator -

(i) Specifies or approves, in specific cases, the use of a test method with minor changes in methodology (see definition in § 63.90(a)). Such changes may be approved in conjunction with approval of the site-specific test plan (see paragraph (c) of this section); or

- (ii) Approves the use of an intermediate or major change or alternative to a test method (see definitions in § 63.90(a)), the results of which the Administrator has determined to be adequate for indicating whether a specific affected source is in compliance; or
- (iii) Approves shorter sampling times or smaller sample volumes when necessitated by process variables or other factors; or
- (iv) Waives the requirement for performance tests because the owner or operator of an affected source has demonstrated by other means to the Administrator's satisfaction that the affected source is in compliance with the relevant standard.

(3) Unless otherwise specified in a relevant standard or test method, each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the relevant standard. For the purpose of determining compliance with a relevant standard, the arithmetic mean of the results of the three runs shall apply. Upon receiving approval from the Administrator, results of a test run may be replaced with results of an additional test run in the event that -

- (i) A sample is accidentally lost after the testing team leaves the site; or
- (ii) Conditions occur in which one of the three runs must be discontinued because of forced shutdown; or
- (iii) Extreme meteorological conditions occur; or
- (iv) Other circumstances occur that are beyond the owner or operator's control.

(4) Nothing in paragraphs (e)(1) through (e)(3) of this section shall be construed to abrogate the Administrator's authority to require testing under section 114 of the Act.

(f) *Use of an alternative test method -*

(1) *General.* Until authorized to use an intermediate or major change or alternative to a test method, the owner or operator of an affected source remains subject to the requirements of this section and the relevant standard.

(2) The owner or operator of an affected source required to do performance testing by a relevant standard may use an alternative test method from that specified in the standard provided that the owner or operator -

- (i) Notifies the Administrator of his or her intention to use an alternative test method at least 60 days before the performance test is scheduled to begin;
- (ii) Uses Method 301 in appendix A of this part to validate the alternative test method. This may include the use of specific procedures of Method 301 if use of such procedures are sufficient to validate the alternative test method; and
- (iii) Submits the results of the Method 301 validation process along with the notification of intention and the justification for not using the specified test method. The owner or operator may submit the information required in this paragraph well in advance of the deadline specified in paragraph (f)(2)(i) of this section to ensure a timely review by the Administrator in order to meet the performance test date specified in this section or the relevant standard.

(3) The Administrator will determine whether the owner or operator's validation of the proposed alternative test method is adequate and issue an approval or disapproval of the alternative test method. If the owner or operator intends to demonstrate compliance by using an alternative to any test method specified in the relevant standard, the owner or operator is authorized to conduct the performance test using an alternative test method after the Administrator approves the use of the alternative method. However, the owner or operator is authorized to conduct the performance test using an alternative method in the absence of notification of approval/disapproval 45 days after submission of the request to use an alternative method and the request satisfies the requirements in paragraph (f)(2) of this section. The owner or operator is authorized to conduct the performance test within 60 calendar days after he/she is authorized to demonstrate compliance using an alternative test method. Notwithstanding the requirements in the preceding three sentences, the owner or operator may proceed to conduct the performance test as required in this section (without the Administrator's prior approval of the site-specific test plan) if he/she subsequently chooses to use the specified testing and monitoring methods instead of an alternative.

(4) If the Administrator finds reasonable grounds to dispute the results obtained by an alternative test method for the purposes of demonstrating compliance with a relevant standard, the Administrator may require the use of a test method specified in a relevant standard.

(5) If the owner or operator uses an alternative test method for an affected source during a required performance test, the owner or operator of such source shall continue to use the alternative test method for subsequent performance tests at that affected source until he or she receives approval from the Administrator to use another test method as allowed under § 63.7(f).

(6) Neither the validation and approval process nor the failure to validate an alternative test method shall abrogate the owner or operator's responsibility to comply with the requirements of this part.

*(g) Data analysis, recordkeeping, and reporting.*

(1) Unless otherwise specified in a relevant standard or test method, or as otherwise approved by the Administrator in writing, results of a performance test shall include the analysis of samples, determination of emissions, and raw data. A performance test is "completed" when field sample collection is terminated. The owner or operator of an affected source shall report the results of the performance test to the Administrator before the close of business on the 60th day following the completion of the performance test, unless specified otherwise in a relevant standard or as approved otherwise in writing by the Administrator (see § 63.9(i)). The results of the performance test shall be submitted as part of the notification of compliance status required under § 63.9(h). Before a title V permit has been issued to the owner or operator of an affected source, the owner or operator shall send the results of the performance test to the Administrator. After a title V permit has been issued to the owner or operator of an affected source, the owner or operator shall send the results of the performance test to the appropriate permitting authority.

(2) Contents of a performance test, CMS performance evaluation, or CMS quality assurance test report (electronic or paper submitted copy). Unless otherwise specified in a relevant standard, test method, CMS performance specification, or quality assurance requirement for a CMS, or as otherwise approved by the Administrator in writing, the report shall include the elements identified in paragraphs (g)(2)(i) through (vi) of this section.



(i) General identification information for the facility including a mailing address, the physical address, the owner or operator or responsible official (where applicable) and his/her email address, and the appropriate Federal Registry System (FRS) number for the facility.

(ii) Purpose of the test including the applicable regulation requiring the test, the pollutant(s) and other parameters being measured, the applicable emission standard, and any process parameter component, and a brief process description.

(iii) Description of the emission unit tested including fuel burned, control devices, and vent characteristics; the appropriate source classification code (SCC); the permitted maximum process rate (where applicable); and the sampling location.

(iv) Description of sampling and analysis procedures used and any modifications to standard procedures, quality assurance procedures and results, record of process operating conditions that demonstrate the applicable test conditions are met, and values for any operating parameters for which limits were being set during the test.

(v) Where a test method, CEMS, PEMS, or COMS performance specification, or on-going quality assurance requirement for a CEMS, PEMS, or COMS requires you record or report, the following shall be included in your report: Record of preparation of standards, record of calibrations, raw data sheets for field sampling, raw data sheets for field and laboratory analyses, chain-of-custody documentation, and example calculations for reported results.

(vi) Identification of the company conducting the performance test including the primary office address, telephone number, and the contact for this test including his/her email address.

(3) For a minimum of 5 years after a performance test is conducted, the owner or operator shall retain and make available, upon request, for inspection by the Administrator the records or results of such performance test and other data needed to determine emissions from an affected source.

*(h) Waiver of performance tests.*

(1) Until a waiver of a performance testing requirement has been granted by the Administrator under this paragraph, the owner or operator of an affected source remains subject to the requirements of this section.

(2) Individual performance tests may be waived upon written application to the Administrator if, in the Administrator's judgment, the source is meeting the relevant standard(s) on a continuous basis, or the source is being operated under an extension of compliance, or the owner or operator has requested an extension of compliance and the Administrator is still considering that request.

*(3) Request to waive a performance test.*

(i) If a request is made for an extension of compliance under § 63.6(i), the application for a waiver of an initial performance test shall accompany the information required for the request for an extension of compliance. If no extension of compliance is requested or if the owner or operator has requested an extension of compliance and the Administrator is still considering that request, the application for a waiver of an initial performance test shall be submitted at least 60 days before the performance test if the site-specific test plan under paragraph (c) of this section is not submitted.

(ii) If an application for a waiver of a subsequent performance test is made, the application may accompany any required compliance progress report, compliance status report, or excess emissions and continuous monitoring system performance report [such as those required under § 63.6(i), § 63.9(h), and § 63.10(e) or specified in a relevant standard or in the source's title V permit], but it shall be submitted at least 60 days before the performance test if the site-specific test plan required under paragraph (c) of this section is not submitted.

(iii) Any application for a waiver of a performance test shall include information justifying the owner or operator's request for a waiver, such as the technical or economic infeasibility, or the impracticality, of the affected source performing the required test.

(4) *Approval of request to waive performance test.* The Administrator will approve or deny a request for a waiver of a performance test made under paragraph (h)(3) of this section when he/she -

(i) Approves or denies an extension of compliance under § 63.6(i)(8); or

(ii) Approves or disapproves a site-specific test plan under § 63.7(c)(3); or

(iii) Makes a determination of compliance following the submission of a required compliance status report or excess emissions and continuous monitoring systems performance report; or

(iv) Makes a determination of suitable progress towards compliance following the submission of a compliance progress report, whichever is applicable.

(5) Approval of any waiver granted under this section shall not abrogate the Administrator's authority under the Act or in any way prohibit the Administrator from later canceling the waiver. The cancellation will be made only after notice is given to the owner or operator of the affected source.

### **§ 63.8 Monitoring requirements.**

#### *(a) Applicability.*

(1) The applicability of this section is set out in § 63.1(a)(4).

(2) For the purposes of this part, all CMS required under relevant standards shall be subject to the provisions of this section upon promulgation of performance specifications for CMS as specified in the relevant standard or otherwise by the Administrator.

(3) [Reserved]

(4) Additional monitoring requirements for control devices used to comply with provisions in relevant standards of this part are specified in § 63.11.

#### *(b) Conduct of monitoring.*

(1) Monitoring shall be conducted as set forth in this section and the relevant standard(s) unless the Administrator -

(i) Specifies or approves the use of minor changes in methodology for the specified monitoring requirements and procedures (see § 63.90(a) for definition); or

(ii) Approves the use of an intermediate or major change or alternative to any monitoring requirements or procedures (see § 63.90(a) for definition).

(iii) Owners or operators with flares subject to § 63.11(b) are not subject to the requirements of this section unless otherwise specified in the relevant standard.

(2) (i) When the emissions from two or more affected sources are combined before being released to the atmosphere, the owner or operator may install an applicable CMS for each emission stream or for the combined emissions streams, provided the monitoring is sufficient to demonstrate compliance with the relevant standard.

(ii) If the relevant standard is a mass emission standard and the emissions from one affected source are released to the atmosphere through more than one point, the owner or operator must install an applicable CMS at each emission point unless the installation of fewer systems is

(A) Approved by the Administrator; or

(B) Provided for in a relevant standard (e.g., instead of requiring that a CMS be installed at each emission point before the effluents from those points are channeled to a common control device, the standard specifies that only one CMS is required to be installed at the vent of the control device).

(3) When more than one CMS is used to measure the emissions from one affected source (e.g., multiple breechings, multiple outlets), the owner or operator shall report the results as required for each CMS. However, when one CMS is used as a backup to another CMS, the owner or operator shall report the results from the CMS used to meet the monitoring requirements of this part. If both such CMS are used during a particular reporting period to meet the monitoring requirements of this part, then the owner or operator shall report the results from each CMS for the relevant compliance period.

(c) *Operation and maintenance of continuous monitoring systems.*

(1) The owner or operator of an affected source shall maintain and operate each CMS as specified in this section, or in a relevant standard, and in a manner consistent with good air pollution control practices.

(i) The owner or operator of an affected source must maintain and operate each CMS as specified in § 63.6(e)(1).

(ii) The owner or operator must keep the necessary parts for routine repairs of the affected CMS equipment readily available.

(iii) The owner or operator of an affected source must develop a written startup, shutdown, and malfunction plan for CMS as specified in § 63.6(e)(3).

(2) (i) All CMS must be installed such that representative measures of emissions or process parameters from the affected source are obtained. In addition, CEMS must be located according to procedures contained in the applicable performance specification(s).

(ii) Unless the individual subpart states otherwise, the owner or operator must ensure the read out (that portion of the CMS that provides a visual display or record), or other indication of operation, from any CMS required for compliance with the emission standard is readily accessible on site for operational control or inspection by the operator of the equipment.

(3) All CMS shall be installed, operational, and the data verified as specified in the relevant standard either prior to or in conjunction with conducting performance tests under § 63.7. Verification of

operational status shall, at a minimum, include completion of the manufacturer's written specifications or recommendations for installation, operation, and calibration of the system.

(4) Except for system breakdowns, out-of-control periods, repairs, maintenance periods, calibration checks, and zero (low-level) and high-level calibration drift adjustments, all CMS, including COMS and CEMS, shall be in continuous operation and shall meet minimum frequency of operation requirements as follows:

(i) All COMS shall complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period.

(ii) All CEMS for measuring emissions other than opacity shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.

(5) Unless otherwise approved by the Administrator, minimum procedures for COMS shall include a method for producing a simulated zero opacity condition and an upscale (high-level) opacity condition using a certified neutral density filter or other related technique to produce a known obscuration of the light beam. Such procedures shall provide a system check of all the analyzer's internal optical surfaces and all electronic circuitry, including the lamp and photodetector assembly normally used in the measurement of opacity.

(6) The owner or operator of a CMS that is not a CPMS, which is installed in accordance with the provisions of this part and the applicable CMS performance specification(s), must check the zero (low-level) and high-level calibration drifts at least once daily in accordance with the written procedure specified in the performance evaluation plan developed under paragraphs (e)(3)(i) and (ii) of this section. The zero (low-level) and high-level calibration drifts must be adjusted, at a minimum, whenever the 24-hour zero (low-level) drift exceeds two times the limits of the applicable performance specification(s) specified in the relevant standard. The system shall allow the amount of excess zero (low-level) and high-level drift measured at the 24-hour interval checks to be recorded and quantified whenever specified. For COMS, all optical and instrumental surfaces exposed to the effluent gases must be cleaned prior to performing the zero (low-level) and high-level drift adjustments; the optical surfaces and instrumental surfaces must be cleaned when the cumulative automatic zero compensation, if applicable, exceeds 4 percent opacity. The CPMS must be calibrated prior to use for the purposes of complying with this section. The CPMS must be checked daily for indication that the system is responding. If the CPMS system includes an internal system check, results must be recorded and checked daily for proper operation.

(7) (i) A CMS is out of control if -

(A) The zero (low-level), mid-level (if applicable), or high-level calibration drift (CD) exceeds two times the applicable CD specification in the applicable performance specification or in the relevant standard; or

(B) The CMS fails a performance test audit (e.g., cylinder gas audit), relative accuracy audit, relative accuracy test audit, or linearity test audit; or

(C) The COMS CD exceeds two times the limit in the applicable performance specification in the relevant standard.

(ii) When the CMS is out of control, the owner or operator of the affected source shall take the necessary corrective action and shall repeat all necessary tests which indicate that the system is out of control. The owner or operator shall take corrective action and conduct retesting until the performance requirements are below the applicable limits. The beginning of the out-of-control period is the hour the owner or operator conducts a performance check (e.g., calibration drift) that indicates an exceedance of the performance requirements established under this part. The end of the out-of-control period is the hour following the completion of corrective action and successful demonstration that the system is within the allowable limits. During the period the CMS is out of control, recorded data shall not be used in data averages and calculations, or to meet any data availability requirement established under this part.

(8) The owner or operator of a CMS that is out of control as defined in paragraph (c)(7) of this section shall submit all information concerning out-of-control periods, including start and end dates and hours and descriptions of corrective actions taken, in the excess emissions and continuous monitoring system performance report required in § 63.10(e)(3).

(d) *Quality control program.*

(1) The results of the quality control program required in this paragraph will be considered by the Administrator when he/she determines the validity of monitoring data.

(2) The owner or operator of an affected source that is required to use a CMS and is subject to the monitoring requirements of this section and a relevant standard shall develop and implement a CMS quality control program. As part of the quality control program, the owner or operator shall develop and submit to the Administrator for approval upon request a site-specific performance evaluation test plan for the CMS performance evaluation required in paragraph (e)(3)(i) of this section, according to the procedures specified in paragraph (e). In addition, each quality control program shall include, at a minimum, a written protocol that describes procedures for each of the following operations:

- (i) Initial and any subsequent calibration of the CMS;
- (ii) Determination and adjustment of the calibration drift of the CMS;
- (iii) Preventive maintenance of the CMS, including spare parts inventory;
- (iv) Data recording, calculations, and reporting;
- (v) Accuracy audit procedures, including sampling and analysis methods; and
- (vi) Program of corrective action for a malfunctioning CMS.

(3) The owner or operator shall keep these written procedures on record for the life of the affected source or until the affected source is no longer subject to the provisions of this part, to be made available for inspection, upon request, by the Administrator. If the performance evaluation plan is revised, the owner or operator shall keep previous (i.e., superseded) versions of the performance evaluation plan on record to be made available for inspection, upon request, by the Administrator, for a period of 5 years after each revision to the plan. Where relevant, e.g., program of corrective action for a malfunctioning CMS, these written procedures may be incorporated as part of the affected source's startup, shutdown, and malfunction plan to avoid duplication of planning and recordkeeping efforts.

(e) *Performance evaluation of continuous monitoring systems -*

(1) *General*. When required by a relevant standard, and at any other time the Administrator may require under section 114 of the Act, the owner or operator of an affected source being monitored shall conduct a performance evaluation of the CMS. Such performance evaluation shall be conducted according to the applicable specifications and procedures described in this section or in the relevant standard.

(2) *Notification of performance evaluation*. The owner or operator shall notify the Administrator in writing of the date of the performance evaluation simultaneously with the notification of the performance test date required under § 63.7(b) or at least 60 days prior to the date the performance evaluation is scheduled to begin if no performance test is required.

(3) (i) *Submission of site-specific performance evaluation test plan*. Before conducting a required CMS performance evaluation, the owner or operator of an affected source shall develop and submit a site-specific performance evaluation test plan to the Administrator for approval upon request. The performance evaluation test plan shall include the evaluation program objectives, an evaluation program summary, the performance evaluation schedule, data quality objectives, and both an internal and external QA program. Data quality objectives are the pre-evaluation expectations of precision, accuracy, and completeness of data.

(ii) The internal QA program shall include, at a minimum, the activities planned by routine operators and analysts to provide an assessment of CMS performance. The external QA program shall include, at a minimum, systems audits that include the opportunity for on-site evaluation by the Administrator of instrument calibration, data validation, sample logging, and documentation of quality control data and field maintenance activities.

(iii) The owner or operator of an affected source shall submit the site-specific performance evaluation test plan to the Administrator (if requested) at least 60 days before the performance test or performance evaluation is scheduled to begin, or on a mutually agreed upon date, and review and approval of the performance evaluation test plan by the Administrator will occur with the review and approval of the site-specific test plan (if review of the site-specific test plan is requested).

(iv) The Administrator may request additional relevant information after the submittal of a site-specific performance evaluation test plan.

(v) In the event that the Administrator fails to approve or disapprove the site-specific performance evaluation test plan within the time period specified in § 63.7(c)(3), the following conditions shall apply:

(A) If the owner or operator intends to demonstrate compliance using the monitoring method(s) specified in the relevant standard, the owner or operator shall conduct the performance evaluation within the time specified in this subpart using the specified method(s);

(B) If the owner or operator intends to demonstrate compliance by using an alternative to a monitoring method specified in the relevant standard, the owner or operator shall refrain from conducting the performance evaluation until the Administrator approves the use of the alternative method. If the Administrator does not approve the use of the alternative method within 30 days before the performance evaluation is scheduled to begin, the performance evaluation deadlines specified in paragraph (e)(4) of this section

may be extended such that the owner or operator shall conduct the performance evaluation within 60 calendar days after the Administrator approves the use of the alternative method. Notwithstanding the requirements in the preceding two sentences, the owner or operator may proceed to conduct the performance evaluation as required in this section (without the Administrator's prior approval of the site-specific performance evaluation test plan) if he/she subsequently chooses to use the specified monitoring method(s) instead of an alternative.

(vi) Neither the submission of a site-specific performance evaluation test plan for approval, nor the Administrator's approval or disapproval of a plan, nor the Administrator's failure to approve or disapprove a plan in a timely manner shall -

(A) Relieve an owner or operator of legal responsibility for compliance with any applicable provisions of this part or with any other applicable Federal, State, or local requirement; or

(B) Prevent the Administrator from implementing or enforcing this part or taking any other action under the Act.

(4) *Conduct of performance evaluation and performance evaluation dates.* The owner or operator of an affected source shall conduct a performance evaluation of a required CMS during any performance test required under § 63.7 in accordance with the applicable performance specification as specified in the relevant standard. Notwithstanding the requirement in the previous sentence, if the owner or operator of an affected source elects to submit COMS data for compliance with a relevant opacity emission standard as provided under § 63.6(h)(7), he/she shall conduct a performance evaluation of the COMS as specified in the relevant standard, before the performance test required under § 63.7 is conducted in time to submit the results of the performance evaluation as specified in paragraph (e)(5)(ii) of this section. If a performance test is not required, or the requirement for a performance test has been waived under § 63.7(h), the owner or operator of an affected source shall conduct the performance evaluation not later than 180 days after the appropriate compliance date for the affected source, as specified in § 63.7(a), or as otherwise specified in the relevant standard.

(5) *Reporting performance evaluation results.*

(i) The owner or operator shall furnish the Administrator a copy of a written report of the results of the performance evaluation containing the information specified in § 63.7(g)(2)(i) through (vi) simultaneously with the results of the performance test required under § 63.7 or within 60 days of completion of the performance evaluation, unless otherwise specified in a relevant standard.

(ii) The owner or operator of an affected source using a COMS to determine opacity compliance during any performance test required under § 63.7 and described in § 63.6(d)(6) shall furnish the Administrator two or, upon request, three copies of a written report of the results of the COMS performance evaluation under this paragraph. The copies shall be provided at least 15 calendar days before the performance test required under § 63.7 is conducted.

(f) *Use of an alternative monitoring method -*

(1) *General.* Until permission to use an alternative monitoring procedure (minor, intermediate, or major changes; see definition in § 63.90(a)) has been granted by the Administrator under this

paragraph (f)(1), the owner or operator of an affected source remains subject to the requirements of this section and the relevant standard.

(2) After receipt and consideration of written application, the Administrator may approve alternatives to any monitoring methods or procedures of this part including, but not limited to, the following:

(i) Alternative monitoring requirements when installation of a CMS specified by a relevant standard would not provide accurate measurements due to liquid water or other interferences caused by substances within the effluent gases;

(ii) Alternative monitoring requirements when the affected source is infrequently operated;

(iii) Alternative monitoring requirements to accommodate CEMS that require additional measurements to correct for stack moisture conditions;

(iv) Alternative locations for installing CMS when the owner or operator can demonstrate that installation at alternate locations will enable accurate and representative measurements;

(v) Alternate methods for converting pollutant concentration measurements to units of the relevant standard;

(vi) Alternate procedures for performing daily checks of zero (low-level) and high-level drift that do not involve use of high-level gases or test cells;

(vii) Alternatives to the American Society for Testing and Materials (ASTM) test methods or sampling procedures specified by any relevant standard;

(viii) Alternative CMS that do not meet the design or performance requirements in this part, but adequately demonstrate a definite and consistent relationship between their measurements and the measurements of opacity by a system complying with the requirements as specified in the relevant standard. The Administrator may require that such demonstration be performed for each affected source; or

(ix) Alternative monitoring requirements when the effluent from a single affected source or the combined effluent from two or more affected sources is released to the atmosphere through more than one point.

(3) If the Administrator finds reasonable grounds to dispute the results obtained by an alternative monitoring method, requirement, or procedure, the Administrator may require the use of a method, requirement, or procedure specified in this section or in the relevant standard. If the results of the specified and alternative method, requirement, or procedure do not agree, the results obtained by the specified method, requirement, or procedure shall prevail.

(4) (i) *Request to use alternative monitoring procedure.* An owner or operator who wishes to use an alternative monitoring procedure must submit an application to the Administrator as described in paragraph (f)(4)(ii) of this section. The application may be submitted at any time provided that the monitoring procedure is not the performance test method used to demonstrate compliance with a relevant standard or other requirement. If the alternative monitoring procedure will serve as the performance test method that is to be used to demonstrate compliance with a relevant standard, the application must be submitted at least 60 days before the performance evaluation is scheduled to begin and must meet the requirements for an alternative test method under § 63.7(f).



(ii) The application must contain a description of the proposed alternative monitoring system which addresses the four elements contained in the definition of monitoring in § 63.2 and a performance evaluation test plan, if required, as specified in paragraph (e)(3) of this section. In addition, the application must include information justifying the owner or operator's request for an alternative monitoring method, such as the technical or economic infeasibility, or the impracticality, of the affected source using the required method.

(iii) The owner or operator may submit the information required in this paragraph well in advance of the submittal dates specified in paragraph (f)(4)(i) above to ensure a timely review by the Administrator in order to meet the compliance demonstration date specified in this section or the relevant standard.

(iv) Application for minor changes to monitoring procedures, as specified in paragraph (b)(1) of this section, may be made in the site-specific performance evaluation plan.

*(5) Approval of request to use alternative monitoring procedure.*

(i) The Administrator will notify the owner or operator of approval or intention to deny approval of the request to use an alternative monitoring method within 30 calendar days after receipt of the original request and within 30 calendar days after receipt of any supplementary information that is submitted. If a request for a minor change is made in conjunction with site-specific performance evaluation plan, then approval of the plan will constitute approval of the minor change. Before disapproving any request to use an alternative monitoring method, the Administrator will notify the applicant of the Administrator's intention to disapprove the request together with -

(A) Notice of the information and findings on which the intended disapproval is based; and

(B) Notice of opportunity for the owner or operator to present additional information to the Administrator before final action on the request. At the time the Administrator notifies the applicant of his or her intention to disapprove the request, the Administrator will specify how much time the owner or operator will have after being notified of the intended disapproval to submit the additional information.

(ii) The Administrator may establish general procedures and criteria in a relevant standard to accomplish the requirements of paragraph (f)(5)(i) of this section.

(iii) If the Administrator approves the use of an alternative monitoring method for an affected source under paragraph (f)(5)(i) of this section, the owner or operator of such source shall continue to use the alternative monitoring method until he or she receives approval from the Administrator to use another monitoring method as allowed by § 63.8(f).

*(6) Alternative to the relative accuracy test.* An alternative to the relative accuracy test for CEMS specified in a relevant standard may be requested as follows:

(i) *Criteria for approval of alternative procedures.* An alternative to the test method for determining relative accuracy is available for affected sources with emission rates demonstrated to be less than 50 percent of the relevant standard. The owner or operator of an affected source may petition the Administrator under paragraph (f)(6)(ii) of this section to substitute the relative accuracy test in section 7 of Performance Specification 2 with the

procedures in section 10 if the results of a performance test conducted according to the requirements in § 63.7, or other tests performed following the criteria in § 63.7, demonstrate that the emission rate of the pollutant of interest in the units of the relevant standard is less than 50 percent of the relevant standard. For affected sources subject to emission limitations expressed as control efficiency levels, the owner or operator may petition the Administrator to substitute the relative accuracy test with the procedures in section 10 of Performance Specification 2 if the control device exhaust emission rate is less than 50 percent of the level needed to meet the control efficiency requirement. The alternative procedures do not apply if the CEMS is used continuously to determine compliance with the relevant standard.

(ii) *Petition to use alternative to relative accuracy test.* The petition to use an alternative to the relative accuracy test shall include a detailed description of the procedures to be applied, the location and the procedure for conducting the alternative, the concentration or response levels of the alternative relative accuracy materials, and the other equipment checks included in the alternative procedure(s). The Administrator will review the petition for completeness and applicability. The Administrator's determination to approve an alternative will depend on the intended use of the CEMS data and may require specifications more stringent than in Performance Specification 2.

(iii) *Rescission of approval to use alternative to relative accuracy test.* The Administrator will review the permission to use an alternative to the CEMS relative accuracy test and may rescind such permission if the CEMS data from a successful completion of the alternative relative accuracy procedure indicate that the affected source's emissions are approaching the level of the relevant standard. The criterion for reviewing the permission is that the collection of CEMS data shows that emissions have exceeded 70 percent of the relevant standard for any averaging period, as specified in the relevant standard. For affected sources subject to emission limitations expressed as control efficiency levels, the criterion for reviewing the permission is that the collection of CEMS data shows that exhaust emissions have exceeded 70 percent of the level needed to meet the control efficiency requirement for any averaging period, as specified in the relevant standard. The owner or operator of the affected source shall maintain records and determine the level of emissions relative to the criterion for permission to use an alternative for relative accuracy testing. If this criterion is exceeded, the owner or operator shall notify the Administrator within 10 days of such occurrence and include a description of the nature and cause of the increased emissions. The Administrator will review the notification and may rescind permission to use an alternative and require the owner or operator to conduct a relative accuracy test of the CEMS as specified in section 7 of Performance Specification 2. The Administrator will review the notification and may rescind permission to use an alternative and require the owner or operator to conduct a relative accuracy test of the CEMS as specified in section 8.4 of Performance Specification 2.

(g) *Reduction of monitoring data.*

- (1) The owner or operator of each CMS must reduce the monitoring data as specified in paragraphs (g)(1) through (5) of this section.
- (2) The owner or operator of each COMS shall reduce all data to 6-minute averages calculated from 36 or more data points equally spaced over each 6-minute period. Data from CEMS for measurement other than opacity, unless otherwise specified in the relevant standard, shall be reduced to 1-hour

averages computed from four or more data points equally spaced over each 1-hour period, except during periods when calibration, quality assurance, or maintenance activities pursuant to provisions of this part are being performed. During these periods, a valid hourly average shall consist of at least two data points with each representing a 15-minute period. Alternatively, an arithmetic or integrated 1-hour average of CEMS data may be used. Time periods for averaging are defined in § 63.2.

(3) The data may be recorded in reduced or nonreduced form (e.g., ppm pollutant and percent O<sub>2</sub> or ng/J of pollutant).

(4) All emission data shall be converted into units of the relevant standard for reporting purposes using the conversion procedures specified in that standard. After conversion into units of the relevant standard, the data may be rounded to the same number of significant digits as used in that standard to specify the emission limit (e.g., rounded to the nearest 1 percent opacity).

(5) Monitoring data recorded during periods of unavoidable CMS breakdowns, out-of-control periods, repairs, maintenance periods, calibration checks, and zero (low-level) and high-level adjustments must not be included in any data average computed under this part. For the owner or operator complying with the requirements of § 63.10(b)(2)(vii)(A) or (B), data averages must include any data recorded during periods of monitor breakdown or malfunction.

### § 63.9 Notification requirements.

#### (a) *Applicability and general information.*

(1) The applicability of this section is set out in § 63.1(a)(4).

(2) For affected sources that have been granted an extension of compliance under subpart D of this part, the requirements of this section do not apply to those sources while they are operating under such compliance extensions.

(3) If any State requires a notice that contains all the information required in a notification listed in this section, the owner or operator may send the Administrator a copy of the notice sent to the State to satisfy the requirements of this section for that notification.

(4) (i) Before a State has been delegated the authority to implement and enforce notification requirements established under this part, the owner or operator of an affected source in such State subject to such requirements shall submit notifications to the appropriate Regional Office of the EPA (to the attention of the Director of the Division indicated in the list of the EPA Regional Offices in § 63.13).

(ii) After a State has been delegated the authority to implement and enforce notification requirements established under this part, the owner or operator of an affected source in such State subject to such requirements shall submit notifications to the delegated State authority (which may be the same as the permitting authority). In addition, if the delegated (permitting) authority is the State, the owner or operator shall send a copy of each notification submitted to the State to the appropriate Regional Office of the EPA, as specified in paragraph (a)(4)(i) of this section. The Regional Office may waive this requirement for any notifications at its discretion.

#### (b) *Initial notifications.*

(1) (i) The requirements of this paragraph apply to the owner or operator of an affected source when such source becomes subject to a relevant standard.

(ii) If an area source subsequently becomes a major source that is subject to the emission standard or other requirement, such source shall be subject to the notification requirements of this section. Area sources previously subject to major source requirements that become major sources again are also subject to the notification requirements of this paragraph and must submit the notification according to the requirements of paragraph (k) of this section.

(iii) Affected sources that are required under this paragraph to submit an initial notification may use the application for approval of construction or reconstruction under § 63.5(d) of this subpart, if relevant, to fulfill the initial notification requirements of this paragraph.

(2) The owner or operator of an affected source that has an initial startup before the effective date of a relevant standard under this part shall notify the Administrator in writing that the source is subject to the relevant standard. The notification, which shall be submitted not later than 120 calendar days after the effective date of the relevant standard (or within 120 calendar days after the source becomes subject to the relevant standard), shall provide the following information:

(i) The name and address of the owner or operator;

(ii) The address (i.e., physical location) of the affected source;

(iii) An identification of the relevant standard, or other requirement, that is the basis of the notification and the source's compliance date;

(iv) A brief description of the nature, size, design, and method of operation of the source and an identification of the types of emission points within the affected source subject to the relevant standard and types of hazardous air pollutants emitted; and

(v) A statement of whether the affected source is a major source or an area source.

(3) [Reserved]

(4) The owner or operator of a new or reconstructed major affected source for which an application for approval of construction or reconstruction is required under § 63.5(d) must provide the following information in writing to the Administrator:

(i) A notification of intention to construct a new major-emitting affected source, reconstruct a major-emitting affected source, or reconstruct a major source such that the source becomes a major-emitting affected source with the application for approval of construction or reconstruction as specified in § 63.5(d)(1)(i); and

(ii)-(iv) [Reserved]

(v) A notification of the actual date of startup of the source, delivered or postmarked within 15 calendar days after that date.

(5) The owner or operator of a new or reconstructed affected source for which an application for approval of construction or reconstruction is not required under § 63.5(d) must provide the following information in writing to the Administrator:

(i) A notification of intention to construct a new affected source, reconstruct an affected source, or reconstruct a source such that the source becomes an affected source, and

(ii) A notification of the actual date of startup of the source, delivered or postmarked within 15 calendar days after that date.

(iii) Unless the owner or operator has requested and received prior permission from the Administrator to submit less than the information in § 63.5(d), the notification must include the information required on the application for approval of construction or reconstruction as specified in § 63.5(d)(1)(i).

(c) *Request for extension of compliance.* If the owner or operator of an affected source cannot comply with a relevant standard by the applicable compliance date for that source, or if the owner or operator has installed BACT or technology to meet LAER consistent with § 63.6(i)(5) of this subpart, he/she may submit to the Administrator (or the State with an approved permit program) a request for an extension of compliance as specified in § 63.6(i)(4) through § 63.6(i)(6).

(d) *Notification that source is subject to special compliance requirements.* An owner or operator of a new source that is subject to special compliance requirements as specified in § 63.6(b)(3) and § 63.6(b)(4) shall notify the Administrator of his/her compliance obligations not later than the notification dates established in paragraph (b) of this section for new sources that are not subject to the special provisions.

(e) *Notification of performance test.* The owner or operator of an affected source shall notify the Administrator in writing of his or her intention to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin to allow the Administrator to review and approve the site-specific test plan required under § 63.7(c), if requested by the Administrator, and to have an observer present during the test.

(f) *Notification of opacity and visible emission observations.* The owner or operator of an affected source shall notify the Administrator in writing of the anticipated date for conducting the opacity or visible emission observations specified in § 63.6(h)(5), if such observations are required for the source by a relevant standard. The notification shall be submitted with the notification of the performance test date, as specified in paragraph (e) of this section, or if no performance test is required or visibility or other conditions prevent the opacity or visible emission observations from being conducted concurrently with the initial performance test required under § 63.7, the owner or operator shall deliver or postmark the notification not less than 30 days before the opacity or visible emission observations are scheduled to take place.

(g) *Additional notification requirements for sources with continuous monitoring systems.* The owner or operator of an affected source required to use a CMS by a relevant standard shall furnish the Administrator written notification as follows:

(1) A notification of the date the CMS performance evaluation under § 63.8(e) is scheduled to begin, submitted simultaneously with the notification of the performance test date required under § 63.7(b). If no performance test is required, or if the requirement to conduct a performance test has been waived for an affected source under § 63.7(h), the owner or operator shall notify the Administrator in writing of the date of the performance evaluation at least 60 calendar days before the evaluation is scheduled to begin;

(2) A notification that COMS data results will be used to determine compliance with the applicable opacity emission standard during a performance test required by § 63.7 in lieu of Method 9 or other opacity emissions test method data, as allowed by § 63.6(h)(7)(ii), if compliance with an opacity emission standard is required for the source by a relevant standard. The notification shall be submitted at least 60 calendar days before the performance test is scheduled to begin; and

(3) A notification that the criterion necessary to continue use of an alternative to relative accuracy testing, as provided by § 63.8(f)(6), has been exceeded. The notification shall be delivered or postmarked not later than 10 days after the occurrence of such exceedance, and it shall include a description of the nature and cause of the increased emissions.

(h) *Notification of compliance status.*

(1) The requirements of paragraphs (h)(2) through (h)(4) of this section apply when an affected source becomes subject to a relevant standard.

(2) (i) Before a title V permit has been issued to the owner or operator of an affected source, and each time a notification of compliance status is required under this part, the owner or operator of such source shall submit to the Administrator a notification of compliance status, signed by the responsible official who shall certify its accuracy, attesting to whether the source has complied with the relevant standard. The notification shall list -

(A) The methods that were used to determine compliance;

(B) The results of any performance tests, opacity or visible emission observations, continuous monitoring system (CMS) performance evaluations, and/or other monitoring procedures or methods that were conducted;

(C) The methods that will be used for determining continuing compliance, including a description of monitoring and reporting requirements and test methods;

(D) The type and quantity of hazardous air pollutants emitted by the source (or surrogate pollutants if specified in the relevant standard), reported in units and averaging times and in accordance with the test methods specified in the relevant standard;

(E) If the relevant standard applies to both major and area sources, an analysis demonstrating whether the affected source is a major source (using the emissions data generated for this notification);

(F) A description of the air pollution control equipment (or method) for each emission point, including each control device (or method) for each hazardous air pollutant and the control efficiency (percent) for each control device (or method); and

(G) A statement by the owner or operator of the affected existing, new, or reconstructed source as to whether the source has complied with the relevant standard or other requirements.

(ii) The notification must be sent before the close of business on the 60th day following the completion of the relevant compliance demonstration activity specified in the relevant standard (unless a different reporting period is specified in the standard, in which case the letter must be sent before the close of business on the day the report of the relevant testing or monitoring results is required to be delivered or postmarked). For example, the notification shall be sent before close of business on the 60th (or other required) day following completion of the initial performance test and again before the close of business on the 60th (or other required) day following the completion of any subsequent required performance test. If no performance test is required but opacity or visible emission observations are required to

demonstrate compliance with an opacity or visible emission standard under this part, the notification of compliance status shall be sent before close of business on the 30th day following the completion of opacity or visible emission observations. Notifications may be combined as long as the due date requirement for each notification is met.

(3) After a title V permit has been issued to the owner or operator of an affected source, the owner or operator of such source shall comply with all requirements for compliance status reports contained in the source's title V permit, including reports required under this part. After a title V permit has been issued to the owner or operator of an affected source, and each time a notification of compliance status is required under this part, the owner or operator of such source shall submit the notification of compliance status to the appropriate permitting authority following completion of the relevant compliance demonstration activity specified in the relevant standard.

(4) [Reserved]

(5) If an owner or operator of an affected source submits estimates or preliminary information in the application for approval of construction or reconstruction required in § 63.5(d) in place of the actual emissions data or control efficiencies required in paragraphs (d)(1)(ii)(H) and (d)(2) of § 63.5, the owner or operator shall submit the actual emissions data and other correct information as soon as available but no later than with the initial notification of compliance status required in this section.

(6) Advice on a notification of compliance status may be obtained from the Administrator.

*(i) Adjustment to time periods or postmark deadlines for submittal and review of required communications.*

(1) (i) Until an adjustment of a time period or postmark deadline has been approved by the Administrator under paragraphs (i)(2) and (i)(3) of this section, the owner or operator of an affected source remains strictly subject to the requirements of this part.

(ii) An owner or operator shall request the adjustment provided for in paragraphs (i)(2) and (i)(3) of this section each time he or she wishes to change an applicable time period or postmark deadline specified in this part.

(2) Notwithstanding time periods or postmark deadlines specified in this part for the submittal of information to the Administrator by an owner or operator, or the review of such information by the Administrator, such time periods or deadlines may be changed by mutual agreement between the owner or operator and the Administrator. An owner or operator who wishes to request a change in a time period or postmark deadline for a particular requirement shall request the adjustment in writing as soon as practicable before the subject activity is required to take place. The owner or operator shall include in the request whatever information he or she considers useful to convince the Administrator that an adjustment is warranted.

(3) If, in the Administrator's judgment, an owner or operator's request for an adjustment to a particular time period or postmark deadline is warranted, the Administrator will approve the adjustment. The Administrator will notify the owner or operator in writing of approval or disapproval of the request for an adjustment within 15 calendar days of receiving sufficient information to evaluate the request.

(4) If the Administrator is unable to meet a specified deadline, he or she will notify the owner or operator of any significant delay and inform the owner or operator of the amended schedule.

(j) *Change in information already provided.* Any change in the information already provided under this section shall be provided to the Administrator within 15 calendar days after the change. The owner or operator of a major source that reclassifies to area source status is also subject to the notification requirements of this paragraph. The owner or operator may use the application for reclassification with the regulatory authority (e.g., permit application) to fulfill the requirements of this paragraph. A source which reclassified after January 25, 2018, and before January 19, 2021, and has not yet provided the notification of a change in information is required to provide such notification no later than February 2, 2021, according to the requirements of paragraph (k) of this section. Beginning January 19, 2021, the owner or operator of a major source that reclassifies to area source status must submit the notification according to the requirements of paragraph (k) of this section. A notification of reclassification must contain the following information:

- (1) The name and address of the owner or operator;
- (2) The address (i.e., physical location) of the affected source;
- (3) An identification of the standard being reclassified from and to (if applicable); and
- (4) Date of effectiveness of the reclassification.

(k) *Electronic submission of notifications or reports.* If you are required to submit notifications or reports following the procedure specified in this paragraph (k), you must submit notifications or reports to the EPA via CEDRI, which can be accessed through the EPA's Central Data Exchange (CDX) (<https://cdx.epa.gov/>). The notification or report must be submitted by the deadline specified. The EPA will make all the information submitted through CEDRI available to the public without further notice to you. Do not use CEDRI to submit information you claim as confidential business information (CBI). Anything submitted using CEDRI cannot later be claimed to be CBI. Although we do not expect persons to assert a claim of CBI, if persons wish to assert a CBI, submit a complete notification or report, including information claimed to be CBI, to the EPA. Submit the file on a compact disc, flash drive, or other commonly used electronic storage medium and clearly mark the medium as CBI. Mail the electronic medium to U.S. EPA/OAQPS/CORE CBI Office, Attention: Group Leader, Measurement Policy Group, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same file with the CBI omitted must be submitted to the EPA via the EPA's CDX as described earlier in this paragraph (k). All CBI claims must be asserted at the time of submission. Furthermore, under section 114(c) of the Act emissions data is not entitled to confidential treatment and requires EPA to make emissions data available to the public. Thus, emissions data will not be protected as CBI and will be made publicly available.

- (1) If you are required to electronically submit a notification or report by this paragraph (k) through CEDRI in the EPA's CDX, you may assert a claim of EPA system outage for failure to timely comply with the electronic submittal requirement. To assert a claim of EPA system outage, you must meet the requirements outlined in paragraphs (k)(1)(i) through (vii) of this section.
  - (i) You must have been or will be precluded from accessing CEDRI and submitting a required notification or report within the time prescribed due to an outage of either the EPA's CEDRI or CDX systems.
  - (ii) The outage must have occurred within the period of time beginning 5 business days prior to the date that the notification or report is due.
  - (iii) The outage may be planned or unplanned.



(iv) You must submit notification to the Administrator in writing as soon as possible following the date you first knew, or through due diligence should have known, that the event may cause or has caused a delay in reporting.

(v) You must provide to the Administrator a written description identifying:

(A) The date(s) and time(s) when CDX or CEDRI was accessed and the system was unavailable;

(B) A rationale for attributing the delay in submitting beyond the regulatory deadline to EPA system outage;

(C) Measures taken or to be taken to minimize the delay in submitting; and

(D) The date by which you propose to submit, or if you have already met the electronic submittal requirement in this paragraph (k) at the time of the notification, the date you submitted the notification or report.

(vi) The decision to accept the claim of EPA system outage and allow an extension to the reporting deadline is solely within the discretion of the Administrator.

(vii) In any circumstance, the notification or report must be submitted electronically as soon as possible after the outage is resolved.

(2) If you are required to electronically submit a notification or report by this paragraph (k) through CEDRI in the EPA's CDX, you may assert a claim of force majeure for failure to timely comply with the electronic submittal requirement. To assert a claim of force majeure, you must meet the requirements outlined in paragraphs (k)(2)(i) through (v) of this section.

(i) You may submit a claim if a force majeure event is about to occur, occurs, or has occurred or there are lingering effects from such an event within the period of time beginning five business days prior to the date the submission is due. For the purposes of this section, a force majeure event is defined as an event that will be or has been caused by circumstances beyond the control of the affected facility, its contractors, or any entity controlled by the affected facility that prevents you from complying with the requirement to submit a notification or report electronically within the time period prescribed. Examples of such events are acts of nature (*e.g.*, hurricanes, earthquakes, or floods), acts of war or terrorism, or equipment failure or safety hazard beyond the control of the affected facility (*e.g.*, large scale power outage).

(ii) You must submit notification to the Administrator in writing as soon as possible following the date you first knew, or through due diligence should have known, that the event may cause or has caused a delay in submitting through CEDRI.

(iii) You must provide to the Administrator:

(A) A written description of the force majeure event;

(B) A rationale for attributing the delay in reporting beyond the regulatory deadline to the force majeure event;

(C) Measures taken or to be taken to minimize the delay in reporting; and

(D) The date by which you propose to submit the notification or report, or if you have already met the electronic submittal requirement in this paragraph (k) at the time of the notification, the date you submitted the notification or report.

(iv) The decision to accept the claim of force majeure and allow an extension to the submittal deadline is solely within the discretion of the Administrator.

(v) In any circumstance, the reporting must occur as soon as possible after the force majeure event occurs.

### **§ 63.10 Recordkeeping and reporting requirements.**

#### *(a) Applicability and general information.*

(1) The applicability of this section is set out in § 63.1(a)(4).

(2) For affected sources that have been granted an extension of compliance under subpart D of this part, the requirements of this section do not apply to those sources while they are operating under such compliance extensions.

(3) If any State requires a report that contains all the information required in a report listed in this section, an owner or operator may send the Administrator a copy of the report sent to the State to satisfy the requirements of this section for that report.

(4) (i) Before a State has been delegated the authority to implement and enforce recordkeeping and reporting requirements established under this part, the owner or operator of an affected source in such State subject to such requirements shall submit reports to the appropriate Regional Office of the EPA (to the attention of the Director of the Division indicated in the list of the EPA Regional Offices in § 63.13).

(ii) After a State has been delegated the authority to implement and enforce recordkeeping and reporting requirements established under this part, the owner or operator of an affected source in such State subject to such requirements shall submit reports to the delegated State authority (which may be the same as the permitting authority). In addition, if the delegated (permitting) authority is the State, the owner or operator shall send a copy of each report submitted to the State to the appropriate Regional Office of the EPA, as specified in paragraph (a)(4)(i) of this section. The Regional Office may waive this requirement for any reports at its discretion.

(5) If an owner or operator of an affected source in a State with delegated authority is required to submit periodic reports under this part to the State, and if the State has an established timeline for the submission of periodic reports that is consistent with the reporting frequency(ies) specified for such source under this part, the owner or operator may change the dates by which periodic reports under this part shall be submitted (without changing the frequency of reporting) to be consistent with the State's schedule by mutual agreement between the owner or operator and the State. For each relevant standard established pursuant to section 112 of the Act, the allowance in the previous sentence applies in each State beginning 1 year after the affected source's compliance date for that standard. Procedures governing the implementation of this provision are specified in § 63.9(i).

(6) If an owner or operator supervises one or more stationary sources affected by more than one standard established pursuant to section 112 of the Act, he/she may arrange by mutual agreement

between the owner or operator and the Administrator (or the State permitting authority) a common schedule on which periodic reports required for each source shall be submitted throughout the year. The allowance in the previous sentence applies in each State beginning 1 year after the latest compliance date for any relevant standard established pursuant to section 112 of the Act for any such affected source(s). Procedures governing the implementation of this provision are specified in § 63.9(i).

(7) If an owner or operator supervises one or more stationary sources affected by standards established pursuant to section 112 of the Act (as amended November 15, 1990) and standards set under part 60, part 61, or both such parts of this chapter, he/she may arrange by mutual agreement between the owner or operator and the Administrator (or the State permitting authority) a common schedule on which periodic reports required by each relevant (i.e., applicable) standard shall be submitted throughout the year. The allowance in the previous sentence applies in each State beginning 1 year after the stationary source is required to be in compliance with the relevant section 112 standard, or 1 year after the stationary source is required to be in compliance with the applicable part 60 or part 61 standard, whichever is latest. Procedures governing the implementation of this provision are specified in § 63.9(i).

(b) *General recordkeeping requirements.*

(1) The owner or operator of an affected source subject to the provisions of this part shall maintain files of all information (including all reports and notifications) required by this part recorded in a form suitable and readily available for expeditious inspection and review. The files shall be retained for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent 2 years of data shall be retained on site. The remaining 3 years of data may be retained off site. Such files may be maintained on microfilm, on a computer, on computer floppy disks, on magnetic tape disks, or on microfiche.

(2) The owner or operator of an affected source subject to the provisions of this part shall maintain relevant records for such source of -

(i) The occurrence and duration of each startup or shutdown when the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards;

(ii) The occurrence and duration of each malfunction of operation (i.e., process equipment) or the required air pollution control and monitoring equipment;

(iii) All required maintenance performed on the air pollution control and monitoring equipment;

(iv) (A) Actions taken during periods of startup or shutdown when the source exceeded applicable emission limitations in a relevant standard and when the actions taken are different from the procedures specified in the affected source's startup, shutdown, and malfunction plan (see § 63.6(e)(3)); or

(B) Actions taken during periods of malfunction (including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation) when the actions taken are different from the procedures specified in the affected source's startup, shutdown, and malfunction plan (see § 63.6(e)(3));

(v) All information necessary, including actions taken, to demonstrate conformance with the affected source's startup, shutdown, and malfunction plan (see § 63.6(e)(3)) when all actions taken during periods of startup or shutdown (and the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards), and malfunction (including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation) are consistent with the procedures specified in such plan. (The information needed to demonstrate conformance with the startup, shutdown, and malfunction plan may be recorded using a "checklist," or some other effective form of recordkeeping, in order to minimize the recordkeeping burden for conforming events);

(vi) Each period during which a CMS is malfunctioning or inoperative (including out-of-control periods);

(vii) All required measurements needed to demonstrate compliance with a relevant standard (including, but not limited to, 15-minute averages of CMS data, raw performance testing measurements, and raw performance evaluation measurements, that support data that the source is required to report);

(A) This paragraph applies to owners or operators required to install a continuous emissions monitoring system (CEMS) where the CEMS installed is automated, and where the calculated data averages do not exclude periods of CEMS breakdown or malfunction. An automated CEMS records and reduces the measured data to the form of the pollutant emission standard through the use of a computerized data acquisition system. In lieu of maintaining a file of all CEMS subhourly measurements as required under paragraph (b)(2)(vii) of this section, the owner or operator shall retain the most recent consecutive three averaging periods of subhourly measurements and a file that contains a hard copy of the data acquisition system algorithm used to reduce the measured data into the reportable form of the standard.

(B) This paragraph applies to owners or operators required to install a CEMS where the measured data is manually reduced to obtain the reportable form of the standard, and where the calculated data averages do not exclude periods of CEMS breakdown or malfunction. In lieu of maintaining a file of all CEMS subhourly measurements as required under paragraph (b)(2)(vii) of this section, the owner or operator shall retain all subhourly measurements for the most recent reporting period. The subhourly measurements shall be retained for 120 days from the date of the most recent summary or excess emission report submitted to the Administrator.

(C) The Administrator or delegated authority, upon notification to the source, may require the owner or operator to maintain all measurements as required by paragraph (b)(2)(vii), if the administrator or the delegated authority determines these records are required to more accurately assess the compliance status of the affected source.

(viii) All results of performance tests, CMS performance evaluations, and opacity and visible emission observations;

(ix) All measurements as may be necessary to determine the conditions of performance tests and performance evaluations;

- (x) All CMS calibration checks;
- (xi) All adjustments and maintenance performed on CMS;
- (xii) Any information demonstrating whether a source is meeting the requirements for a waiver of recordkeeping or reporting requirements under this part, if the source has been granted a waiver under paragraph (f) of this section;
- (xiii) All emission levels relative to the criterion for obtaining permission to use an alternative to the relative accuracy test, if the source has been granted such permission under § 63.8(f)(6); and
- (xiv) All documentation supporting initial notifications and notifications of compliance status under § 63.9.

(3) If an owner or operator determines that his or her existing or new stationary source is in the source category regulated by a standard established pursuant to section 112 of the Act, but that source is not subject to the relevant standard (or other requirement established under this part) because of enforceable limitations on the source's potential to emit, or the source otherwise qualifies for an exclusion, the owner or operator must keep a record of the applicability determination. The applicability determination must be kept on site at the source for a period of 5 years after the determination, or until the source changes its operations to become an affected source subject to the relevant standard (or other requirement established under this part), whichever comes first if the determination is made prior to January 19, 2021. The applicability determination must be kept until the source changes its operations to become an affected source subject to the relevant standard (or other requirement established under this part) if the determination was made on or after January 19, 2021. The record of the applicability determination must be signed by the person making the determination and include an emissions analysis (or other information) that demonstrates the owner or operator's conclusion that the source is unaffected (*e.g.*, because the source is an area source). The analysis (or other information) must be sufficiently detailed to allow the Administrator to make an applicability finding for the source with regard to the relevant standard or other requirement. If applicable, the analysis must be performed in accordance with requirements established in relevant subparts of this part for this purpose for particular categories of stationary sources. If relevant, the analysis should be performed in accordance with EPA guidance materials published to assist sources in making applicability determinations under section 112 of the Act, if any. The requirements to determine applicability of a standard under § 63.1(b)(3) and to record the results of that determination under this paragraph (b)(3) of this section shall not by themselves create an obligation for the owner or operator to obtain a title V permit.

(c) *Additional recordkeeping requirements for sources with continuous monitoring systems.* In addition to complying with the requirements specified in paragraphs (b)(1) and (b)(2) of this section, the owner or operator of an affected source required to install a CMS by a relevant standard shall maintain records for such source of -

- (1) All required CMS measurements (including monitoring data recorded during unavoidable CMS breakdowns and out-of-control periods);
- (2)-(4) [Reserved]

- (5) The date and time identifying each period during which the CMS was inoperative except for zero (low-level) and high-level checks;
- (6) The date and time identifying each period during which the CMS was out of control, as defined in § 63.8(c)(7);
- (7) The specific identification (i.e., the date and time of commencement and completion) of each period of excess emissions and parameter monitoring exceedances, as defined in the relevant standard(s), that occurs during startups, shutdowns, and malfunctions of the affected source;
- (8) The specific identification (i.e., the date and time of commencement and completion) of each time period of excess emissions and parameter monitoring exceedances, as defined in the relevant standard(s), that occurs during periods other than startups, shutdowns, and malfunctions of the affected source;
- (9) [Reserved]
- (10) The nature and cause of any malfunction (if known);
- (11) The corrective action taken or preventive measures adopted;
- (12) The nature of the repairs or adjustments to the CMS that was inoperative or out of control;
- (13) The total process operating time during the reporting period; and
- (14) All procedures that are part of a quality control program developed and implemented for CMS under § 63.8(d).
- (15) In order to satisfy the requirements of paragraphs (c)(10) through (c)(12) of this section and to avoid duplicative recordkeeping efforts, the owner or operator may use the affected source's startup, shutdown, and malfunction plan or records kept to satisfy the recordkeeping requirements of the startup, shutdown, and malfunction plan specified in § 63.6(e), provided that such plan and records adequately address the requirements of paragraphs (c)(10) through (c)(12).

(d) *General reporting requirements.*

- (1) Notwithstanding the requirements in this paragraph or paragraph (e) of this section, and except as provided in § 63.16, the owner or operator of an affected source subject to reporting requirements under this part shall submit reports to the Administrator in accordance with the reporting requirements in the relevant standard(s).
- (2) *Reporting results of performance tests.* Before a title V permit has been issued to the owner or operator of an affected source, the owner or operator shall report the results of any performance test under § 63.7 to the Administrator. After a title V permit has been issued to the owner or operator of an affected source, the owner or operator shall report the results of a required performance test to the appropriate permitting authority. The owner or operator of an affected source shall report the results of the performance test to the Administrator (or the State with an approved permit program) before the close of business on the 60th day following the completion of the performance test, unless specified otherwise in a relevant standard or as approved otherwise in writing by the Administrator. The results of the performance test shall be submitted as part of the notification of compliance status required under § 63.9(h).

(3) *Reporting results of opacity or visible emission observations.* The owner or operator of an affected source required to conduct opacity or visible emission observations by a relevant standard shall report the opacity or visible emission results (produced using Test Method 9 or Test Method 22, or an alternative to these test methods) along with the results of the performance test required under § 63.7. If no performance test is required, or if visibility or other conditions prevent the opacity or visible emission observations from being conducted concurrently with the performance test required under § 63.7, the owner or operator shall report the opacity or visible emission results before the close of business on the 30th day following the completion of the opacity or visible emission observations.

(4) *Progress reports.* The owner or operator of an affected source who is required to submit progress reports as a condition of receiving an extension of compliance under § 63.6(i) shall submit such reports to the Administrator (or the State with an approved permit program) by the dates specified in the written extension of compliance.

(5) (i) *Periodic startup, shutdown, and malfunction reports.* If actions taken by an owner or operator during a startup or shutdown (and the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards), or malfunction of an affected source (including actions taken to correct a malfunction) are consistent with the procedures specified in the source's startup, shutdown, and malfunction plan (see § 63.6(e)(3)), the owner or operator shall state such information in a startup, shutdown, and malfunction report. Actions taken to minimize emissions during such startups, shutdowns, and malfunctions shall be summarized in the report and may be done in checklist form; if actions taken are the same for each event, only one checklist is necessary. Such a report shall also include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. Reports shall only be required if a startup or shutdown caused the source to exceed any applicable emission limitation in the relevant emission standards, or if a malfunction occurred during the reporting period. The startup, shutdown, and malfunction report shall consist of a letter, containing the name, title, and signature of the owner or operator or other responsible official who is certifying its accuracy, that shall be submitted to the Administrator semiannually (or on a more frequent basis if specified otherwise in a relevant standard or as established otherwise by the permitting authority in the source's title V permit). The startup, shutdown, and malfunction report shall be delivered or postmarked by the 30th day following the end of each calendar half (or other calendar reporting period, as appropriate). If the owner or operator is required to submit excess emissions and continuous monitoring system performance (or other periodic) reports under this part, the startup, shutdown, and malfunction reports required under this paragraph may be submitted simultaneously with the excess emissions and continuous monitoring system performance (or other) reports. If startup, shutdown, and malfunction reports are submitted with excess emissions and continuous monitoring system performance (or other periodic) reports, and the owner or operator receives approval to reduce the frequency of reporting for the latter under paragraph (e) of this section, the frequency of reporting for the startup, shutdown, and malfunction reports also may be reduced if the Administrator does not object to the intended change. The procedures to implement the allowance in the preceding sentence shall be the same as the procedures specified in paragraph (e)(3) of this section.

(ii) *Immediate startup, shutdown, and malfunction reports.* Notwithstanding the allowance to reduce the frequency of reporting for periodic startup, shutdown, and malfunction reports under paragraph (d)(5)(i) of this section, any time an action taken by an owner or operator

during a startup or shutdown that caused the source to exceed any applicable emission limitation in the relevant emission standards, or malfunction (including actions taken to correct a malfunction) is not consistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan, the owner or operator shall report the actions taken for that event within 2 working days after commencing actions inconsistent with the plan followed by a letter within 7 working days after the end of the event. The immediate report required under this paragraph (d)(5)(ii) shall consist of a telephone call (or facsimile (FAX) transmission) to the Administrator within 2 working days after commencing actions inconsistent with the plan, and it shall be followed by a letter, delivered or postmarked within 7 working days after the end of the event, that contains the name, title, and signature of the owner or operator or other responsible official who is certifying its accuracy, explaining the circumstances of the event, the reasons for not following the startup, shutdown, and malfunction plan, describing all excess emissions and/or parameter monitoring exceedances which are believed to have occurred (or could have occurred in the case of malfunctions), and actions taken to minimize emissions in conformance with § 63.6(e)(1)(i). Notwithstanding the requirements of the previous sentence, after the effective date of an approved permit program in the State in which an affected source is located, the owner or operator may make alternative reporting arrangements, in advance, with the permitting authority in that State. Procedures governing the arrangement of alternative reporting requirements under this paragraph (d)(5)(ii) are specified in § 63.9(i).

*(e) Additional reporting requirements for sources with continuous monitoring systems -*

(1) *General.* When more than one CEMS is used to measure the emissions from one affected source (e.g., multiple breechings, multiple outlets), the owner or operator shall report the results as required for each CEMS.

*(2) Reporting results of continuous monitoring system performance evaluations.*

(i) The owner or operator of an affected source required to install a CMS by a relevant standard shall furnish the Administrator a copy of a written report of the results of the CMS performance evaluation, as required under § 63.8(e), simultaneously with the results of the performance test required under § 63.7, unless otherwise specified in the relevant standard.

(ii) The owner or operator of an affected source using a COMS to determine opacity compliance during any performance test required under § 63.7 and described in § 63.6(d)(6) shall furnish the Administrator two or, upon request, three copies of a written report of the results of the COMS performance evaluation conducted under § 63.8(e). The copies shall be furnished at least 15 calendar days before the performance test required under § 63.7 is conducted.

*(3) Excess emissions and continuous monitoring system performance report and summary report.*

(i) Excess emissions and parameter monitoring exceedances are defined in relevant standards. The owner or operator of an affected source required to install a CMS by a relevant standard shall submit an excess emissions and continuous monitoring system performance report and/or a summary report to the Administrator semiannually, except when -

(A) More frequent reporting is specifically required by a relevant standard;

(B) The Administrator determines on a case-by-case basis that more frequent reporting is necessary to accurately assess the compliance status of the source; or



(C) [Reserved]

(D) The affected source is complying with the Performance Track Provisions of § 63.16, which allows less frequent reporting.

(ii) *Request to reduce frequency of excess emissions and continuous monitoring system performance reports.* Notwithstanding the frequency of reporting requirements specified in paragraph (e)(3)(i) of this section, an owner or operator who is required by a relevant standard to submit excess emissions and continuous monitoring system performance (and summary) reports on a quarterly (or more frequent) basis may reduce the frequency of reporting for that standard to semiannual if the following conditions are met:

- (A) For 1 full year (e.g., 4 quarterly or 12 monthly reporting periods) the affected source's excess emissions and continuous monitoring system performance reports continually demonstrate that the source is in compliance with the relevant standard;
- (B) The owner or operator continues to comply with all recordkeeping and monitoring requirements specified in this subpart and the relevant standard; and
- (C) The Administrator does not object to a reduced frequency of reporting for the affected source, as provided in paragraph (e)(3)(iii) of this section.

(iii) The frequency of reporting of excess emissions and continuous monitoring system performance (and summary) reports required to comply with a relevant standard may be reduced only after the owner or operator notifies the Administrator in writing of his or her intention to make such a change and the Administrator does not object to the intended change. In deciding whether to approve a reduced frequency of reporting, the Administrator may review information concerning the source's entire previous performance history during the 5-year recordkeeping period prior to the intended change, including performance test results, monitoring data, and evaluations of an owner or operator's conformance with operation and maintenance requirements. Such information may be used by the Administrator to make a judgment about the source's potential for noncompliance in the future. If the Administrator disapproves the owner or operator's request to reduce the frequency of reporting, the Administrator will notify the owner or operator in writing within 45 days after receiving notice of the owner or operator's intention. The notification from the Administrator to the owner or operator will specify the grounds on which the disapproval is based. In the absence of a notice of disapproval within 45 days, approval is automatically granted.

(iv) As soon as CMS data indicate that the source is not in compliance with any emission limitation or operating parameter specified in the relevant standard, the frequency of reporting shall revert to the frequency specified in the relevant standard, and the owner or operator shall submit an excess emissions and continuous monitoring system performance (and summary) report for the noncomplying emission points at the next appropriate reporting period following the noncomplying event. After demonstrating ongoing compliance with the relevant standard for another full year, the owner or operator may again request approval from the Administrator to reduce the frequency of reporting for that standard, as provided for in paragraphs (e)(3)(ii) and (e)(3)(iii) of this section.

(v) *Content and submittal dates for excess emissions and monitoring system performance reports.* All excess emissions and monitoring system performance reports and all summary

reports, if required, shall be delivered or postmarked by the 30th day following the end of each calendar half or quarter, as appropriate. Written reports of excess emissions or exceedances of process or control system parameters shall include all the information required in paragraphs (c)(5) through (c)(13) of this section, in §§ 63.8(c)(7) and 63.8(c)(8), and in the relevant standard, and they shall contain the name, title, and signature of the responsible official who is certifying the accuracy of the report. When no excess emissions or exceedances of a parameter have occurred, or a CMS has not been inoperative, out of control, repaired, or adjusted, such information shall be stated in the report.

(vi) *Summary report.* As required under paragraphs (e)(3)(vii) and (e)(3)(viii) of this section, one summary report shall be submitted for the hazardous air pollutants monitored at each affected source (unless the relevant standard specifies that more than one summary report is required, e.g., one summary report for each hazardous air pollutant monitored). The summary report shall be entitled "Summary Report - Gaseous and Opacity Excess Emission and Continuous Monitoring System Performance" and shall contain the following information:

- (A) The company name and address of the affected source;
- (B) An identification of each hazardous air pollutant monitored at the affected source;
- (C) The beginning and ending dates of the reporting period;
- (D) A brief description of the process units;
- (E) The emission and operating parameter limitations specified in the relevant standard(s);
- (F) The monitoring equipment manufacturer(s) and model number(s);
- (G) The date of the latest CMS certification or audit;
- (H) The total operating time of the affected source during the reporting period;
- (I) An emission data summary (or similar summary if the owner or operator monitors control system parameters), including the total duration of excess emissions during the reporting period (recorded in minutes for opacity and hours for gases), the total duration of excess emissions expressed as a percent of the total source operating time during that reporting period, and a breakdown of the total duration of excess emissions during the reporting period into those that are due to startup/shutdown, control equipment problems, process problems, other known causes, and other unknown causes;
- (J) A CMS performance summary (or similar summary if the owner or operator monitors control system parameters), including the total CMS downtime during the reporting period (recorded in minutes for opacity and hours for gases), the total duration of CMS downtime expressed as a percent of the total source operating time during that reporting period, and a breakdown of the total CMS downtime during the reporting period into periods that are due to monitoring equipment malfunctions, nonmonitoring equipment malfunctions, quality assurance/quality control calibrations, other known causes, and other unknown causes;

(K) A description of any changes in CMS, processes, or controls since the last reporting period;

(L) The name, title, and signature of the responsible official who is certifying the accuracy of the report; and

(M) The date of the report.

(vii) If the total duration of excess emissions or process or control system parameter exceedances for the reporting period is less than 1 percent of the total operating time for the reporting period, and CMS downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, only the summary report shall be submitted, and the full excess emissions and continuous monitoring system performance report need not be submitted unless required by the Administrator.

(viii) If the total duration of excess emissions or process or control system parameter exceedances for the reporting period is 1 percent or greater of the total operating time for the reporting period, or the total CMS downtime for the reporting period is 5 percent or greater of the total operating time for the reporting period, both the summary report and the excess emissions and continuous monitoring system performance report shall be submitted.

(4) *Reporting continuous opacity monitoring system data produced during a performance test.* The owner or operator of an affected source required to use a COMS shall record the monitoring data produced during a performance test required under § 63.7 and shall furnish the Administrator a written report of the monitoring results. The report of COMS data shall be submitted simultaneously with the report of the performance test results required in paragraph (d)(2) of this section.

(f) *Waiver of recordkeeping or reporting requirements.*

(1) Until a waiver of a recordkeeping or reporting requirement has been granted by the Administrator under this paragraph, the owner or operator of an affected source remains subject to the requirements of this section.

(2) Recordkeeping or reporting requirements may be waived upon written application to the Administrator if, in the Administrator's judgment, the affected source is achieving the relevant standard(s), or the source is operating under an extension of compliance, or the owner or operator has requested an extension of compliance and the Administrator is still considering that request.

(3) If an application for a waiver of recordkeeping or reporting is made, the application shall accompany the request for an extension of compliance under § 63.6(i), any required compliance progress report or compliance status report required under this part (such as under §§ 63.6(i) and 63.9(h)) or in the source's title V permit, or an excess emissions and continuous monitoring system performance report required under paragraph (e) of this section, whichever is applicable. The application shall include whatever information the owner or operator considers useful to convince the Administrator that a waiver of recordkeeping or reporting is warranted.

(4) The Administrator will approve or deny a request for a waiver of recordkeeping or reporting requirements under this paragraph when he/she -

(i) Approves or denies an extension of compliance; or

- (ii) Makes a determination of compliance following the submission of a required compliance status report or excess emissions and continuous monitoring systems performance report; or
- (iii) Makes a determination of suitable progress towards compliance following the submission of a compliance progress report, whichever is applicable.

(5) A waiver of any recordkeeping or reporting requirement granted under this paragraph may be conditioned on other recordkeeping or reporting requirements deemed necessary by the Administrator.

(6) Approval of any waiver granted under this section shall not abrogate the Administrator's authority under the Act or in any way prohibit the Administrator from later canceling the waiver. The cancellation will be made only after notice is given to the owner or operator of the affected source.

### **§ 63.11 Control device and work practice requirements.**

#### *(a) Applicability.*

- (1) The applicability of this section is set out in § 63.1(a)(4).
- (2) This section contains requirements for control devices used to comply with applicable subparts of this part. The requirements are placed here for administrative convenience and apply only to facilities covered by subparts referring to this section.
- (3) This section also contains requirements for an alternative work practice used to identify leaking equipment. This alternative work practice is placed here for administrative convenience and is available to all subparts in 40 CFR parts 60, 61, 63, and 65 that require monitoring of equipment with a 40 CFR part 60, appendix A-7, Method 21 monitor.

#### *(b) Flares.*

- (1) Owners or operators using flares to comply with the provisions of this part shall monitor these control devices to assure that they are operated and maintained in conformance with their designs. Applicable subparts will provide provisions stating how owners or operators using flares shall monitor these control devices.
- (2) Flares shall be steam-assisted, air-assisted, or non-assisted.
- (3) Flares shall be operated at all times when emissions may be vented to them.
- (4) Flares shall be designed for and operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. Test Method 22 in appendix A of part 60 of this chapter shall be used to determine the compliance of flares with the visible emission provisions of this part. The observation period is 2 hours and shall be used according to Method 22.
- (5) Flares shall be operated with a flame present at all times. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.
- (6) An owner/operator has the choice of adhering to the heat content specifications in paragraph (b)(6)(ii) of this section, and the maximum tip velocity specifications in paragraph (b)(7) or (b)(8) of this section, or adhering to the requirements in paragraph (b)(6)(i) of this section.
  - (i) (A) Flares shall be used that have a diameter of 3 inches or greater, are nonassisted, have a hydrogen content of 8.0 percent (by volume) or greater, and are designed for and operated

with an exit velocity less than 37.2 m/sec (122 ft/sec) and less than the velocity  $V_{max}$ , as determined by the following equation:

$$V_{max} = (X_{H_2} - K_1) * K_2$$

Where:

$V_{max}$  = Maximum permitted velocity, m/sec.

$K_1$  = Constant, 6.0 volume-percent hydrogen.

$K_2$  = Constant, 3.9(m/sec)/volume-percent hydrogen.

$X_{H_2}$  = The volume-percent of hydrogen, on a wet basis, as calculated by using the American Society for Testing and Materials (ASTM) Method D1946-77. (Incorporated by reference as specified in § 63.14).

(B) The actual exit velocity of a flare shall be determined by the method specified in paragraph (b)(7)(i) of this section.

(ii) Flares shall be used only with the net heating value of the gas being combusted at 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted at 7.45 M/scm (200 Btu/scf) or greater if the flares is non-assisted. The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \sum_{i=1}^n C_i H_i$$

Where:

$H_T$  = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C.

$K$  = Constant =

$$1.740 \times 10^{-7} \left( \frac{1}{\text{ppmv}} \right) \left( \frac{\text{g-mole}}{\text{scm}} \right) \left( \frac{\text{MJ}}{\text{kcal}} \right)$$

where the standard temperature for (g-mole/scm) is 20 °C.

$C_i$  = Concentration of sample component  $i$  in ppmv on a wet basis, as measured for organics by Test Method 18 and measured for hydrogen and carbon monoxide by American Society for Testing and Materials (ASTM) D1946-77 or 90 (Reapproved 1994) (incorporated by reference as specified in § 63.14).

$H_i$  = Net heat of combustion of sample component  $i$ , kcal/g-mole at 25 °C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 or 88 or D4809-95 (incorporated by reference as specified in § 63.14) if published values are not available or cannot be calculated.

$n$  = Number of sample components.

(7) (i) Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity less than 18.3 m/sec (60 ft/sec), except as provided in paragraphs (b)(7)(ii) and (b)(7)(iii) of this section.

The actual exit velocity of a flare shall be determined by dividing by the volumetric flow rate of gas being combusted (in units of emission standard temperature and pressure), as determined by Test Method 2, 2A, 2C, or 2D in appendix A to 40 CFR part 60 of this chapter, as appropriate, by the unobstructed (free) cross-sectional area of the flare tip.

(ii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the method specified in paragraph (b)(7)(i) of this section, equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec), are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf).

(iii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the method specified in paragraph (b)(7)(i) of this section, less than the velocity  $V_{max}$ , as determined by the method specified in this paragraph, but less than 122 m/sec (400 ft/sec) are allowed. The maximum permitted velocity,  $V_{max}$ , for flares complying with this paragraph shall be determined by the following equation:

$$\text{Log}_{10}(V_{max}) = (H_T + 28.8)/31.7$$

Where:

$V_{max}$  = Maximum permitted velocity, m/sec.

28.8 = Constant.

31.7 = Constant.

$H_T$  = The net heating value as determined in paragraph (b)(6) of this section.

(8) Air-assisted flares shall be designed and operated with an exit velocity less than the velocity  $V_{max}$ . The maximum permitted velocity,  $V_{max}$ , for air-assisted flares shall be determined by the following equation:

$$V_{max} = 8.71 + 0.708(H_T)$$

Where:

$V_{max}$  = Maximum permitted velocity, m/sec.

8.71 = Constant.

0.708 = Constant.

$H_T$  = The net heating value as determined in paragraph (b)(6)(ii) of this section.

(c) *Alternative work practice for monitoring equipment for leaks.* Paragraphs (c), (d), and (e) of this section apply to all equipment for which the applicable subpart requires monitoring with a 40 CFR part 60, appendix A-7, Method 21 monitor, except for closed vent systems, equipment designated as leakless, and equipment identified in the applicable subpart as having no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background. An owner or operator may use an optical gas imaging instrument instead of a 40 CFR part 60, appendix A-7, Method 21 monitor. Requirements in the existing subparts that are specific to the Method 21 instrument do not apply under this section. All other requirements in the applicable subpart that are not addressed in paragraphs (c), (d), and (e) of this section continue to apply. For example, equipment specification requirements, and non-Method 21 instrument recordkeeping and reporting requirements in the applicable subpart continue to apply. The

terms defined in paragraphs (c)(1) through (5) of this section have meanings that are specific to the alternative work practice standard in paragraphs (c), (d), and (e) of this section.

(1) *Applicable subpart* means the subpart in 40 CFR parts 60, 61, 63, and 65 that requires monitoring of equipment with a 40 CFR part 60, appendix A-7, Method 21 monitor.

(2) *Equipment* means pumps, valves, pressure relief valves, compressors, open-ended lines, flanges, connectors, and other equipment covered by the applicable subpart that require monitoring with a 40 CFR part 60, appendix A-7, Method 21 monitor.

(3) *Imaging* means making visible emissions that may otherwise be invisible to the naked eye.

(4) *Optical gas imaging instrument* means an instrument that makes visible emissions that may otherwise be invisible to the naked eye.

(5) *Repair* means that equipment is adjusted, or otherwise altered, in order to eliminate a leak.

(6) *Leak* means:

(i) Any emissions imaged by the optical gas instrument;

(ii) Indications of liquids dripping;

(iii) Indications by a sensor that a seal or barrier fluid system has failed; or

(iv) Screening results using a 40 CFR part 60, appendix A-7, Method 21 monitor that exceed the leak definition in the applicable subpart to which the equipment is subject.

(d) The alternative work practice standard for monitoring equipment for leaks is available to all subparts in 40 CFR parts 60, 61, 63, and 65 that require monitoring of equipment with a 40 CFR part 60, appendix A-7, Method 21 monitor.

(1) An owner or operator of an affected source subject to 40 CFR parts 60, 61, 63, or 65 can choose to comply with the alternative work practice requirements in paragraph (e) of this section instead of using the 40 CFR part 60, appendix A-7, Method 21 monitor to identify leaking equipment. The owner or operator must document the equipment, process units, and facilities for which the alternative work practice will be used to identify leaks.

(2) Any leak detected when following the leak survey procedure in paragraph (e)(3) of this section must be identified for repair as required in the applicable subpart.

(3) If the alternative work practice is used to identify leaks, re-screening after an attempted repair of leaking equipment must be conducted using either the alternative work practice or the 40 CFR part 60, Appendix A-7, Method 21 monitor at the leak definition required in the applicable subparts to which the equipment is subject.

(4) The schedule for repair is as required in the applicable subpart.

(5) When this alternative work practice is used for detecting leaking equipment, choose one of the monitoring frequencies listed in Table 1 to subpart A of this part in lieu of the monitoring frequency specified for regulated equipment in the applicable subpart. Reduced monitoring frequencies for good performance are not applicable when using the alternative work practice.

(6) When this alternative work practice is used for detecting leaking equipment, the following are not applicable for the equipment being monitored:

- (i) Skip period leak detection and repair;
- (ii) Quality improvement plans; or
- (iii) Complying with standards for allowable percentage of valves and pumps to leak.

(7) When the alternative work practice is used to detect leaking equipment, the regulated equipment in paragraph (d)(1)(i) of this section must also be monitored annually using a 40 CFR part 60, Appendix A-7, Method 21 monitor at the leak definition required in the applicable subpart. The owner or operator may choose the specific monitoring period (for example, first quarter) to conduct the annual monitoring. Subsequent monitoring must be conducted every 12 months from the initial period. Owners or operators must keep records of the annual Method 21 screening results, as specified in paragraph (i)(4)(vii) of this section.

(e) An owner or operator of an affected source who chooses to use the alternative work practice must comply with the requirements of paragraphs (e)(1) through (e)(5) of this section.

(1) *Instrument specifications.* The optical gas imaging instrument must comply with the requirements specified in paragraphs (e)(1)(i) and (e)(1)(ii) of this section.

(i) Provide the operator with an image of the potential leak points for each piece of equipment at both the detection sensitivity level and within the distance used in the daily instrument check described in paragraph (e)(2) of this section. The detection sensitivity level depends upon the frequency at which leak monitoring is to be performed.

(ii) Provide a date and time stamp for video records of every monitoring event.

(2) *Daily instrument check.* On a daily basis, and prior to beginning any leak monitoring work, test the optical gas imaging instrument at the mass flow rate determined in paragraph (e)(2)(i) of this section in accordance with the procedure specified in paragraphs (e)(2)(ii) through (e)(2)(iv) of this section for each camera configuration used during monitoring (for example, different lenses used), unless an alternative method to demonstrate daily instrument checks has been approved in accordance with paragraph (e)(2)(v) of this section.

(i) Calculate the mass flow rate to be used in the daily instrument check by following the procedures in paragraphs (e)(2)(i)(A) and (e)(2)(i)(B) of this section.

(A) For a specified population of equipment to be imaged by the instrument, determine the piece of equipment in contact with the lowest mass fraction of chemicals that are detectable, within the distance to be used in paragraph (e)(2)(iv)(B) of this section, at or below the standard detection sensitivity level.

(B) Multiply the standard detection sensitivity level, corresponding to the selected monitoring frequency in Table 1 of subpart A of this part, by the mass fraction of detectable chemicals from the stream identified in paragraph (e)(2)(i)(A) of this section to determine the mass flow rate to be used in the daily instrument check, using the following equation.

$$E_{dic} = (E_{sds}) \sum_{i=1}^k x_i$$



Where:

$E_{dic}$  = Mass flow rate for the daily instrument check, grams per hour

$x_i$  = Mass fraction of detectable chemical(s)  $i$  seen by the optical gas imaging instrument, within the distance to be used in paragraph (e)(2)(iv)(B) of this section, at or below the standard detection sensitivity level,  $E_{sds}$ .

$E_{sds}$  = Standard detection sensitivity level from Table 1 to subpart A, grams per hour

$k$  = Total number of detectable chemicals emitted from the leaking equipment and seen by the optical gas imaging instrument.

(ii) Start the optical gas imaging instrument according to the manufacturer's instructions, ensuring that all appropriate settings conform to the manufacturer's instructions.

(iii) Use any gas chosen by the user that can be viewed by the optical gas imaging instrument and that has a purity of no less than 98 percent.

(iv) Establish a mass flow rate by using the following procedures:

(A) Provide a source of gas where it will be in the field of view of the optical gas imaging instrument.

(B) Set up the optical gas imaging instrument at a recorded distance from the outlet or leak orifice of the flow meter that will not be exceeded in the actual performance of the leak survey. Do not exceed the operating parameters of the flow meter.

(C) Open the valve on the flow meter to set a flow rate that will create a mass emission rate equal to the mass rate calculated in paragraph (e)(2)(i) of this section while observing the gas flow through the optical gas imaging instrument viewfinder. When an image of the gas emission is seen through the viewfinder at the required emission rate, make a record of the reading on the flow meter.

(v) Repeat the procedures specified in paragraphs (e)(2)(ii) through (e)(2)(iv) of this section for each configuration of the optical gas imaging instrument used during the leak survey.

(vi) To use an alternative method to demonstrate daily instrument checks, apply to the Administrator for approval of the alternative under § 63.177 or § 63.178, whichever is applicable.

(3) *Leak survey procedure.* Operate the optical gas imaging instrument to image every regulated piece of equipment selected for this work practice in accordance with the instrument manufacturer's operating parameters. All emissions imaged by the optical gas imaging instrument are considered to be leaks and are subject to repair. All emissions visible to the naked eye are also considered to be leaks and are subject to repair.

(4) *Recordkeeping.* Keep the records described in paragraphs (e)(4)(i) through (e)(4)(vii) of this section:

(i) The equipment, processes, and facilities for which the owner or operator chooses to use the alternative work practice.

(ii) The detection sensitivity level selected from Table 1 to subpart A of this part for the optical gas imaging instrument.

(iii) The analysis to determine the piece of equipment in contact with the lowest mass fraction of chemicals that are detectable, as specified in paragraph (e)(2)(i)(A) of this section.

(iv) The technical basis for the mass fraction of detectable chemicals used in the equation in paragraph (e)(2)(i)(B) of this section.

(v) The daily instrument check. Record the distance, per paragraph (e)(2)(iv)(B) of this section, and the flow meter reading, per paragraph (e)(2)(iv)(C) of this section, at which the leak was imaged. Keep a video record of the daily instrument check for each configuration of the optical gas imaging instrument used during the leak survey (for example, the daily instrument check must be conducted for each lens used). The video record must include a time and date stamp for each daily instrument check. The video record must be kept for 5 years.

(vi) *Recordkeeping requirements in the applicable subpart.* A video record must be used to document the leak survey results. The video record must include a time and date stamp for each monitoring event. A video record can be used to meet the recordkeeping requirements of the applicable subparts if each piece of regulated equipment selected for this work practice can be identified in the video record. The video record must be kept for 5 years.

(vii) The results of the annual Method 21 screening required in paragraph (h)(7) of this section. Records must be kept for all regulated equipment specified in paragraph (h)(1) of this section. Records must identify the equipment screened, the screening value measured by Method 21, the time and date of the screening, and calibration information required in the existing applicable subparts.

(5) *Reporting.* Submit the reports required in the applicable subpart. Submit the records of the annual Method 21 screening required in paragraph (h)(7) of this section to the Administrator via e-mail to [CCG-AWP@EPA.GOV](mailto:CCG-AWP@EPA.GOV).

### § 63.12 State authority and delegations.

(a) The provisions of this part shall not be construed in any manner to preclude any State or political subdivision thereof from -

(1) Adopting and enforcing any standard, limitation, prohibition, or other regulation applicable to an affected source subject to the requirements of this part, provided that such standard, limitation, prohibition, or regulation is not less stringent than any requirement applicable to such source established under this part;

(2) Requiring the owner or operator of an affected source to obtain permits, licenses, or approvals prior to initiating construction, reconstruction, modification, or operation of such source; or

(3) Requiring emission reductions in excess of those specified in subpart D of this part as a condition for granting the extension of compliance authorized by section 112(i)(5) of the Act.

(b) (1) Section 112(l) of the Act directs the Administrator to delegate to each State, when appropriate, the authority to implement and enforce standards and other requirements pursuant to section 112 for stationary sources located in that State. Because of the unique nature of radioactive material, delegation of authority to implement and enforce standards that control radionuclides may require separate approval.

(2) Subpart E of this part establishes procedures consistent with section 112(l) for the approval of State rules or programs to implement and enforce applicable Federal rules promulgated under the authority of section 112. Subpart E also establishes procedures for the review and withdrawal of section 112 implementation and enforcement authorities granted through a section 112(l) approval.

(c) All information required to be submitted to the EPA under this part also shall be submitted to the appropriate state agency of any state to which authority has been delegated under section 112(l) of the Act, provided that each specific delegation may exempt sources from a certain federal or state reporting requirement. Any information required to be submitted electronically by this part via the EPA's CEDRI may, at the discretion of the delegated authority, satisfy the requirements of this paragraph. The Administrator may permit all or some of the information to be submitted to the appropriate state agency only, instead of to the EPA and the state agency with the exception of federal electronic reporting requirements under this part. Sources may not be exempted from federal electronic reporting requirements.

**§ 63.13 Addresses of State air pollution control agencies and EPA Regional Offices.**

(a) All requests, reports, applications, submittals, and other communications to the Administrator pursuant to this part shall be submitted to the appropriate Regional Office of the U.S. Environmental Protection Agency indicated in the following list of EPA Regional offices. If a request, report, application, submittal, or other communication is required by this part to be submitted electronically via the EPA's CEDRI then such submission satisfies the requirements of this paragraph (a).

EPA Region I (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont) Director, Enforcement and Compliance Assurance Division, U.S. EPA Region I, 5 Post Office Square - Suite 100 (04-2), Boston, MA 02109-3912, Attn: Air Compliance Clerk.

EPA Region II (New Jersey, New York, Puerto Rico, Virgin Islands), Director, Air and Waste Management Division, 26 Federal Plaza, New York, NY 10278.

EPA Region III (Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia), Director, Air Protection Division, 1650 Arch Street, Philadelphia, PA 19103.

EPA Region IV (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee). Director, Air, Pesticides and Toxics Management Division, Atlanta Federal Center, 61 Forsyth Street, Atlanta, GA 30303-3104.

EPA Region V (Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin), Director, Air and Radiation Division, 77 West Jackson Blvd., Chicago, IL 60604-3507.

EPA Region VI (Arkansas, Louisiana, New Mexico, Oklahoma, Texas); Director; Enforcement and Compliance Assurance Division; U.S. Environmental Protection Agency, 1201 Elm Street, Suite 500, Mail Code 6ECD, Dallas, Texas 75270-2102.

EPA Region VII (Iowa, Kansas, Missouri, Nebraska), Director, Air and Waste Management Division, 11201 Renner Boulevard, Lenexa, Kansas 66219.

EPA Region VIII (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming) Director, Air and Toxics Technical Enforcement Program, Office of Enforcement, Compliance and Environmental Justice, Mail Code 8ENF-AT, 1595 Wynkoop Street, Denver, CO 80202-1129.

EPA Region IX (Arizona, California, Hawaii, Nevada; the territories of American Samoa and Guam; the Commonwealth of the Northern Mariana Islands; the territories of Baker Island, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Atoll, Palmyra Atoll, and Wake Islands; and certain U.S. Government activities in the freely associated states of the Republic of the Marshall Islands, the Federated States of Micronesia, and the Republic of Palau), Director, Air Division, 75 Hawthorne Street, San Francisco, CA 94105.

EPA Region X (Alaska, Idaho, Oregon, Washington), Director, Office of Air Quality, 1200 Sixth Avenue (OAQ-107), Seattle, WA 98101.

(b) All information required to be submitted to the Administrator under this part also shall be submitted to the appropriate State agency of any State to which authority has been delegated under section 112(l) of the Act. The owner or operator of an affected source may contact the appropriate EPA Regional Office for the mailing addresses for those States whose delegation requests have been approved.

(c) If any State requires a submittal that contains all the information required in an application, notification, request, report, statement, or other communication required in this part, an owner or operator may send the appropriate Regional Office of the EPA a copy of that submittal to satisfy the requirements of this part for that communication.

#### **§ 63.14 Incorporations by reference.**

(a) The materials listed in this section are incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, a document must be published in the Federal Register and the material must be available to the public. All approved materials are available for inspection at the Air and Radiation Docket and Information Center (Air Docket) in the EPA Docket Center (EPA/DC) at Rm. 3334, EPA West Bldg., 1301 Constitution Ave. NW, Washington, DC. The EPA/DC Public Reading Room hours of operation are 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number of the EPA/DC Public Reading Room is (202) 566-1744, and the telephone number for the Air Docket is (202) 566-1742. These approved materials are also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email [fedreg.legal@nara.gov](mailto:fedreg.legal@nara.gov) or go to [www.archives.gov/federal-register/cfr/ibr-locations.html](http://www.archives.gov/federal-register/cfr/ibr-locations.html). In addition, these materials are available from the following sources:

(b) American Conference of Governmental Industrial Hygienists (ACGIH), Customer Service Department, 1330 Kemper Meadow Drive, Cincinnati, Ohio 45240, telephone number (513) 742-2020.

(1) Industrial Ventilation: A Manual of Recommended Practice, 22nd Edition, 1995, Chapter 3, "Local Exhaust Hoods" and Chapter 5, "Exhaust System Design Procedure." IBR approved for §§ 63.843(b) and 63.844(b).

(2) Industrial Ventilation: A Manual of Recommended Practice, 23rd Edition, 1998, Chapter 3, "Local Exhaust Hoods" and Chapter 5, "Exhaust System Design Procedure." IBR approved for §§ 63.1503, 63.1506(c), 63.1512(e), Table 2 to subpart RRR, Table 3 to subpart RRR, and appendix A to subpart RRR, and § 63.2984(e).

(3) Industrial Ventilation: A Manual of Recommended Practice for Design, 27th Edition, 2010. IBR approved for §§ 63.1503, 63.1506(c), 63.1512(e), Table 2 to subpart RRR, Table 3 to subpart RRR, and appendix A to subpart RRR, and § 63.2984(e).

(c) American Petroleum Institute (API), 1220 L Street NW., Washington, DC 20005.

(1) API Publication 2517, Evaporative Loss from External Floating-Roof Tanks, Third Edition, February 1989, IBR approved for §§ 63.111, 63.1402, 63.2406 and 63.7944.

Note 1 to paragraph (c)(1):

API Publication 2517 available through reseller HIS Markit at <https://global.ihs.com/>

(2) API Publication 2518, Evaporative Loss from Fixed-roof Tanks, Second Edition, October 1991, IBR approved for § 63.150(g).

(3) API Manual of Petroleum Measurement Specifications (MPMS) Chapter 19.2 (API MPMS 19.2), Evaporative Loss From Floating-Roof Tanks, First Edition, April 1997, IBR approved for §§ 63.1251 and 63.12005.

(d) American Public Health Association, 1015 18th Street NW, Washington, DC 20036; phone (844) 232-3707; email: [standardmethods@subscriptionoffice.com](mailto:standardmethods@subscriptionoffice.com); website: [www.standardmethods.org](http://www.standardmethods.org).

(1) Standard Method 5210, Biochemical Oxygen Demand (BOD), revised December 10, 2019; IBR approved for § 63.457(c)

(2) [Reserved]

(e) American Society of Heating, Refrigerating, and Air-Conditioning Engineers at 1791 Tullie Circle, NE., Atlanta, GA 30329 [orders@ashrae.org](mailto:orders@ashrae.org).

(1) American Society of Heating, Refrigerating, and Air-Conditioning Engineers Method 52.1, Gravimetric and Dust-Spot Procedures for Testing Air-Cleaning Devices Used in General Ventilation for Removing Particulate Matter June 4, 1992; IBR approved for § 63.11516(d).

(2) ANSI/ASHRAE Standard 52.2-2017, Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size, copyright 2017; IBR approved for § 63.11173(e).

(f) American Society of Mechanical Engineers (ASME), Three Park Avenue, New York, NY 10016-5990, Telephone (800) 843-2763, <http://www.asme.org>; also available from HIS, Incorporated, 15 Inverness Way East, Englewood, CO 80112, Telephone (877) 413-5184, <http://global.ihs.com>.

(1) ANSI/ASME PTC 19.10-1981, Flue and Exhaust Gas Analyses [Part 10, Instruments and Apparatus], issued August 31, 1981, IBR approved for §§ 63.309(k), 63.457(k), 63.772(e) and (h), 63.865(b), 63.997(e), 63.1282(d) and (g), and 63.1625(b), table 5 to subpart EEEE, §§ 63.3166(a), 63.3360(e), 63.3545(a), 63.3555(a), 63.4166(a), 63.4362(a), 63.4766(a), 63.4965(a), and 63.5160(d), table 4 to subpart UUUU, table 3 to subpart YYYY, §§ 63.7822(b), 63.7824(e), 63.7825(b), 63.8000(d), 63.9307(c), 63.9323(a), 63.9621(b) and (c), 63.11148(e), 63.11155(e), 63.11162(f), 63.11163(g), 63.11410(j), 63.11551(a), 63.11646(a), and 63.11945, and table 4 to subpart AAAAA, table 5 to subpart DDDDD, table 4 to subpart JJJJJ, table 4 to subpart KKKKK, table 4 to subpart SSSSS, tables 4 and 5 of subpart UUUUU, table 1 to subpart ZZZZZ, and table 4 to subpart JJJJJ.

(2) [Reserved]

(g) The Association of Florida Phosphate Chemists, P.O. Box 1645, Bartow, Florida 33830.

(1) Book of Methods Used and Adopted By The Association of Florida Phosphate Chemists, Seventh Edition 1991:

- (i) Section IX, Methods of Analysis for Phosphate Rock, No. 1 Preparation of Sample, IBR approved for § 63.606(f), § 63.626(f).
  - (ii) Section IX, Methods of Analysis for Phosphate Rock, No. 3 Phosphorus-P<sub>2</sub>O<sub>5</sub> or Ca<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub>, Method A—Volumetric Method, IBR approved for § 63.606(f), § 63.626(f).
  - (iii) Section IX, Methods of Analysis for Phosphate Rock, No. 3 Phosphorus-P<sub>2</sub>O<sub>5</sub> or Ca<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub>, Method B—Gravimetric Quimociac Method, IBR approved for § 63.606(f), § 63.626(f).
  - (iv) Section IX, Methods of Analysis For Phosphate Rock, No. 3 Phosphorus-P<sub>2</sub>O<sub>5</sub> or Ca<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub>, Method C—Spectrophotometric Method, IBR approved for § 63.606(f), § 63.626(f).
  - (v) Section XI, Methods of Analysis for Phosphoric Acid, Superphosphate, Triple Superphosphate, and Ammonium Phosphates, No. 3 Total Phosphorus-P<sub>2</sub>O<sub>5</sub>, Method A—Volumetric Method, IBR approved for § 63.606(f), § 63.626(f), and (g).
  - (vi) Section XI, Methods of Analysis for Phosphoric Acid, Superphosphate, Triple Superphosphate, and Ammonium Phosphates, No. 3 Total Phosphorus-P<sub>2</sub>O<sub>5</sub>, Method B—Gravimetric Quimociac Method, IBR approved for § 63.606(f), § 63.626(f), and (g).
  - (vii) Section XI, Methods of Analysis for Phosphoric Acid, Superphosphate, Triple Superphosphate, and Ammonium Phosphates, No. 3 Total Phosphorus-P<sub>2</sub>O<sub>5</sub>, Method C—Spectrophotometric Method, IBR approved for § 63.606(f), § 63.626(f), and (g).
- (2) [Reserved]
- (h) Association of Official Analytical Chemists (AOAC) International, Customer Services, Suite 400, 2200 Wilson Boulevard, Arlington, Virginia 22201–3301, Telephone (703) 522–3032, Fax (703) 522–5468.
    - (1) AOAC Official Method 929.01 Sampling of Solid Fertilizers, Sixteenth edition, 1995, IBR approved for § 63.626(g).
    - (2) AOAC Official Method 929.02 Preparation of Fertilizer Sample, Sixteenth edition, 1995, IBR approved for § 63.626(g).
    - (3) AOAC Official Method 957.02 Phosphorus (Total) in Fertilizers, Preparation of Sample Solution, Sixteenth edition, 1995, IBR approved for § 63.626(g).
    - (4) AOAC Official Method 958.01 Phosphorus (Total) in Fertilizers, Spectrophotometric Molybdovanadophosphate Method, Sixteenth edition, 1995, IBR approved for § 63.626(g).
    - (5) AOAC Official Method 962.02 Phosphorus (Total) in Fertilizers, Gravimetric Quinolinium Molybdophosphate Method, Sixteenth edition, 1995, IBR approved for § 63.626(g).
    - (6) AOAC Official Method 969.02 Phosphorus (Total) in Fertilizers, Alkalimetric Quinolinium Molybdophosphate Method, Sixteenth edition, 1995, IBR approved for § 63.626(g).
    - (7) AOAC Official Method 978.01 Phosphorus (Total) in Fertilizers, Automated Method, Sixteenth edition, 1995, IBR approved for § 63.626(g).
  - (i) ASTM International, 100 Barr Harbor Drive, Post Office Box C700, West Conshohocken, PA 19428–2959, Telephone (610) 832–9585, <http://www.astm.org>; also available from ProQuest, 789 East Eisenhower Parkway, Ann Arbor, MI 48106–1346, Telephone (734) 761–4700, <http://www.proquest.com>.

- (1) ASTM D95–05 (Reapproved 2010), Standard Test Method for Water in Petroleum Products and Bituminous Materials by Distillation, approved May 1, 2010, IBR approved for § 63.10005(i) and table 6 to subpart DDDDD.
- (2) ASTM D240–09 Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter, approved July 1, 2009, IBR approved for table 6 to subpart DDDDD.
- (3) ASTM Method D388–05, Standard Classification of Coals by Rank, approved September 15, 2005, IBR approved for §§ 63.7575, 63.10042, and 63.11237.
- (4) ASTM Method D396–10, Standard Specification for Fuel Oils, including Appendix X1, approved October 1, 2010, IBR approved for § 63.10042.
- (5) ASTM D396–10, Standard Specification for Fuel Oils, approved October 1, 2010, IBR approved for §§ 63.7575 and 63.11237.
- (6) ASTM D523–89, Standard Test Method for Specular Gloss, IBR approved for § 63.782.
- (7) ASTM D975–11b, Standard Specification for Diesel Fuel Oils, approved December 1, 2011, IBR approved for § 63.7575.
- (8) ASTM D1193–77, Standard Specification for Reagent Water, IBR approved for appendix A to part 63: Method 306, Sections 7.1.1 and 7.4.2.
- (9) ASTM D1193–91, Standard Specification for Reagent Water, IBR approved for appendix A to part 63: Method 306, Sections 7.1.1 and 7.4.2.
- (10) ASTM D1331–89, Standard Test Methods for Surface and Interfacial Tension of Solutions of Surface Active Agents, IBR approved for appendix A to part 63: Method 306B, Sections 6.2, 11.1, and 12.2.2.
- (11) ASTM D1475–90, Standard Test Method for Density of Paint, Varnish Lacquer, and Related Products, IBR approved for appendix A to subpart II.
- (12) ASTM D1475–13, Standard Test Method for Density of Liquid Coatings, Inks, and Related Products, approved November 1, 2013, IBR approved for §§ 63.3151(b), 63.3941(b) and (c), 63.3951(c), 63.4141(b) and (c), 63.4551(c), 63.4741(b) and (c), 63.4751(c), and 63.4941(b) and (c).
- (13) ASTM Method D1835–05, Standard Specification for Liquefied Petroleum (LP) Gases, approved April 1, 2005, IBR approved for §§ 63.7575 and 63.11237.
- (14) ASTM D1945–03 (Reapproved 2010), Standard Test Method for Analysis of Natural Gas by Gas Chromatography, Approved January 1, 2010, IBR approved for §§ 63.670(j), 63.772(h), and 63.1282(g).
- (15) ASTM D1945–14, Standard Test Method for Analysis of Natural Gas by Gas Chromatography, Approved November 1, 2014, IBR approved for § 63.670(j).
- (16) ASTM D1946–77, Standard Method for Analysis of Reformed Gas by Gas Chromatography, IBR approved for § 63.11(b).
- (17) ASTM D1946–90 (Reapproved 1994), Standard Method for Analysis of Reformed Gas by Gas Chromatography, 1994, IBR approved for §§ 63.11(b), 63.987(b), and 63.1412.

- (18) ASTM D1963–85 (Reapproved 1996), Standard Test Method for Specific Gravity of Drying Oils, Varnishes, Resins, and Related Materials at 25/25 °C, approved November 29, 1985, IBR approved for § 63.3360(c).
- (19) ASTM D2013/D2013M–09, Standard Practice for Preparing Coal Samples for Analysis, (Approved November 1, 2009), IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJ.
- (20) ASTM D2099–00, Standard Test Method for Dynamic Water Resistance of Shoe Upper Leather by the Maeser Water Penetration Tester, IBR approved for § 63.5350.
- (21) ASTM D2111–10 (Reapproved 2015), Standard Test Methods for Specific Gravity and Density of Halogenated Organic Solvents and Their Admixtures, approved June 1, 2015, IBR approved for §§ 63.3360(c), 63.3951(c), 63.4141(b) and (c), 63.4551(c), and 63.4741(a).
- (22) ASTM D2216–05, Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass, IBR approved for the definition of “Free organic liquids” in § 63.10692.
- (23) ASTM D2234/D2234M–10, Standard Practice for Collection of a Gross Sample of Coal, approved January 1, 2010, IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJ.
- (24) ASTM D2369–93, Standard Test Method for Volatile Content of Coatings, IBR approved for appendix A to subpart II.
- (25) ASTM D2369–95, Standard Test Method for Volatile Content of Coatings, IBR approved for appendix A to subpart II.
- (26) ASTM D2369–10 (Reapproved 2015)e1, Standard Test Method for Volatile Content of Coatings, approved June 1, 2015, IBR approved for §§ 63.3151(a), 63.3360(c), 63.3961(j), 63.4141(a) and (b), 63.4161(h), 63.4321(e), 63.4341(e), 63.4351(d), 63.4541(a), and 63.4561(j), appendix A to subpart PPPP, and §§ 63.4741(a), 63.4941(a) and (b), 63.4961(j), and 63.8055(b).
- (27) ASTM D2382–76, Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method), IBR approved for § 63.11(b).
- (28) ASTM D2382–88, Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method), IBR approved for § 63.11(b).
- (29) ASTM D2697–86 (Reapproved 1998), Standard Test Method for Volume Nonvolatile Matter in Clear or Pigmented Coatings, IBR approved for §§ 63.3521(b), and 63.5160(c).
- (30) ASTM D2697–03 (Reapproved 2014), Standard Test Method for Volume Nonvolatile Matter in Clear or Pigmented Coatings, approved July 1, 2014, IBR approved for §§ 63.3161(f), 63.3360(c), 63.3941(b), 63.4141(b), 63.4741(a) and (b), 63.4941(b), and 63.8055(b).
- (31) ASTM D2879–83, Standard Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope, Approved November 28, 1983, IBR approved for §§ 63.111, 63.1402, 63.2406, 63.7944, and 63.12005.
- (32) ASTM D2879–96, Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope, (Approved 1996), IBR approved for §§ 63.111, and 63.12005.



- (33) ASTM D2908–74, Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography, Approved June 27, 1974, IBR approved for § 63.1329(c).
- (34) ASTM D2908–91, Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography, Approved December 15, 1991, IBR approved for § 63.1329(c).
- (35) ASTM D2908–91(Reapproved 2001), Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography, Approved December 15, 1991, IBR approved for § 63.1329(c).
- (36) ASTM D2908–91(Reapproved 2005), Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography, Approved December 1, 2005, IBR approved for § 63.1329(c).
- (37) ASTM D2908–91(Reapproved 2011), Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography, Approved May 1, 2011, IBR approved for § 63.1329(c).
- (38) ASTM D2986–95A, “Standard Practice for Evaluation of Air Assay Media by the Monodisperse DOP (Diocetyl Phthalate) Smoke Test,” approved September 10, 1995, IBR approved for section 7.1.1 of Method 315 in appendix A to this part.
- (39) ASTM D3173–03 (Reapproved 2008), Standard Test Method for Moisture in the Analysis Sample of Coal and Coke, (Approved February 1, 2008), IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJ.
- (40) ASTM D3257–93, Standard Test Methods for Aromatics in Mineral Spirits by Gas Chromatography, IBR approved for § 63.786(b).
- (41) ASTM D3370–76, Standard Practices for Sampling Water, Approved August 27, 1976, IBR approved for § 63.1329(c).
- (42) ASTM D3370–95a, Standard Practices for Sampling Water from Closed Conduits, Approved September 10, 1995, IBR approved for § 63.1329(c).
- (43) ASTM D3370–07, Standard Practices for Sampling Water from Closed Conduits, Approved December 1, 2007, IBR approved for § 63.1329(c).
- (44) ASTM D3370–08, Standard Practices for Sampling Water from Closed Conduits, Approved October 1, 2008, IBR approved for § 63.1329(c).
- (45) ASTM D3370–10, Standard Practices for Sampling Water from Closed Conduits, Approved December 1, 2010, IBR approved for § 63.1329(c).
- (46) ASTM D3588–98 (Reapproved 2003), Standard Practice for Calculating Heat Value, Compressibility Factor, and Relative Density of Gaseous Fuels, (Approved May 10, 2003), IBR approved for §§ 63.772(h) and 63.1282(g).
- (47) ASTM D3695–88, Standard Test Method for Volatile Alcohols in Water by Direct Aqueous-Injection Gas Chromatography, IBR approved for § 63.365(e).
- (48) ASTM D3792–91, Standard Method for Water Content of Water-Reducible Paints by Direct Injection into a Gas Chromatograph, IBR approved for appendix A to subpart II.

- (49) ASTM D3912–80, Standard Test Method for Chemical Resistance of Coatings Used in Light-Water Nuclear Power Plants, IBR approved for § 63.782.
- (50) ASTM D3960–98, Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings, approved November 10, 1998, IBR approved for §§ 63.3360(c) and 63.8055(b).
- (51) ASTM D4006–11, Standard Test Method for Water in Crude Oil by Distillation, including Annex A1 and Appendix X1, (Approved June 1, 2011), IBR approved for § 63.10005(i) and table 6 to subpart DDDDD.
- (52) ASTM D4017–81, Standard Test Method for Water in Paints and Paint Materials by the Karl Fischer Titration Method, IBR approved for appendix A to subpart II.
- (53) ASTM D4017–90, Standard Test Method for Water in Paints and Paint Materials by the Karl Fischer Titration Method, IBR approved for appendix A to subpart II.
- (54) ASTM D4017–96a, Standard Test Method for Water in Paints and Paint Materials by the Karl Fischer Titration Method, IBR approved for appendix A to subpart II.
- (55) ASTM D4057–06 (Reapproved 2011), Standard Practice for Manual Sampling of Petroleum and Petroleum Products, including Annex A1, (Approved June 1, 2011), IBR approved for § 63.10005(i) and table 6 to subpart DDDDD.
- (56) ASTM D4082–89, Standard Test Method for Effects of Gamma Radiation on Coatings for Use in Light-Water Nuclear Power Plants, IBR approved for § 63.782.
- (57) ASTM D4084–07, Standard Test Method for Analysis of Hydrogen Sulfide in Gaseous Fuels (Lead Acetate Reaction Rate Method), (Approved June 1, 2007), IBR approved for table 6 to subpart DDDDD.
- (58) ASTM D4177–95 (Reapproved 2010), Standard Practice for Automatic Sampling of Petroleum and Petroleum Products, including Annexes A1 through A6 and Appendices X1 and X2, (Approved May 1, 2010), IBR approved for § 63.10005(i) and table 6 to subpart DDDDD.
- (59) ASTM D4208–02 (Reapproved 2007), Standard Test Method for Total Chlorine in Coal by the Oxygen Bomb Combustion/Ion Selective Electrode Method, approved May 1, 2007, IBR approved for table 6 to subpart DDDDD.
- (60) ASTM D4239–14e1, “Standard Test Method for Sulfur in the Analysis Sample of Coal and Coke Using High-Temperature Tube Furnace Combustion,” approved March 1, 2014, IBR approved for § 63.849(f).
- (61) ASTM D4256–89, Standard Test Method for Determination of the Decontaminability of Coatings Used in Light-Water Nuclear Power Plants, IBR approved for § 63.782.
- (62) ASTM D4256–89 (Reapproved 94), Standard Test Method for Determination of the Decontaminability of Coatings Used in Light-Water Nuclear Power Plants, IBR approved for § 63.782.
- (63) ASTM D4282–15, Standard Test Method for Determination of Free Cyanide in Water and Wastewater by Microdiffusion, Approved July 15, 2015, IBR approved for § 63.1103(g).
- (64) ASTM D4606–03 (Reapproved 2007), Standard Test Method for Determination of Arsenic and Selenium in Coal by the Hydride Generation/Atomic Absorption Method, (Approved October 1, 2007), IBR approved for table 6 to subpart DDDDD.

- (65) ASTM D4809–95, Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter (Precision Method), IBR approved for § 63.11(b).
- (66) ASTM D4840–99 (Reapproved 2018)e, Standard Guide for Sampling Chain-of-Custody Procedures, approved August 15, 2018, IBR approved for appendix A to part 63.
- (67) ASTM D4891–89 (Reapproved 2006), Standard Test Method for Heating Value of Gases in Natural Gas Range by Stoichiometric Combustion, (Approved June 1, 2006), IBR approved for §§ 63.772(h) and 63.1282(g).
- (68) ASTM D5066–91 (Reapproved 2017), Standard Test Method for Determination of the Transfer Efficiency Under Production Conditions for Spray Application of Automotive Paints-Weight Basis, approved June 1, 2017, IBR approved for § 63.3161(g).
- (69) ASTM D5087–02, Standard Test Method for Determining Amount of Volatile Organic Compound (VOC) Released from Solventborne Automotive Coatings and Available for Removal in a VOC Control Device (Abatement), IBR approved for § 63.3165(e) and appendix A to subpart IIII.
- (70) ASTM D5192–09, Standard Practice for Collection of Coal Samples from Core, (Approved June 1, 2009), IBR approved for table 6 to subpart DDDDD.
- (71) ASTM D5198–09, Standard Practice for Nitric Acid Digestion of Solid Waste, (Approved February 1, 2009), IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJ.
- (72) ASTM D5228–92, Standard Test Method for Determination of Butane Working Capacity of Activated Carbon, (Reapproved 2005), IBR approved for § 63.11092(b).
- (73) ASTM D5291–02, Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Petroleum Products and Lubricants, IBR approved for appendix A to subpart MMMM.
- (74) ASTM D5790–95 (Reapproved 2012), Standard Test Method for Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Mass Spectrometry, Approved June 15, 2012, IBR approved for § 63.2485(h) and Table 4 to subpart UUUU.
- (75) ASTM D5864–11, Standard Test Method for Determining Aerobic Aquatic Biodegradation of Lubricants or Their Components, (Approved March 1, 2011), IBR approved for table 6 to subpart DDDDD.
- (76) ASTM D5865–10a, Standard Test Method for Gross Calorific Value of Coal and Coke, (Approved May 1, 2010), IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJ.
- (77) ASTM D5954–98 (Reapproved 2006), Test Method for Mercury Sampling and Measurement in Natural Gas by Atomic Absorption Spectroscopy, (Approved December 1, 2006), IBR approved for table 6 to subpart DDDDD.
- (78) ASTM D5965–02 (Reapproved 2013), Standard Test Methods for Specific Gravity of Coating Powders, approved June 1, 2013, IBR approved for §§ 63.3151(b) and 63.3951(c).
- (79) ASTM D6053–00, Standard Test Method for Determination of Volatile Organic Compound (VOC) Content of Electrical Insulating Varnishes, IBR approved for appendix A to subpart MMMM.
- (80) ASTM D6093–97 (Reapproved 2003), Standard Test Method for Percent Volume Nonvolatile Matter in Clear or Pigmented Coatings Using a Helium Gas Pycnometer, IBR approved for §§ 63.3521 and 63.5160(c).

- (81) ASTM D6093–97 (Reapproved 2016), Standard Test Method for Percent Volume Nonvolatile Matter in Clear or Pigmented Coatings Using a Helium Gas Pycnometer, approved December 1, 2016, IBR approved for §§ 63.3161(f), 63.3360(c), 63.3941(b), 63.4141(b), 63.4741(a) and (b), and 63.4941(b).
- (82) ASTM D6196–03 (Reapproved 2009), Standard Practice for Selection of Sorbents, Sampling, and Thermal Desorption Analysis Procedures for Volatile Organic Compounds in Air, Approved March 1, 2009, IBR approved for appendix A to this part: Method 325A and Method 325B.
- (83) ASTM D6266–00a (Reapproved 2017), Standard Test Method for Determining the Amount of Volatile Organic Compound (VOC) Released from Waterborne Automotive Coatings and Available for Removal in a VOC Control Device (Abatement), approved July 1, 2017, IBR approved for § 63.3165(e).
- (84) ASTM D6323–98 (Reapproved 2003), Standard Guide for Laboratory Subsampling of Media Related to Waste Management Activities, (Approved August 10, 2003), IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJ.
- (85) ASTM D6348–03, Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy, including Annexes A1 through A8, Approved October 1, 2003, IBR approved for §§ 63.457(b), 63.997(e), and 63.1349, table 4 to subpart DDDD, table 5 to subpart EEEE, table 4 to subpart UUUU, table 4 subpart ZZZZ, and table 8 to subpart HHHHHH.
- (86) ASTM D6348–03 (Reapproved 2010), Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy, including Annexes A1 through A8, Approved October 1, 2010, IBR approved for §§ 63.1571(a), 63.4751(i), 63.4752(e), 63.4766(b), 63.7142(a) and (b), tables 4 and 5 to subpart JJJJ, tables 4 and 6 to subpart KKKKK, tables 1, 2, and 5 to subpart UUUUU and appendix B to subpart UUUUU.
- (87) ASTM D6348–12e1, Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy, Approved February 1, 2012, IBR approved for §§ 63.997(e), 63.1571(a), and 63.2354(b), table 5 to subpart EEEE, table 4 to subpart UUUU, §§ 63.7142(a) and (b) and 63.8000(d), and table 4 to subpart SSSS.
- (88) ASTM D6350–98 (Reapproved 2003), Standard Test Method for Mercury Sampling and Analysis in Natural Gas by Atomic Fluorescence Spectroscopy, (Approved May 10, 2003), IBR approved for table 6 to subpart DDDDD.
- (89) ASTM D6357–11, Test Methods for Determination of Trace Elements in Coal, Coke, and Combustion Residues from Coal Utilization Processes by Inductively Coupled Plasma Atomic Emission Spectrometry, (Approved April 1, 2011), IBR approved for table 6 to subpart DDDDD.
- (90) ASTM D6376–10, “Standard Test Method for Determination of Trace Metals in Petroleum Coke by Wavelength Dispersive X-Ray Fluorescence Spectroscopy,” Approved July 1, 2010, IBR approved for § 63.849(f).
- (91) [Reserved]
- (92) ASTM D6420–99, Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry, IBR approved for §§ 63.5799 and 63.5850.
- (93) ASTM D6420–99 (Reapproved 2004), Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry (Approved October 1, 2004),

IBR approved for §§ 63.457(b), 63.772(a), 63.772(e), 63.1282(a) and (d), and table 8 to subpart HHHHHHH.

(94) ASTM D6420–99 (Reapproved 2010), Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry, Approved October 1, 2010, IBR approved for §§ 63.670(j), Table 4 to subpart UUUU, 63.7142(b), and appendix A to this part: Method 325B.

(95) ASTM D6420–18, Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry, approved November 1, 2018, IBR approved for §§ 63.987(b), 63.997(e), and 63.2354(b), table 5 to subpart EEEE, and §§ 63.2450(j) and 63.8000(d).

(96) ASTM D6522–00, Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers, IBR approved for § 63.9307(c).

(97) ASTM D6522–00 (Reapproved 2005), Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers, (Approved October 1, 2005), IBR approved for table 4 to subpart ZZZZ, table 5 to subpart DDDDDD, table 4 to subpart JJJJJ, and §§ 63.772(e) and (h)) and 63.1282(d) and (g).

(98) ASTM D6522–11 Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers, Approved December 1, 2011, IBR approved for § 63.1961(a) and table 3 to subpart YYYY.

(99) ASTM D6721–01 (Reapproved 2006), Standard Test Method for Determination of Chlorine in Coal by Oxidative Hydrolysis Microcoulometry, (Approved April 1, 2006), IBR approved for table 6 to subpart DDDDD.

(100) ASTM D6722–01 (Reapproved 2006), Standard Test Method for Total Mercury in Coal and Coal Combustion Residues by the Direct Combustion Analysis, (Approved April 1, 2006), IBR approved for Table 6 to subpart DDDDD and Table 5 to subpart JJJJJ.

(101) ASTM D6735–01 (Reapproved 2009), Standard Test Method for Measurement of Gaseous Chlorides and Fluorides from Mineral Calcining Exhaust Sources—Impinger Method, IBR approved for § 63.7142(b), tables 4 and 5 to subpart JJJJJ, and tables 4 and 6 to subpart KKKKK.

(102) ASTM D6751–11b, Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels, (Approved July 15, 2011), IBR approved for §§ 63.7575 and 63.11237.

(103) ASTM D6784–02 (Reapproved 2008), Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method), Approved April 1, 2008; IBR approved for §§ 63.2465(d); 63.11646(a); 63.11647(a) and (d); tables 1, 2, 5, 11, 12t, and 13 to subpart DDDDD; tables 4 and 5 to subpart JJJJJ; tables 4 and 6 to subpart KKKKK; table 4 to subpart JJJJJ.

(104) ASTM D6784–16, Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method), Approved March 1, 2016; IBR approved for table 5 to subpart UUUUU; appendix A to subpart UUUUU.

(105) ASTM D6883–04, Standard Practice for Manual Sampling of Stationary Coal from Railroad Cars, Barges, Trucks, or Stockpiles, (Approved June 1, 2004), IBR approved for table 6 to subpart DDDDD.

(106) ASTM D6886–18, Standard Test Method for Determination of the Weight Percent Individual Volatile Organic Compounds in Waterborne Air-Dry Coatings by Gas Chromatography, approved October 1, 2018, IBR approved for § 63.2354(c).

(107) ASTM D7237–18, Standard Test Method for Free Cyanide and Aquatic Free Cyanide with Flow Injection Analysis (FIA) Utilizing Gas Diffusion Separation and Amperometric Detection, Approved December 1, 2018, IBR approved for § 63.1103(g).

(108) ASTM D7430–11ae1, Standard Practice for Mechanical Sampling of Coal, (Approved October 1, 2011), IBR approved for table 6 to subpart DDDDD.

(109) ASTM D7520–16, Standard Test Method for Determining the Opacity of a Plume in the Outdoor Ambient Atmosphere, approved April 1, 2016; IBR approved for §§ 63.1625(b); table 3 to subpart LLLLL; 63.7823(c) through (e), 63.7833(g); 63.11423(c).

(110) [Reserved]

(111) ASTM E145–94 (Reapproved 2001), Standard Specification for Gravity-Convection and Forced-Ventilation Ovens, IBR approved for appendix A to subpart PPPP.

(112) ASTM E180–93, Standard Practice for Determining the Precision of ASTM Methods for Analysis and Testing of Industrial Chemicals, IBR approved for § 63.786(b).

(113) ASTM E260–91, General Practice for Packed Column Gas Chromatography, IBR approved for §§ 63.750(b) and 63.786(b).

(114) ASTM E260–96, General Practice for Packed Column Gas Chromatography, IBR approved for §§ 63.750(b) and 63.786(b).

(115) ASTM E515–95 (Reapproved 2000), Standard Test Method for Leaks Using Bubble Emission Techniques, IBR approved for § 63.425(i).

(116) ASTM E711–87 (Reapproved 2004), Standard Test Method for Gross Calorific Value of Refuse-Derived Fuel by the Bomb Calorimeter, (Approved August 28, 1987), IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJ.

(117) ASTM E776–87 (Reapproved 2009), Standard Test Method for Forms of Chlorine in Refuse-Derived Fuel, (Approved July 1, 2009), IBR approved for table 6 to subpart DDDDD.

(118) ASTM E871–82 (Reapproved 2006), Standard Test Method for Moisture Analysis of Particulate Wood Fuels, (Approved November 1, 2006), IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJ.

(119) ASTM UOP539–12, Refinery Gas Analysis by GC, Copyright 2012 (to UOP), IBR approved for § 63.670(j).

(j) Bay Area Air Quality Management District (BAAQMD), 939 Ellis Street, San Francisco, California 94109, <http://www.arb.ca.gov/DRDB/BA/CURHTML/ST/st30.pdf>.

(1) "BAAQMD Source Test Procedure ST-30—Static Pressure Integrity Test, Underground Storage Tanks," adopted November 30, 1983, and amended December 21, 1994, IBR approved for § 63.11120(a).

(2) [Reserved]

(k) British Standards Institute, 389 Chiswick High Road, London W4 4AL, United Kingdom.

(1) BS EN 1593:1999, Non-destructive Testing: Leak Testing—Bubble Emission Techniques, IBR approved for § 63.425(i).

(2) BS EN 14662-4:2005, Ambient air quality standard method for the measurement of benzene concentrations—Part 4: Diffusive sampling followed by thermal desorption and gas chromatography, Published June 27, 2005, IBR approved for appendix A to this part: Method 325A and Method 325B.

(l) California Air Resources Board (CARB), 1001 I Street, P.O. Box 2815, Sacramento, CA 95812-2815, Telephone (916) 327-0900, <http://www.arb.ca.gov/>.

(1) Method 310, "Determination of Volatile Organic Compounds (VOC) in Consumer Products and Reactive Organic Compounds (ROC) in Aerosol Coating Products," amended May 25, 2018, IBR approved for § 63.8055(b).

(2) Method 428, "Determination Of Polychlorinated Dibenzo-P-Dioxin (PCDD), Polychlorinated Dibenzofuran (PCDF), and Polychlorinated Biphenyle Emissions from Stationary Sources," amended September 12, 1990, IBR approved for § 63.849(a)(13) and (14).

(3) Method 429, Determination of Polycyclic Aromatic Hydrocarbon (PAH) Emissions from Stationary Sources, Adopted September 12, 1989, Amended July 28, 1997, IBR approved for § 63.1625(b).

(4) California Air Resources Board Vapor Recovery Test Procedure TP-201.1—"Volumetric Efficiency for Phase I Vapor Recovery Systems," adopted April 12, 1996, and amended February 1, 2001 and October 8, 2003, IBR approved for § 63.11120(b).

(5) California Air Resources Board Vapor Recovery Test Procedure TP-201.1E—"Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves," adopted October 8, 2003, IBR approved for § 63.11120(a).

(6) California Air Resources Board Vapor Recovery Test Procedure TP-201.3—"Determination of 2-Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities," adopted April 12, 1996 and amended March 17, 1999, IBR approved for § 63.11120(a).

(m) Composite Panel Association, 19465 Deerfield Avenue, Suite 306, Leesburg, VA 20176, Telephone (703)724-1128, and [www.compositepanel.org](http://www.compositepanel.org).

(1) ANSI A135.4-2012, Basic Hardboard, approved June 8, 2012, IBR approved for § 63.4781.

(2) [Reserved]

(n) Environmental Protection Agency. Air and Radiation Docket and Information Center, 1200 Pennsylvania Avenue NW., Washington, DC 20460, telephone number (202) 566-1745.

(1) California Regulatory Requirements Applicable to the Air Toxics Program, November 16, 2010, IBR approved for § 63.99(a).

(2) New Jersey's Toxic Catastrophe Prevention Act Program, (July 20, 1998), IBR approved for § 63.99(a).

(3) Delaware Department of Natural Resources and Environmental Control, Division of Air and Waste Management, Accidental Release Prevention Regulation, sections 1 through 5 and sections 7 through 14, effective January 11, 1999, IBR approved for § 63.99(a).

(4) State of Delaware Regulations Governing the Control of Air Pollution (October 2000), IBR approved for § 63.99(a).

(5) Massachusetts Department of Environmental Protection regulations at 310 CMR 7.26(10)–(16), Air Pollution Control, effective as of September 5, 2008, corrected March 6, 2009, and 310 CMR 70.00, Environmental Results Program Certification, effective as of December 28, 2007. IBR approved for § 63.99(a).

(6)

(i) New Hampshire Regulations at Env-Sw 2100, Management and Control of Asbestos Disposal Sites Not Operated after July 9, 1981, effective February 16, 2010 (including a letter from Thomas S. Burack, Commissioner, Department of Environmental Services, State of New Hampshire, to Carol J. Holahan, Director, Office of Legislative Services, dated February 12, 2010, certifying that the enclosed rule, Env-Sw 2100, is the official version of this rule), IBR approved for § 63.99(a).

(ii) New Hampshire Code of Administrative Rules: Chapter Env-A 1800, Asbestos Management and Control, effective as of May 5, 2017 (certified with June 23, 2017 letter from Clark B. Freise, Assistant Commissioner, Department of Environmental Services, State of New Hampshire), as follows: Revision Notes #1 and #2; Part Env-A 1801–1807, excluding Env-A 1801.02(e), Env-A 1801.07, Env-A 1802.02, Env-A 1802.04, Env-A 1802.07–1802.09, Env-A 1802.13, Env-A 1802.15–1802.17, Env-A 1802.25, Env-A 1802.31, Env-A 1802.37, Env-A 1802.40, Env-A 1802.44, and Env-A 1803.05–1803.09; and Appendices B, C, and D; IBR approved for § 63.99(a).

(7) Maine Department of Environmental Protection regulations at Chapter 125, Perchloroethylene Dry Cleaner Regulation, effective as of June 2, 1991, last amended on June 24, 2009. IBR approved for § 63.99(a).

(8) California South Coast Air Quality Management District's "Spray Equipment Transfer Efficiency Test Procedure for Equipment User, May 24, 1989," IBR approved for §§ 63.11173(e) and 63.11516(d).

(9) California South Coast Air Quality Management District's "Guidelines for Demonstrating Equivalency with District Approved Transfer Efficient Spray Guns, September 26, 2002," Revision 0, IBR approved for §§ 63.11173(e) and 63.11516(d).

(10) Rhode Island Department of Environmental Management regulations at Air Pollution Control Regulation No. 36, Control of Emissions from Organic Solvent Cleaning, effective April 8, 1996, last amended October 9, 2008, IBR approved for § 63.99(a).

(11) Rhode Island Air Pollution Control, General Definitions Regulation, effective July 19, 2007, last amended October 9, 2008. IBR approved for § 63.99(a).

(12) Alaska Statute 42.45.045. Renewable energy grant fund and recommendation program, available at <http://www.legis.state.ak.us/basis/folio.asp>, IBR approved for § 63.6675.

(13) Vermont Air Pollution Control Regulations, Chapter 5, Air Pollution Control, section 5–253.11, Perchloroethylene Dry Cleaning, effective as of December 15, 2016. Incorporation by reference approved for § 63.99(a).



(o) U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue NW., Washington, DC 20460, (202) 272-0167, <http://www.epa.gov>.

(1) EPA-453/R-08-002, Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Primer-Surfacer and Topcoat, published September 2008, IBR approved for §§ 63.3130(c), 63.3161(d) and (g), 63.3165(e), and appendix A to subpart IIII.

(2) EPA-453/R-01-005, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Integrated Iron and Steel Plants—Background Information for Proposed Standards, Final Report, January 2001, IBR approved for § 63.7491(g).

(3) [Reserved]

(4) EPA-454/R-98-015, Office of Air Quality Planning and Standards (OAQPS), Fabric Filter Bag Leak Detection Guidance, September 1997, <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=2000D5T6.PDF>; IBR approved for §§ 63.548(e); 63.864(e); 63.7525(j); 63.8450(e); 63.8600(e); 63.9632(a); 63.9804(f); 63.11224(f); 63.11423(e).

(5) EPA-454/R-99-005, Office of Air Quality Planning and Standards (OAQPS), Meteorological Monitoring Guidance for Regulatory Modeling Applications, February 2000, IBR approved for appendix A to this part: Method 325A.

(6) EPA/600/R-12/531, EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards, May 2012, IBR approved for § 63.2163(b).

(7) EPA-625/3-89-016, Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxins and -Dibenzofurans (CDDs and CDFs) and 1989 Update, March 1989. IBR approved for § 63.1513(d).

(8) SW-846-0011, Sampling for Selected Aldehyde and Ketone Emissions from Stationary Sources, Revision 0, December 1996, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for table 4 to subpart DDDD.

(9) SW-846-3020A, Acid Digestion of Aqueous Samples And Extracts For Total Metals For Analysis By GFAA Spectroscopy, Revision 1, July 1992, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJ.

(10) SW-846-3050B, Acid Digestion of Sediments, Sludges, and Soils, Revision 2, December 1996, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJ.

(11) SW-846-5030B, Purge-And-Trap For Aqueous Samples, Revision 2, December 1996, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for § 63.2492(b) and (c).

(12) SW-846-5031, Volatile, Nonpurgeable, Water-Soluble Compounds by Azeotropic Distillation, Revision 0, December 1996, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for § 63.2492(b) and (c).

(13) SW-846-7470A, Mercury In Liquid Waste (Manual Cold-Vapor Technique), Revision 1, September 1994, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJ.

- (14) SW-846-7471B, Mercury In Solid Or Semisolid Waste (Manual Cold-Vapor Technique), Revision 2, February 2007, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJ.
- (15) SW-846-8015C, Nonhalogenated Organics by Gas Chromatography, Revision 3, February 2007, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for §§ 63.11960, 63.11980, and table 10 to subpart HHHHHHH.
- (16) SW-846-8260B, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS), Revision 2, December 1996, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for §§ 63.1107(a), 63.11960, 63.11980, and table 10 to subpart HHHHHHH.
- (17) SW-846-8260D, Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry, Revision 4, June 2018, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for § 63.2492(b) and (c).
- (18) SW-846-8270D, Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS), Revision 4, February 2007, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for §§ 63.1107(a), 63.11960, 63.11980, and table 10 to subpart HHHHHHH.
- (19) SW-846-8315A, Determination of Carbonyl Compounds by High Performance Liquid Chromatography (HPLC), Revision 1, December 1996, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for §§ 63.11960 and 63.11980, and table 10 to subpart HHHHHHH.
- (20) SW-846-5050, Bomb Preparation Method for Solid Waste, Revision 0, September 1994, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition IBR approved for table 6 to subpart DDDDD.
- (21) SW-846-6010C, Inductively Coupled Plasma-Atomic Emission Spectrometry, Revision 3, February 2007, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for table 6 to subpart DDDDD.
- (22) SW-846-6020A, Inductively Coupled Plasma-Mass Spectrometry, Revision 1, February 2007, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for table 6 to subpart DDDDD.
- (23) SW-846-7060A, Arsenic (Atomic Absorption, Furnace Technique), Revision 1, September 1994, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for table 6 to subpart DDDDD.
- (24) SW-846-7740, Selenium (Atomic Absorption, Furnace Technique), Revision 0, September 1986, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for table 6 to subpart DDDDD.
- (25) SW-846-9056, Determination of Inorganic Anions by Ion Chromatography, Revision 1, February 2007, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for table 6 to subpart DDDDD.

(26) SW-846-9076, Test Method for Total Chlorine in New and Used Petroleum Products by Oxidative Combustion and Microcoulometry, Revision 0, September 1994, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for table 6 to subpart DDDDD.

(27) SW-846-9250, Chloride (Colorimetric, Automated Ferricyanide AAI), Revision 0, September 1986, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for table 6 to subpart DDDDD.

(28) Method 200.8, Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma—Mass Spectrometry, Revision 5.4, 1994, IBR approved for table 6 to subpart DDDDD.

(29) Method 1631 Revision E, Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Absorption Fluorescence Spectrometry, Revision E, EPA-821-R-02-019, August 2002, IBR approved for table 6 to subpart DDDDD.

(p) International Standards Organization (ISO), 1, ch. de la Voie-Creuse, Case postale 56, CH-1211 Geneva 20, Switzerland, + 41 22 749 01 11, <http://www.iso.org/iso/home.htm>.

(1) ISO 6978-1:2003(E), Natural Gas—Determination of Mercury—Part 1: Sampling of Mercury by Chemisorption on Iodine, First edition, October 15, 2003, IBR approved for table 6 to subpart DDDDD.

(2) ISO 6978-2:2003(E), Natural gas—Determination of Mercury—Part 2: Sampling of Mercury by Amalgamation on Gold/Platinum Alloy, First edition, October 15, 2003, IBR approved for table 6 to subpart DDDDD.

(3) ISO 16017-2:2003(E): Indoor, ambient and workplace air—sampling and analysis of volatile organic compounds by sorbent tube/thermal desorption/capillary gas chromatography—Part 2: Diffusive sampling, May 15, 2003, IBR approved for appendix A to this part: Method 325A and Method 325B.

(q) National Council of the Paper Industry for Air and Stream Improvement, Inc. (NCASI), P.O. Box 133318, Research Triangle Park, NC 27709-3318 or at <http://www.ncasi.org>.

(1) NCASI Method DI/MEOH-94.03, Methanol in Process Liquids and Wastewaters by GC/FID, Issued May 2000, IBR approved for §§ 63.457 and 63.459.

(2) NCASI Method CI/WP-98.01, Chilled Impinger Method For Use At Wood Products Mills to Measure Formaldehyde, Methanol, and Phenol, 1998, Methods Manual, IBR approved for table 4 to subpart DDDD.

(3) NCASI Method DI/HAPS-99.01, Selected HAPs In Condensates by GC/FID, Issued February 2000, IBR approved for § 63.459(b).

(4) NCASI Method IM/CAN/WP-99.02, Impinger/Canister Source Sampling Method for Selected HAPs and Other Compounds at Wood Products Facilities, January 2004, Methods Manual, IBR approved for table 4 to subpart DDDD.

(5) NCASI Method ISS/FP A105.01, Impinger Source Sampling Method for Selected Aldehydes, Ketones, and Polar Compounds, December 2005, Methods Manual, IBR approved for table 4 to subpart DDDD and §§ 63.4751(i) and 63.4752(e).

(r) National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161, (703) 605–6000 or (800) 553–6847; or for purchase from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, (202) 512–1800.

(1) Handbook 44, Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices 1998, IBR approved for § 63.1303(e).

(2) “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,” EPA Publication SW–846, Third Edition. (A suffix of “A” in the method number indicates revision one (the method has been revised once). A suffix of “B” in the method number indicates revision two (the method has been revised twice).

(i) Method 0023A, “Sampling Method for Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofuran Emissions from Stationary Sources,” Revision 2, dated August 2018, IBR approved for § 63.1208(b).

(ii) Method 9071B, “n-Hexane Extractable Material (HEM) for Sludge, Sediment, and Solid Samples,” dated April 1998, IBR approved for § 63.7824(e).

(iii) Method 9095A, “Paint Filter Liquids Test,” dated December 1996, IBR approved for §§ 63.7700(b) and 63.7765.

(iv) Method 9095B, “Paint Filter Liquids Test,” (revision 2), dated November 2004, IBR approved for the definition of “Free organic liquids” in §§ 63.10692, 63.10885(a), and the definition of “Free liquids” in § 63.10906.

(v) SW–846 74741B, Revision 2, “Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique),” February 2007, IBR approved for § 63.11647(f).

(3) National Institute of Occupational Safety and Health (NIOSH) test method compendium, “NIOSH Manual of Analytical Methods,” NIOSH publication no. 94–113, Fourth Edition, August 15, 1994.

(i) NIOSH Method 2010, “Amines, Aliphatic,” Issue 2, August 15, 1994, IBR approved for § 63.7732(g).

(ii) [Reserved]

(s) North American Electric Reliability Corporation, 1325 G Street, NW., Suite 600, Washington, DC 20005–3801, <http://www.nerc.com>, [http://www.nerc.com/files/EOP0002-3\\_1.pdf](http://www.nerc.com/files/EOP0002-3_1.pdf).

(1) North American Electric Reliability Corporation Reliability Standard EOP–002–3, Capacity and Energy Emergencies, adopted August 5, 2010, IBR approved for § 63.6640(f).

(2) [Reserved]

(t) Technical Association of the Pulp and Paper Industry (TAPPI), 15 Technology Parkway South, Norcross, GA 30092, (800) 332–8686, <http://www.tappi.org>.

(1) TAPPI T 266, Determination of Sodium, Calcium, Copper, Iron, and Manganese in Pulp and Paper by Atomic Absorption Spectroscopy (Reaffirmation of T 266 om-02), Draft No. 2, July 2006, IBR approved for table 6 to subpart DDDDD.

(2) [Reserved]

(u) Texas Commission on Environmental Quality (TCEQ) Library, Post Office Box 13087, Austin, Texas 78711–3087, telephone number (512) 239–0028, [http://www.tceq.state.tx.us/assets/public/implementation/air/sip/sipdocs/2002-12-HGB/02046sipapp\\_ado.pdf](http://www.tceq.state.tx.us/assets/public/implementation/air/sip/sipdocs/2002-12-HGB/02046sipapp_ado.pdf).

(1) “Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources,” Revision Number One, dated January 2003, Sampling Procedures Manual, Appendix P: Cooling Tower Monitoring, January 31, 2003, IBR approved for §§ 63.654(c) and (g), 63.655(i), 63.1086(e), 63.1089, 63.2490(d), 63.2525(r), and 63.11920.

(2) [Reserved]

### Editorial Note

Editorial Note: For Federal Register citations affecting § 63.14, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at [www.govinfo.gov](http://www.govinfo.gov).

### § 63.15 Availability of information and confidentiality.

(a) *Availability of information.*

(1) With the exception of information protected through part 2 of this chapter, all reports, records, and other information collected by the Administrator under this part are available to the public. In addition, a copy of each permit application, compliance plan (including the schedule of compliance), notification of compliance status, excess emissions and continuous monitoring systems performance report, and title V permit is available to the public, consistent with protections recognized in section 503(e) of the Act.

(2) The availability to the public of information provided to or otherwise obtained by the Administrator under this part shall be governed by part 2 of this chapter.

(b) *Confidentiality.*

(1) If an owner or operator is required to submit information entitled to protection from disclosure under section 114(c) of the Act, the owner or operator may submit such information separately. The requirements of section 114(c) shall apply to such information.

(2) The contents of a title V permit shall not be entitled to protection under section 114(c) of the Act; however, information submitted as part of an application for a title V permit may be entitled to protection from disclosure.

### § 63.16 Performance Track Provisions.

(a) Notwithstanding any other requirements in this part, an affected source at any major source or any area source at a Performance Track member facility, which is subject to regular periodic reporting under any subpart of this part, may submit such periodic reports at an interval that is twice the length of the regular period specified in the applicable subparts; provided, that for sources subject to permits under 40 CFR part 70 or 71 no interval so calculated for any report of the results of any required monitoring may be less frequent than once in every six months.

(b) Notwithstanding any other requirements in this part, the modifications of reporting requirements in paragraph (c) of this section apply to any major source at a Performance Track member facility which is subject to requirements under any of the subparts of this part and which has:

- (1) Reduced its total HAP emissions to less than 25 tons per year;
  - (2) Reduced its emissions of each individual HAP to less than 10 tons per year; and
  - (3) Reduced emissions of all HAPs covered by each MACT standard to at least the level required for full compliance with the applicable emission standard.
- (c) For affected sources at any area source at a Performance Track member facility and which meet the requirements of paragraph (b)(3) of this section, or for affected sources at any major source that meet the requirements of paragraph (b) of this section:
- (1) If the emission standard to which the affected source is subject is based on add-on control technology, and the affected source complies by using add-on control technology, then all required reporting elements in the periodic report may be met through an annual certification that the affected source is meeting the emission standard by continuing to use that control technology. The affected source must continue to meet all relevant monitoring and recordkeeping requirements. The compliance certification must meet the requirements delineated in Clean Air Act section 114(a)(3).
  - (2) If the emission standard to which the affected source is subject is based on add-on control technology, and the affected source complies by using pollution prevention, then all required reporting elements in the periodic report may be met through an annual certification that the affected source is continuing to use pollution prevention to reduce HAP emissions to levels at or below those required by the applicable emission standard. The affected source must maintain records of all calculations that demonstrate the level of HAP emissions required by the emission standard as well as the level of HAP emissions achieved by the affected source. The affected source must continue to meet all relevant monitoring and recordkeeping requirements. The compliance certification must meet the requirements delineated in Clean Air Act section 114(a)(3).
  - (3) If the emission standard to which the affected source is subject is based on pollution prevention, and the affected source complies by using pollution prevention and reduces emissions by an additional 50 percent or greater than required by the applicable emission standard, then all required reporting elements in the periodic report may be met through an annual certification that the affected source is continuing to use pollution prevention to reduce HAP emissions by an additional 50 percent or greater than required by the applicable emission standard. The affected source must maintain records of all calculations that demonstrate the level of HAP emissions required by the emission standard as well as the level of HAP emissions achieved by the affected source. The affected source must continue to meet all relevant monitoring and recordkeeping requirements. The compliance certification must meet the requirements delineated in Clean Air Act section 114(a)(3).
  - (4) Notwithstanding the provisions of paragraphs (c)(1) through (3), of this section, for sources subject to permits under 40 CFR part 70 or 71, the results of any required monitoring and recordkeeping must be reported not less frequently than once in every six months.

**Table 1 to Subpart A of Part 63 - Detection Sensitivity Levels (grams per hour)**

Monitoring frequency per subpart <sup>a</sup>	Detection sensitivity level
Bi-Monthly	60
Semi-Quarterly	85

Permit Issued: [month day, year]  
Permit Expires: [month day, year]

Monitoring frequency per subpart <sup>a</sup>	Detection sensitivity level
Monthly	100

<sup>a</sup> When this alternative work practice is used to identify leaking equipment, the owner or operator must choose one of the monitoring frequencies listed in this table, in lieu of the monitoring frequency specified in the applicable subpart. Bi-monthly means every other month. Semi-quarterly means twice per quarter. Monthly means once per month.

### Appendix C. Fugitive Emission Control Plan

\*Also included in the Tempo central file as a .pdf document

#### I. Introduction

The Fugitive Control Plan describes the activities and methods used to control fugitives at the NSPM – Red Wing Generating facility.

#### II. Work Areas/Segments

There are four areas identified as possible sources of fugitive emissions. These areas are described below and a map is attached for reference.

##### a. RDF Transfer Station and Unloading Area

During the course normal activities, refuse derived fuel (RDF) can become airborne due to the configuration of the RDF transfer station (one side is open for semi-trailers and the other side is open for access to the RDF unloading area).

##### b. RDF Transfer

Two conveyors are utilized to route RDF from the walking floor into the facility. A scalping conveyor is utilized to transfer RDF to a belt conveyor. A belt conveyor is utilized to transfer RDF into the facility where it is combusted. Although the conveyors are not enclosed the entire length of the conveyor, they are located inside a building and thereby totally enclosed. Fugitive emissions can only escape through doors or windows.

##### c. Receiving Area

Beyond the unloading area, the receiving area is where the RDF trucks/trailers park to unload. The receiving area consists of a concrete pad. The trailers park on the concrete pad during unloading operations. RDF that falls off the trucks while unloading is periodically shoveled into the walking floor.

##### d. Parking Areas and Roads

The entrance road and parking lot are paved, thereby limiting the amount of airborne dust.

#### III. Housekeeping Actions Implemented

- a. The doors to the receiving area storage building will be kept closed at all times when not loading RDF on the walking floor. Main access doors to the storage building will be closed when not unloading trucks in the storage building.
- b. Truck drivers delivering RDF to the facility will sweep the backs of the trailers and doors free of RDF before leaving the truck bay receiving area.
- c. Weekly inspections of the site will be performed during non-snow covered times of the year to monitor the site for fugitive RDF. The dates of the inspections will be documented.
- d. Fugitive RDF will be picked up and returned to the receiving area building on a regular basis during non-snow covered times of the year.
- e. The Receiving Area Building and the Transfer Conveyor gallery will be inspected for cleanliness on at least a weekly basis and follow-up actions documented.
- f. Any equipment utilized in the receiving area building shall be confined to the building. If necessary to take equipment from the facility, vehicles shall be inspected for loose RDF and cleaned before leaving the area.





### Red Wing Steam Generating Plant Inspection Report

Receiving Area Building Inspection | Transfer Conveyor Gallery Inspection | Site Fugitive RDF Inspection

Inspector: \_\_\_\_\_ Date: \_\_\_\_\_

Receiving Area Building Inspection Findings: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Transfer Conveyor Gallery Inspection Findings: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Site Fugitive RDF Inspection Findings: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Corrective Actions Taken/ Followup on Receiving Area Building Findings: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Sign when followup actions are completed: \_\_\_\_\_ Date: \_\_\_\_\_

Corrective Actions Taken/ Followup on Transfer Conveyor Gallery Findings: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Sign when followup actions are completed: \_\_\_\_\_ Date: \_\_\_\_\_

Corrective Actions Taken/ Followup on Site Fugitive RDF Inspection Findings: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Sign when followup actions are completed: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

## Appendix D. Waste Composition Study

\*Also included in the Tempo central file as a .pdf document

January 27, 2023

Mr. Brian Schmidt  
Environmental Analyst – Landfill Operations Xcel Energy Services, Inc.  
Re: Solid Waste Composition Analyses – Letter Report

Dear Mr. Schmidt:

### OVERVIEW

Per request of Xcel Energy Services, Inc. (Xcel Energy), Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) completed a solid waste fractional, proximate, ultimate, and heating value analyses (Study) for the Ramsey/Washington Recycling & Energy Center (R&E Facility). Provided below is the letter report describing the Study methodology, the detailed results from the analyses, statistical interpretation of these results, and overall conclusions.

### METHODOLOGY

#### *Objective*

The objective of the Study is to gather data consistent with Minnesota Rule 7007.0501 Subpart 2(A) requiring a solid waste fractional, proximate, ultimate, and heating value analysis for the air emissions permits for Xcel Energy Red Wing and Wilmarth Generating plants, which both receive processed refuse derived fuel (RDF) from the R&E Facility. This study is an assessment of the solid waste as-delivered to R&E Facility prior to production of RDF. The proposed methodology represents a defensible means to complete the analysis based on the use of proven field and testing methodologies. The methodology developed is consistent with ASTM Designation: D5231-92 (2016); Standard Test Method for Determination of the Composition of Unprocessed Municipal Solid Waste (ASTM Standard).

#### *Review of Facility Transaction Data*

A written request for information was forwarded to R&E staff to gather and analyze facility transaction records. The data forwarded was reviewed to assess the historical quantities of solid waste received, number and frequency of vehicles depositing solid waste at the R&E Facility, and generator types of solid waste received at the R&E Facility. R&E Facility staff provided three, non-consecutive weeks of daily transaction data including waste quantities, waste type, vehicle number, time of day for individual transactions, and other related information. In addition, R&E Facility staff provided weekly summaries for each of the three weeks of data.

This data was analyzed to develop the sampling methodology that provides representative and statistically sound results.

#### *Materials Sampling Methodology*

The ASTM Standard identified above provides the basis for developing the materials sampling methodology. The materials sampling methodology includes a series of steps including the selection of the vehicles for sampling and obtaining the sample of materials for sorting from each of the selected vehicles. The key to this methodology hinges upon minimizing any bias that may enter the process of selecting vehicles and the materials to sample. Based on our review of the R&E Facility transaction data and the applicable ASTM standard methodology, we developed the sampling plan as depicted below in Table 1.

Table 1: Sampling Plan				
Day of The Week	Daily Percentage of Total Solid Waste Quantities Received (Average)	Number of Collection Vehicles Depositing Materials (Average)	Representative Number of Samples	Adjusted Number of Samples
Monday	23.9%	255	7	7
Tuesday	18.5%	223	6	7
Wednesday	19.8%	224	6	7
Thursday	18.5%	212	5	7
Friday	17.5%	212	5	2 <sup>1</sup>
Saturday	1.7%	112	1	0
Sunday	0.0%	0	0	0

1. Fewer samples were taken due to extreme cold weather. Additional samples were taken on previous days to achieve overall sampling goals.

The above reflects a similar quantity of materials received Monday through Friday with Saturday and Sunday representing days when smaller quantities of materials are received. We also calculated the average number of vehicles for each day of the week to assist in developing the sampling methodology. The proposed number of “representative” samples are proportional to the average quantities of materials received each day of the week for the overall materials received in a “normal” week. The representative number of samples was adjusted to reflect facility and staffing availability.

MSW is transported to the R&E Facility primarily via traditional rear and front load refuse collection vehicles, roll offs, transfer trailers, and other self-haul vehicles. Transfer trailers have a much greater capacity than traditional collection vehicles. As a result, we evaluated the transactional data to estimate the proportion of MSW received at the R&E Facility via transfer trailers to determine the scope of materials sampling needed from transfer trailers. Based on review of the transaction data, the estimated proportion of MSW received at the R&E Facility via transfer trailers was 52% for the identified timeframe as outlined in Table 2 below.

Table 2: MSW Hauling Vehicles Comparison			
	Number of Vehicles per Week <sup>1</sup>	Total MSW (Tons) <sup>2</sup>	Weighted Capacity (%) <sup>3</sup>
Front/Rear/Side Loaders	458	3,013	38.3%
Roll Offs	224	545	6.9%
Transfer Trailers	212	4,230	53.8%
Other	218	74	1.0%

1. Number of Vehicles per Week compiled from transactional data provided by R&E staff.
2. Total MSW compiled from transactional data provided by R&E staff.
3. Weighted capacity calculated from Total MSW per generator type.

Based on this estimate, the Project Team chose to stratify its sampling of materials to include samples from

front/rear/side loaders, roll offs, and transfer trailers. “Other” collection vehicles accounted for a small percentage of the total MSW received at the R&E Facility, and thus were not included in the representative number of samples. “Other” collection vehicles are defined as small self-haul vehicles, excluding front/rear/side loaders, roll offs and transfer trailers. The Project Team selected 13 front/rear/side loaders, 2 roll offs and 15 transfer trailer vehicles to sample using the “Nth truck” approach. Burns & McDonnell relied on both driver interviews and the sampling randomization inherent in the “Nth truck” approach to select vehicles to sample materials. The Nth truck approach is based on the number of samples required for the Study to yield statistically sound results and the number of vehicles expected at the facility each day that will be delivering solid waste.

A member of the waste sort crew interviewed the driver of the Nth truck selected to determine the origin of the materials being hauled for disposal and confirm that the vehicles are delivering municipal solid waste. Then, individual samples were randomly selected from each selected load of MSW to be consistent with the ASTM Standard.

Overall, the primary steps of the methodology involved the following:

- Gained approval from Xcel Energy of the material categories;
- Selected the applicable MSW collection vehicles to sample via the “Nth truck” approach as described above,
- Selected a random sample of MSW of at least 200 lbs. from the identified loads by coordinating with facility operational staff,
- Once each sample was selected, the materials were pre-sorted for any hazardous or infectious wastes, and
- Materials sorting team sampled and sorted a total of 30 samples into the agreed upon material categories during the week of November 14th.

The proposed material categories for this Study were similar to those used in the 2017 R&E Facility study to ensure compatibility for comparison purposes, with a few exceptions to provide more detailed data related to food waste, carpet and clothing. The material categories are provided below and the material category detailed definitions are included as Attachment A.

- Paper – Newsprint
- Paper – OCC and Kraft bags
- Paper – Mixed Recyclable Paper
- Paper – Compostable Paper
- Paper – Non-recyclable Non- compostable paper
- Plastic – HDPE Bottles/Jars
- Plastic – PET Bottles/Jars
- Plastic – Polypropylene (PP)
- Plastic – Polystyrene (PS)
- Plastic – Film and Flexible Packaging
- Plastic – Other Plastics
- Metals – Aluminum Containers
- Metals – Ferrous Containers
- Metals – Other Ferrous

- Metals – Other Non-Ferrous
- Glass – Containers
- Glass – Non-Containers
- Organic Materials – Yard Waste
- Organic Materials – Food Waste (unpackaged)
- Organic Materials – Food Waste (packaged)
- Organic Materials – Wood Waste (untreated)
- Organic Materials – Wood Waste (treated)
- Organic Materials – Other
- Construction & Demolition – Shingles
- Construction & Demolition – Other
- Other – Batteries
- Other – Mercury Containing Lamps
- Other – Paint Containers
- Other – Hazardous Wastes
- Other – Household Appliances
- Other – Electronics
- Other – Furniture
- Other – Bulky Wastes
- Other – Carpet
- Other – Clothing
- Other – Textiles
- Other – Inorganics
- Other – Fines/Supermix

- Upon sorting the MSW materials into the designated containers by material category, the sorting crew weighed these materials for each of the samples and recorded the materials weights per sample on designated data forms.
- Before discarding the materials, the sorting crew obtained grab samples of materials from each of the combustible fractions to create combustible composite samples.
- The composite samples were then transported to the designated laboratory for proximate, ultimate, and heating value analyses.

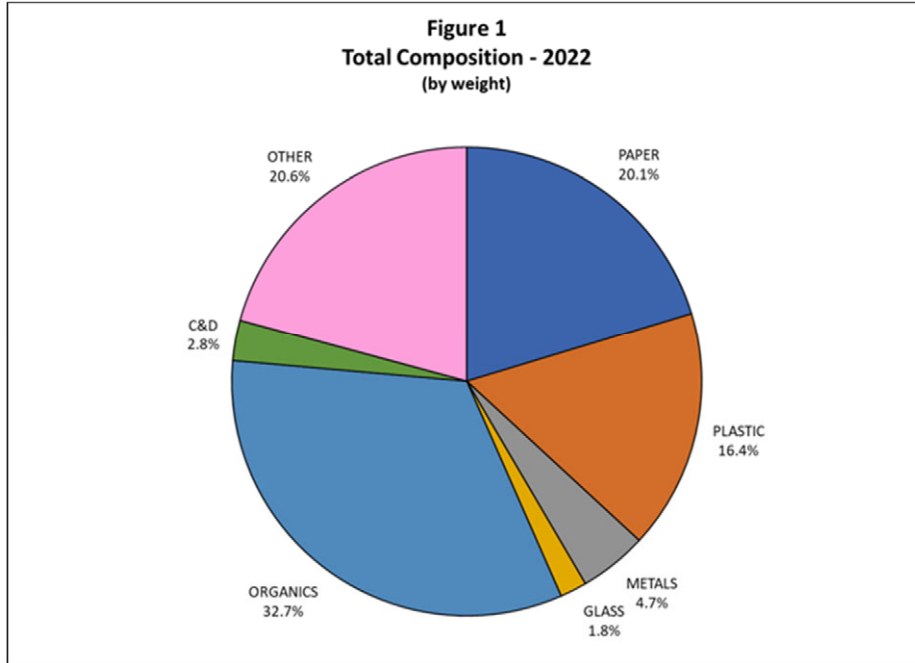
## RESULTS

As specified in Minnesota Rule 7007.0501 Subpart 2(A)1, the results of the solid waste fractional analysis were characterized as percentages by weight. Per the Minnesota Pollution Control Agency (MPCA) rules, “at minimum, the material categories shall include paper, cardboard, plastic, ferrous and nonferrous metals, glass, organic, inorganic, recyclable, problem materials and household hazardous wastes, including mercury containing materials.”

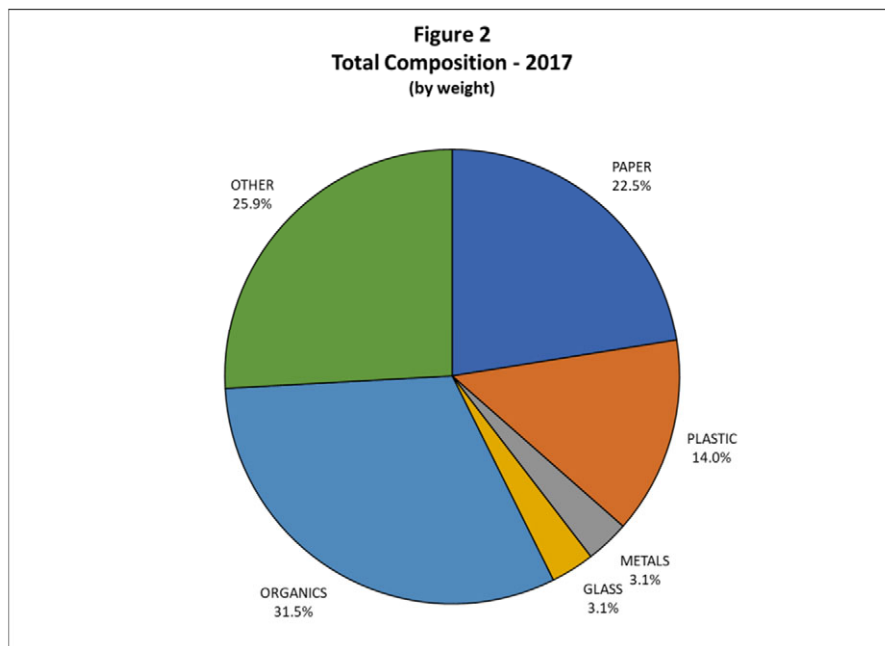
The data from the 30 samples were statistically analyzed to identify the mean (by weight) and the upper and lower confidence intervals for each primary and secondary material type. First, results were developed for the composition data gathered for both the MSW delivered via traditional front/rear/side loaders, roll offs and transfer trailers. These results were then combined to calculate the total composition by weighting the three generator type results based on

the respective proportion of estimated quantities delivered to the R&E Facility. The individual data sheets are included as Attachment B.

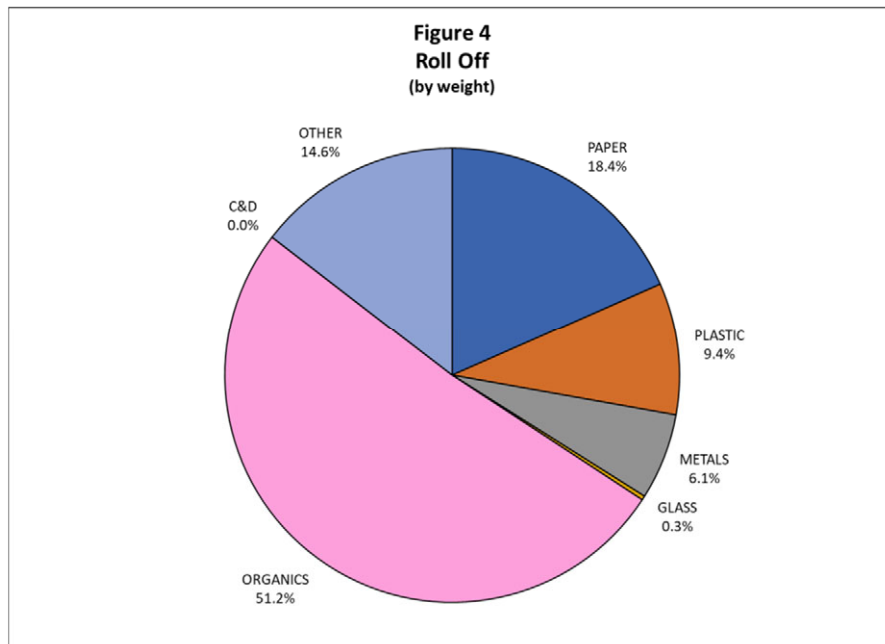
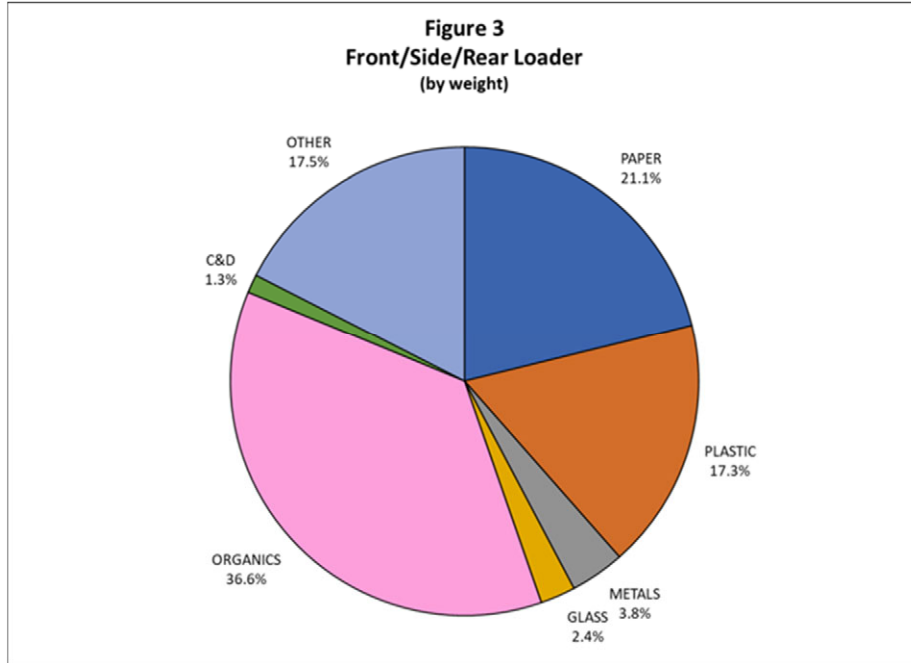
The overall results (by weight) for the primary material categories for the total composition are provided in Figure 1.



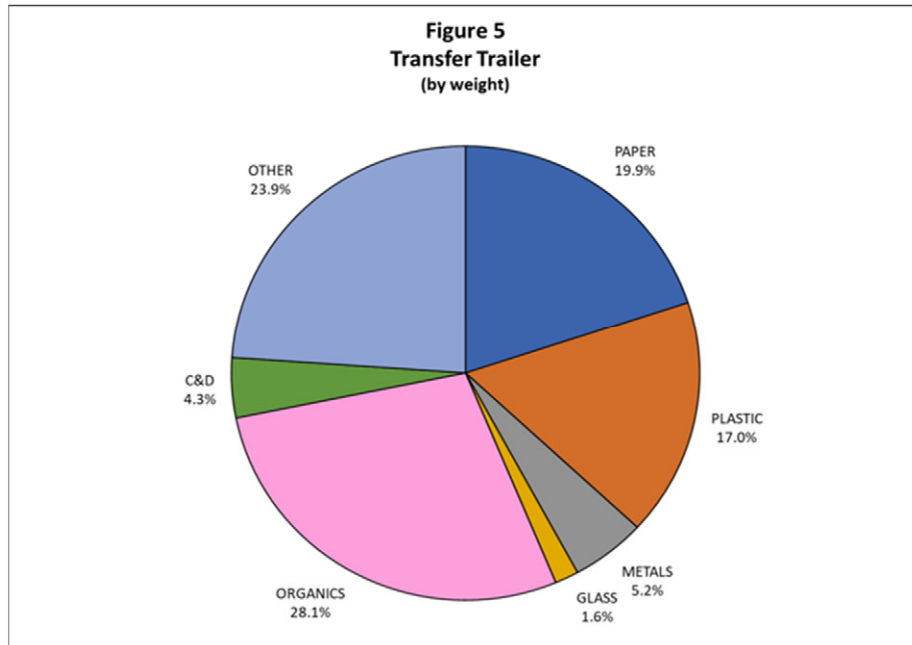
The overall results (by weight) for the primary material categories for the total composition from the 2017 study are provided below in Figure 2. As reflected in the comparison of the results of the two studies, paper composes a smaller proportion, plastics composes a slightly greater proportion, and organics compose a similar proportion of the solid waste stream in 2022 compared to the results in 2017.



The overall results (by weight) for the primary material categories for front/rear/side loaders, roll offs and transfer trailers from the current study are provided below in Figures 3 through 5.







The detailed results (by weight) for both the primary and secondary material categories for the total composition are provided below in Table 3.

Table 3: Total Composition (By Weight)				
			90% Conf. Int.	
		Mean	Upper Bound	Lower Bound
<b>PAPER</b>				
1	Newsprint	0.3%	0.6%	0.0%
2	Old Corrugated and Kraft bags	3.2%	5.5%	1.1%
3	Mixed Recycle Paper	5.1%	10.0%	3.5%
4	Compostable Paper	10.5%	13.8%	7.3%
5	Non-recyclable/Non-compostable paper	1.0%	1.4%	0.7%
<b>Subtotal Paper</b>		<b>20.1%</b>	<b>27.1%</b>	<b>15.8%</b>
<b>PLASTIC</b>				
6	HDPE Containers	0.5%	0.8%	0.3%
7	PET Containers	1.4%	1.8%	1.1%
8	Polypropylene (PP)	0.8%	1.0%	0.6%
9	Polystyrene (PS)	0.7%	1.0%	0.4%
10	Film and Flexible Packaging	5.2%	7.4%	3.8%
11	All Other Plastics	7.8%	11.5%	5.3%
<b>Subtotal Plastic</b>		<b>16.4%</b>	<b>21.8%</b>	<b>13.1%</b>
<b>METALS</b>				
12	Aluminum Containers	0.7%	0.9%	0.4%
13	Ferrous Containers	0.6%	0.8%	0.3%
14	Other Ferrous	1.7%	5.4%	0.1%
15	Other Non-Ferrous	1.7%	3.7%	0.2%
<b>Subtotal Metals</b>		<b>4.7%</b>	<b>9.5%</b>	<b>1.9%</b>

<b>GLASS</b>				
16	Glass Containers	1.3%	1.9%	0.8%
17	Other (non-container) glass	0.5%	0.9%	0.1%
<b>Subtotal Glass</b>		<b>1.8%</b>	<b>2.6%</b>	<b>1.2%</b>
<b>ORGANICS</b>				
18	Yard Waste	4.2%	7.8%	1.8%
19	Food Waste (unpackaged)	14.6%	26.3%	10.2%
20	Food Waste (packaged)	6.1%	8.9%	3.6%
21	Wood Waste (untreated)	1.9%	10.2%	0.3%
22	Wood Waste (treated)	2.2%	6.6%	0.1%
23	Other Organic Materials	3.7%	5.0%	2.3%
<b>Subtotal Organics</b>		<b>32.7%</b>	<b>37.2%</b>	<b>28.2%</b>
<b>C&amp;D</b>				
24	Shingles	0.0%	0.0%	0.0%
25	Other C&D	2.8%	5.5%	0.2%
<b>Subtotal C&amp;D</b>		<b>2.8%</b>	<b>5.5%</b>	<b>0.2%</b>

<b>Table 3: Total Composition (By Weight)</b>				
		Mean	90% Conf. Int.	
			Upper Bound	Lower Bound
<b>OTHER</b>				
26	Batteries	0.0%	0.1%	0.0%
27	Mercury Containing Lamps	0.0%	0.0%	0.0%
28	Paint Containers	0.0%	0.0%	0.0%
29	Hazardous Wastes	0.6%	2.9%	0.0%
30	Household Appliances	1.1%	2.4%	0.0%
31	Electronics	0.9%	2.3%	0.2%
32	Furniture	4.7%	8.3%	1.1%
33	Other Bulky Wastes	2.4%	5.2%	0.1%
34	Carpet	1.1%	2.4%	0.0%
35	Clothing	2.9%	4.7%	1.2%
36	Other Textiles (excluding carpet)	2.5%	3.6%	1.4%
37	Other Inorganics	0.6%	1.3%	0.0%
38	Fines/supermix	3.6%	7.3%	2.5%
<b>Subtotal Other</b>		<b>20.6%</b>	<b>30.3%</b>	<b>14.2%</b>

*Statistical Interpretation*

In evaluating the results, we recommend that both the mean and 90% confidence intervals be reviewed for the various categories. The 90% confidence interval is consistent with the ASTM standards and is considered the solid waste industry statistically accepted standard for similar type studies. A 90% confidence interval represents that there is a 90% level of confidence that the true population mean (i.e., if all the materials received at the R&E Facility were sorted) falls within the identified upper and lower intervals. The mean percentages by weight provide a definitive measure for

characterizing the various materials in the solid waste stream. Because of the limited number of samples for each of the generator types, the mean and confidence interval results for the individual generator types should not be used independently from the overall total composition results.

### CONCLUSIONS

In the context of the results for the solid waste fractional analysis (total composition) for the R&E Facility, we conclude the following:

- The proportion of paper composing MSW is decreasing, specifically ONP with a mean of 0.3%, compared to 1.1% for the 2017 R&E Facility Study, and OCC with a mean of 3.2%, compared to 4.5% for the 2017 R&E Facility Study;
- Hazardous wastes and mercury containing materials compose less than 1% of the waste stream by weight consistent with previous studies;
- The organics category of food waste remained relatively unchanged as proportion of the waste stream, composing approximately 32.7% of the waste stream by weight as compared to 31.5% for the 2017 R&E Facility Study;
- Plastics continue to increase as a proportion of the overall waste stream and are estimated to compose a mean of approximately 16% of the waste stream by weight as compared to 14% for the 2017 R&E Facility Study; and
- Glass continues to decrease as a proportion of the waste stream and are estimated to compose a mean of approximately 2% of the waste stream by weight as compared to 3% for the 2017 R&E Facility Study.

### PROXIMATE, ULTIMATE, AND HEATING VALUE ANALYSES

#### *Methodology*

Samples were taken from solid waste deposited at the R&E Facility for the completion of proximate, ultimate, and heating value analyses. The sorting crew collected grab samples of materials from the randomly selected MSW samples to create composite samples. These composite samples were placed in individual containers for transport to a qualified laboratory. The appropriate chain of custody measures were taken by staff prior to initiating the laboratory analyses. Proximate, ultimate, and heating value analyses were conducted on a total of five composite samples taken from the MSW received at the R&E Facility. All analyses were conducted per the applicable ASTM methods.

#### *Results*

A summary of the results is provided below in Table 4. The detailed results of the proximate and ultimate value analyses are provided as Attachment C. Overall, the parameters of the results reflect the level of variability usually found in similar solid waste analyses.

Table 4: Summary of Proximate and Ultimate Analyses		
	Units	Average
Moisture, Total	Weight %	23.50
Heating Value	BTU/lb.	7395.60

Moisture ranged from 16 to 37 percent with an average of approximately 24%. The average heating value (assumed HHV) was approximately 7396 Btu/lb. as received. This value is higher than the previous study result of 5346 Btu/lb. in 2017. Refuse derived fuel typically has a reported heating value of approximately 4800 to 64001, thus a heating value of 7396 for MSW is higher than the expected range. A robust statistical analysis of each of the tested parameters for all of the samples was not conducted for the purposes of this study.

Thank you for the opportunity to provide these services.

Sincerely,

Robert Craggs  
Solid Waste and Resource Recovery Department Manager

Attachment A – Material Category Definitions  
Attachment B – Waste Sort Data Sheets  
Attachment C – Proximate and Ultimate Analyses

### **Attachment A - Material Category Definitions**

#### *Paper*

Newsprint (ONP) – printed groundwood newsprint, including glossy advertisements and inserts typically found in newspapers.

Old Corrugated Cardboard (OCC) and Kraft Bags - cardboard with a wavy core and not contaminated with other materials such as wax or plastic coating. Includes Kraft (brown paper) bags.

Mixed Recyclable Paper – paper that is recyclable, including but not limited to high grade office paper, residential mixed paper, envelopes, magazines/catalogs, phone books, gable top aseptic containers/cartons. Does not include compostable or non-recyclable paper as defined below.

Compostable Paper - Paper products including BPI-certified paper food packaging, napkins, paper towels, tissues, paper plates, paper cups, and pizza boxes (excludes aseptic packaging and lined/coated paper).

Non-Recyclable/Non-Compostable Paper – Plastic or metal coated paper (excluding gable top and aseptic containers/cartons).

Examples: Wet food packaging, lined paper cups.

#### Key points:

If the sorter is 99% sure that the generator intended to reuse the paper in such a way that it became contaminated for recycling, put that paper into this category (e.g., paper used to dispose of chewing gum, paper sprayed with paint).

If it would take an effort to make the paper recyclable, put it into this category.

#### *Plastic*

HDPE Containers (Bottles/Jars) – natural and pigmented, high-density polyethylene bottles and jars

#### Key points:

Look for the label “2” on the bottom. Examples:

Clear or colored bottles for dairy products, detergent, windshield fluid, motor oil, fabric softener, antifreeze, bleach.

PET Beverage Containers – clear and colored plastic beverage containers composed of polyethylene terephthalate.

#### Key points:

Look for the label “1” on the bottom.

Permit Issued: [month day, year]

Permit Expires: [month day, year]

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PVC - #3 plastics such as cooking oil bottles, plumbing pipes, and a few other items. Polypropylene - #5 plastics packaging including but not limited to yogurt cups/tubs Polystyrene - #6 plastics packaging Film and Flexible Packaging – clear or light-colored plastic bags, grocery bags, and film plastic used for stretch wrapping pallets or other products, shrink wrap.

All Other Plastics – anything plastic that is not identifiable as one of the categories above. Examples: Molded toys, clothes hangers, cleaning tools, plastic hoses, drinking straws, plastic cards.

#### *Metals*

Aluminum Beverage Containers – All beverage containers made from aluminum used for soft drinks, water, beer, fruit juice, sports drink, or other drinkable liquids.

Ferrous (Steel/Tin) Containers – Food and beverage cans and containers composed primarily of iron.

Other Ferrous Metal - all other non-container ferrous metal scrap (e.g. steel, brass, copper).

Other Non-Ferrous Metal – all other non-container, non-ferrous Examples:

Clothes hangers, sheet metal products, pipes, metal scraps.

#### *Glass*

Glass Containers - clear, green, brown, and blue glass beverage containers (e.g. food containers).

Other (Non-Container) Glass – all glass that was not originally a food or beverage container, including plate glass, ceramics, glass plates, cooking utensils, ash trays, mirrors, and fragments.

Key points:

If the glass is broken and not 100% identifiable as food or beverage glass, it belongs in Non- Container Glass.

#### *Organic Materials*

Yard Waste – woody and non-woody plant material.

Food Waste – putrescibles such as food preparation waste, food scraps, spoiled food, kitchen wastes, waste parts from butchered animals, dead animals.

Food Waste (unpackaged) - putrescibles such as food preparation waste, food scraps, spoiled food, kitchen wastes, waste parts from butchered animals, dead animals.

Food Waste (packaged) – fully or partially commercially-packaged food waste.

Wood Waste (untreated) – lumber that is not treated.

Wood Waste (treated) – lumber that is green or brown treated such as railroad ties.

Other Organic Material – any organic material not classified by this category, including, cotton balls, feminine hygiene products, hair, etc.

#### *Construction & Demolition*

Shingles – includes asphalt shingles and tar roofing paper, excluding wood or metal roofing material.

Other Construction & Demolition – remodeling and new construction materials excluding OCC, wood, plastics, and metals which are captured in the other material categories.

Permit Issued: [month day, year]  
Permit Expires: [month day, year]

*Miscellaneous*

Batteries – lead acid, all household (rechargeable and non-rechargeable), and button batteries.

Mercury Containing Lamps – CFLs and others identified as containing mercury.

Paint Containers – oil and latex paint.

Hazardous Wastes – other products characterized as toxic, corrosive, flammable, ignitable, radioactive, poisonous, or reactive. (e.g. solvents, pesticides, antifreeze)

Household Appliances – products or appliances with electric cord or battery power source, including but not limited to small kitchen and bathroom appliances (toasters, hair dryers, etc.), radios.

Electronics – laptops, computer monitors, televisions, printers, video games, cell phones, DVD players and other electronics.

Furniture – large moveable equipment such as tables, chairs, sofas, mattresses, box springs and other components used to make a space suitable for living or working.

Other Bulky Wastes – includes large, hard-to-handle items and base components that are not defined in the other material categories.

Carpet – flooring material

Clothing – shirts, jackets, pants, undergarments and other cloth items designed to be worn to cover the body.

Other Textiles – bedding, curtains, blankets, and other cloth material.

Other Inorganics – waste material originating from non-biological/industrial processes not identified by other categories listed above.

Fines/Supermix – residual material remaining after waste sorting, not identified by other categories listed above.

**Attachment B – Waste Sort Data Sheets**

\*The original data sheets are provided in the .pdf copy of the Waste Composition Study in Tempo

Date: 11/14/22					
Day: Monday					
Time:					
Sample:					
Ticket:					
Category:					
Comments:					
Materials		Weights (Start)			Totals (End)
Paper					
1) Newspaper		5.4			5.4

Permit Issued: [month day, year]  
 Permit Expires: [month day, year]

2) Old corrugated and Kraft bags	15.6				15.5
3) Mixed recyclable paper	8.3				8.3
4) Compostable paper	15.4				15.4
5) Non-recyclable/non-compostable	8.4				8.4
Plastics					
6) HDPE containers	8.7				8.7
7) PET containers	8.9				8.9
8) Polypropylene (PP)	5.3				5.3
9) Polystyrene (PS)	5.6				5.6
10) Film and flexible packaging	8.9				8.9
11) All other plastics	15.3				15.4
Metals					
12) Aluminum containers	1.6				1.6
13) Ferrous containers	2.3				2.2
14) Other Ferrous	2.4				2.4
15) Other non-ferrous	1.6				1.6
Glass					
16) Glass containers	5.2				5.3
17) Other (non-container) glass	5.5				5.5
Organics					
18) Yard waste	8.3				8.2
19) Food waste	2.3				2.3
20) Food waste packaged	2.3				2.3
21) Wood waste (untreated)	5.6				5.6
22) Wood waste (treated)	5.6				5.6
23) Other organic materials	5.8				5.8
C&D					
24) Shingles					
25) Other C&D	8.3				8.3
Other					
26) Batteries					
27) Mercury containing lamps					
28) Paint containers					
29) Hazardous waste					
30) Household appliances					
31) Electronics					
32) Furniture					
33) Other bulky wastes					
34) Carpet					
35) Clothing	8.4				8.4
36) Other textiles	5.7				5.6
37) Other inorganics	5.7				5.7
38) Fines/supermix	5.3				5.3
Totals					

Permit Issued: [month day, year]  
 Permit Expires: [month day, year]

Date: 11/14/22					
Day: Monday					
Time: 7:55AM					
Sample: 1					
Ticket:					
Category: Transfer Tractor/Trailer					
Comments: MBI – 1379 Advanced					
Materials		Weights		Totals	
Paper					
1) Newspaper	0.5				
2) Old corrugated and Kraft bags	17.2				
3) Mixed recyclable paper	18.7				
4) Compostable paper	54.8	9.7			
5) Non-recyclable/non-compostable	11.4				
Plastics					
6) HDPE containers	17.5				
7) PET containers	14.3				
8) Polypropylene (PP)	8.3				
9) Polystyrene (PS)	6.2				
10) Film and flexible packaging	25.0	14.6			
11) All other plastics	30.0				
Metals					
12) Aluminum containers	3.4	2.1			
13) Ferrous containers	5.5				
14) Other Ferrous	2.5				
15) Other non-ferrous	2.6				
Glass					
16) Glass containers	6.7				
17) Other (non-container) glass					
Organics					
18) Yard waste					
19) Food waste	31.3	16.2	10.3	15.1	
20) Food waste packaged	14.0				
21) Wood waste (untreated)	5.8				
22) Wood waste (treated)					
23) Other organic materials	9.0				
C&D					
24) Shingles					
25) Other C&D	0.2				
Other					
26) Batteries	0.1				
27) Mercury containing lamps					
28) Paint containers					
29) Hazardous waste	9 – sharps (flu vaccine line) unused				
30) Household appliances					
31) Electronics					
32) Furniture	13.8				



Permit Issued: [month day, year]  
 Permit Expires: [month day, year]

33) Other bulky wastes				
34) Carpet				
35) Clothing	0.3			
36) Other textiles	0.6			
37) Other inorganics				
38) Fines/supermix	13.5 – food 100%			
Totals				

Date: 11/14/22					
Day: Monday					
Time: 8:12AM					
Sample: 2					
Ticket:					
Category: Front					
Comments: Comm. Maplewood St Paul					
	Materials	Weights			Totals
Paper					
1)	Newspaper				
2)	Old corrugated and Kraft bags	16.6			
3)	Mixed recyclable paper	13.7			
4)	Compostable paper	80.1	16.1 – wet and heavy with Chick Fil-A food		
5)	Non-recyclable/non-compostable	14.7			
Plastics					
6)	HDPE containers	9.9			
7)	PET containers	9.5			
8)	Polypropylene (PP)	6.4			
9)	Polystyrene (PS)	7.6	6.9	8.0	
10)	Film and flexible packaging	14.6	16.7		
11)	All other plastics		34.5		
Metals					
12)	Aluminum containers	2.1			
13)	Ferrous containers	3.7			
14)	Other Ferrous				
15)	Other non-ferrous	3.4			
Glass					
16)	Glass containers				
17)	Other (non-container) glass	0.1			
Organics					
18)	Yard waste				
19)	Food waste	51.3	11.5	12.1	
20)	Food waste packaged	12.4			
21)	Wood waste (untreated)				
22)	Wood waste (treated)				
23)	Other organic materials	7.5			
C&D					

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24) Shingles					
25) Other C&D					
Other					
26) Batteries					
27) Mercury containing lamps					
28) Paint containers					
29) Hazardous waste					
30) Household appliances					
31) Electronics					
32) Furniture					
33) Other bulky wastes					
34) Carpet					
35) Clothing					
36) Other textiles	0.1				
37) Other inorganics					
38) Fines/supermix	14.6 – food 100%				
Totals					

Date: 11/14/22					
Day: Monday					
Time: 10:38AM					
Sample: 3					
Ticket:					
Category: Side					
Comments: Woodbury Road					
	Materials	Weights			Totals
Paper					
1)	Newspaper				
2)	Old corrugated and Kraft bags	17.1			
3)	Mixed recyclable paper	21.6			
4)	Compostable paper	53.0			
5)	Non-recyclable/non-compostable	9.8			
Plastics					
6)	HDPE containers	9.4			
7)	PET containers	12.0			
8)	Polypropylene (PP)	7.1			
9)	Polystyrene (PS)	6.0			
10)	Film and flexible packaging	19.4			
11)	All other plastics	30.0			
Metals					
12)	Aluminum containers	2.1			
13)	Ferrous containers	3.9			
14)	Other Ferrous	2.5			
15)	Other non-ferrous	3.9			
Glass					

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 Permit Expires: [month day, year]

16) Glass containers	9.5				
17) Other (non-container) glass	0.4				
Organics					
18) Yard waste	10.8	11.4 Pumpkin	8.7		
19) Food waste	10.6	16.9	20.5		
20) Food waste packaged	6.2	9.4			
21) Wood waste (untreated)	0.6				
22) Wood waste (treated)	0.2				
23) Other organic materials	26.5				
C&D					
24) Shingles					
25) Other C&D	2.0				
Other					
26) Batteries	0.1				
27) Mercury containing lamps					
28) Paint containers					
29) Hazardous waste					
30) Household appliances					
31) Electronics	0.2				
32) Furniture					
33) Other bulky wastes					
34) Carpet					
35) Clothing	18.1				
36) Other textiles	7.7				
37) Other inorganics					
38) Fines/supermix	14.3 – food 100%				
Totals					

Date: 11/14/22					
Day: Monday					
Time: 11:15AM					
Sample: 4					
Ticket:					
Category: Transfer Tractor/Trailer					
Comments: Hagen Truck Greg Advanced					
Materials	Weights				Totals
Paper					
1) Newspaper					
2) Old corrugated and Kraft bags	22.7				
3) Mixed recyclable paper	12.9				
4) Compostable paper	32.4				
5) Non-recyclable/non-compostable	10.1				
Plastics					
6) HDPE containers	9.8				
7) PET containers	5.8				

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8) Polypropylene (PP)	6.0				
9) Polystyrene (PS)	10.4				
10) Film and flexible packaging	18.2				
11) All other plastics	21.7				
Metals					
12) Aluminum containers	1.9				
13) Ferrous containers					
14) Other Ferrous					
15) Other non-ferrous	83.0	2.1			
Glass					
16) Glass containers	6.3				
17) Other (non-container) glass	7.5				
Organics					
18) Yard waste	0.1				
19) Food waste	25.0	15.9			
20) Food waste packaged		8.7			
21) Wood waste (untreated)	5.1				
22) Wood waste (treated)					
23) Other organic materials	11.5				
C&D					
24) Shingles					
25) Other C&D					
Other					
26) Batteries					
27) Mercury containing lamps					
28) Paint containers					
29) Hazardous waste					
30) Household appliances	16.9	1.8			
31) Electronics					
32) Furniture					
33) Other bulky wastes	43.0 heater				
34) Carpet					
35) Clothing	0.1				
36) Other textiles	19.1				
37) Other inorganics					
38) Fines/supermix	11.1 -95% food, 3% other non-paper, 2% other non-plastic				
Totals					

Date: 11/14/22
Day: Monday
Time: 12:07PM
Sample: 5
Ticket:
Category: Front
Comments: Apts & Bars & Restaurants mixed, St Paul

Materials	Weights				Totals
<b>Paper</b>					
1) Newspaper	6.4				
2) Old corrugated and Kraft bags	19.2				
3) Mixed recyclable paper	25.8				
4) Compostable paper	36.6				
5) Non-recyclable/non-compostable	10.9				
<b>Plastics</b>					
6) HDPE containers	10.3				
7) PET containers	12.7				
8) Polypropylene (PP)	6.7				
9) Polystyrene (PS)	6.1				
10) Film and flexible packaging	16.4				
11) All other plastics	7.2	29.6			
<b>Metals</b>					
12) Aluminum containers	2.9	3.0	1.8		
13) Ferrous containers		3.9			
14) Other Ferrous	8.6	2.9			
15) Other non-ferrous	3.8				
<b>Glass</b>					
16) Glass containers	13.1				
17) Other (non-container) glass	6.2				
<b>Organics</b>					
18) Yard waste	0.1				
19) Food waste	17.0	29.1			
20) Food waste packaged	9.8	6.4	7.1		
21) Wood waste (untreated)	6.2				
22) Wood waste (treated)	5.6				
23) Other organic materials	14.2				
<b>C&amp;D</b>					
24) Shingles					
25) Other C&D					
<b>Other</b>					
26) Batteries	0.1				
27) Mercury containing lamps					
28) Paint containers					
29) Hazardous waste					
30) Household appliances					
31) Electronics	3.5				
32) Furniture					
33) Other bulky wastes	5.2				
34) Carpet					
35) Clothing	31.6				
36) Other textiles	7.4	13.3	4.5		
37) Other inorganics	6.3				
38) Fines/supermix	12.6 – 90% food, 5% non-paper, 5% non-plastic				
<b>Totals</b>					

Date: 11/14/22					
Day: Monday					
Time: 2:06PM					
Sample: 6					
Ticket:					
Category: Rear					
Comments: Woodbury Road					
Materials		Weights		Totals	
Paper					
1) Newspaper		6.6			
2) Old corrugated and Kraft bags		17.4			
3) Mixed recyclable paper		18.0			
4) Compostable paper		37.2			
5) Non-recyclable/non-compostable		9.7			
Plastics					
6) HDPE containers		9.7			
7) PET containers		10.9			
8) Polypropylene (PP)		7.7			
9) Polystyrene (PS)		6.3			
10) Film and flexible packaging		17.2			
11) All other plastics		26.4			
Metals					
12) Aluminum containers		2.4			
13) Ferrous containers		4.0			
14) Other Ferrous		1.3			
15) Other non-ferrous		2.7			
Glass					
16) Glass containers		9.5			
17) Other (non-container) glass		0.1			
Organics					
18) Yard waste		21.2		9.6	
19) Food waste		11.8		21.2	
20) Food waste packaged		6.3		5.6	
21) Wood waste (untreated)					
22) Wood waste (treated)		9.7		5.6	
23) Other organic materials		25.0			
C&D					
24) Shingles					
25) Other C&D					
Other					
26) Batteries		0.1			
27) Mercury containing lamps					
28) Paint containers					
29) Hazardous waste					

Permit Issued: [month day, year]  
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30) Household appliances	23.0				
31) Electronics	0.1				
32) Furniture					
33) Other bulky wastes					
34) Carpet					
35) Clothing	19.0				
36) Other textiles	6.2				
37) Other inorganics					
38) Fines/supermix	12.7 – 82% food, 5% non-plastic, 7% non-paper				
Totals					

Date: 11/14/22					
Day: Monday					
Time: 3:00PM					
Sample: 7					
Ticket:					
Category: Transfer Tractor/Trailer					
Comments: Allied Blane 630 Metro					
	Materials	Weights			Totals
Paper					
1) Newspaper					
2) Old corrugated and Kraft bags	17.6				
3) Mixed recyclable paper	23.5				
4) Compostable paper	8.9	39.2			
5) Non-recyclable/non-compostable	11.9				
Plastics					
6) HDPE containers	12.3				
7) PET containers	13.7				
8) Polypropylene (PP)	7.8				
9) Polystyrene (PS)	6.6				
10) Film and flexible packaging	14.3	16.4			
11) All other plastics	6.6 basketballs	26.9			
Metals					
12) Aluminum containers	3.1	2.5			
13) Ferrous containers	3.0				
14) Other Ferrous	3.4	5.8			
15) Other non-ferrous	2.6	1.6			
Glass					
16) Glass containers	11.3				
17) Other (non-container) glass	6.2				
Organics					
18) Yard waste					
19) Food waste	14.8	13.3	13.7		
20) Food waste packaged	11.8	10.9	5.3		
21) Wood waste (untreated)	7.8				

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22) Wood waste (treated)	7.1				
23) Other organic materials	11.0				
C&D					
24) Shingles					
25) Other C&D					
Other					
26) Batteries	0.1				
27) Mercury containing lamps					
28) Paint containers					
29) Hazardous waste	0.3 medicine				
30) Household appliances					
31) Electronics	0.5				
32) Furniture					
33) Other bulky wastes					
34) Carpet					
35) Clothing	18.6				
36) Other textiles	2.6	1.7	7.6	12.2 shoes	
37) Other inorganics	7.1				
38) Fines/supermix	12.1 – 90% food, 5% non-plastic, 5% non-paper				
Totals					

Date: 11/15/22					
Day: Tuesday					
Time: 7:08AM					
Sample: 8					
Ticket:					
Category: Transfer Tractor/Trailer					
Comments: Hagen Greg Advanced					
	Materials	Weights			Totals
Paper					
1) Newspaper	5.6				
2) Old corrugated and Kraft bags	18.2				
3) Mixed recyclable paper	25.6				
4) Compostable paper	39.2				
5) Non-recyclable/non-compostable	11.7				
Plastics					
6) HDPE containers	10.7				
7) PET containers	11.6				
8) Polypropylene (PP)	7.6				
9) Polystyrene (PS)	6.6				
10) Film and flexible packaging	30.7	25.9			
11) All other plastics	31.7				
Metals					
12) Aluminum containers	3.0				
13) Ferrous containers	2.8				
14) Other Ferrous	2.6				



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15) Other non-ferrous	2.7				
Glass					
16) Glass containers	6.6	1.4			
17) Other (non-container) glass	5.9				
Organics					
18) Yard waste	12.1				
19) Food waste	23.4	13.8			
20) Food waste packaged	9.6	16.4	11.8		
21) Wood waste (untreated)	5.9				
22) Wood waste (treated)	5.9				
23) Other organic materials	16.0 dog feces	12.2	0.4		
C&D					
24) Shingles					
25) Other C&D					
Other					
26) Batteries	0.1				
27) Mercury containing lamps					
28) Paint containers					
29) Hazardous waste					
30) Household appliances					
31) Electronics					
32) Furniture					
33) Other bulky wastes					
34) Carpet					
35) Clothing	10.5				
36) Other textiles	7.1				
37) Other inorganics	5.7				
38) Fines/supermix	15.1				
Totals	95% food, heavy with lots of coffee grounds, 5% non-plastic				

Date: 11/15/22					
Day: Tuesday					
Time: 7:44AM					
Sample: 9					
Ticket:					
Category: Transfer Tractor/Trailer					
Comments: Malcom Metro					
	Materials	Weights			Totals
Paper					
1) Newspaper	5.6				
2) Old corrugated and Kraft bags	15.9				
3) Mixed recyclable paper	26.9				
4) Compostable paper	32.0				
5) Non-recyclable/non-compostable	9.5				
Plastics					

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6) HDPE containers	10.2				
7) PET containers	11.9				
8) Polypropylene (PP)	7.2				
9) Polystyrene (PS)	6.4				
10) Film and flexible packaging	22.6				
11) All other plastics	24.9				
Metals					
12) Aluminum containers	2.9				
13) Ferrous containers	5.5				
14) Other Ferrous	2.7				
15) Other non-ferrous	3.6				
Glass					
16) Glass containers	11.3				
17) Other (non-container) glass	12.4				
Organics					
18) Yard waste	16.8 pumpkin	12.9			
19) Food waste	20.3	16.9			
20) Food waste packaged	13.2	3.0			
21) Wood waste (untreated)					
22) Wood waste (treated)	6.9				
23) Other organic materials	17.4	0.2			
C&D					
24) Shingles					
25) Other C&D					
Other					
26) Batteries	0.1				
27) Mercury containing lamps					
28) Paint containers					
29) Hazardous waste	0.1 pills				
30) Household appliances					
31) Electronics	0.3				
32) Furniture					
33) Other bulky wastes					
34) Carpet					
35) Clothing	40.9				
36) Other textiles	7.4	6.0			
37) Other inorganics	13.5				
38) Fines/supermix	14.1 – 80% food, lots of coffee grounds, 20% inorganics, kitty litter				
Totals	Lots of textile both clothing and non-clothing				

Date: 11/15/22
Day: Tuesday
Time: 8:56AM
Sample: 10
Ticket:
Category: Front
Comments: Washington Co. Comm.

Materials	Weights				Totals
<b>Paper</b>					
1) Newspaper					
2) Old corrugated and Kraft bags	19.4				
3) Mixed recyclable paper	17.4				
4) Compostable paper	40.0	46.8			
5) Non-recyclable/non-compostable	12.7				
<b>Plastics</b>					
6) HDPE containers	8.9				
7) PET containers	13.7				
8) Polypropylene (PP)	7.0				
9) Polystyrene (PS)	7.1	7.1			
10) Film and flexible packaging	13.0	17.6			
11) All other plastics	23.0				
<b>Metals</b>					
12) Aluminum containers	3.3	2.1			
13) Ferrous containers	3.2				
14) Other Ferrous	3.0				
15) Other non-ferrous	2.2				
<b>Glass</b>					
16) Glass containers	8.5				
17) Other (non-container) glass					
<b>Organics</b>					
18) Yard waste	36.5				
19) Food waste	18.4	11.6			
20) Food waste packaged	12.3	8.0	5.8		
21) Wood waste (untreated)					
22) Wood waste (treated)					
23) Other organic materials	7.1				
<b>C&amp;D</b>					
24) Shingles					
25) Other C&D	12.7				
<b>Other</b>					
26) Batteries					
27) Mercury containing lamps					
28) Paint containers					
29) Hazardous waste					
30) Household appliances					
31) Electronics					
32) Furniture					
33) Other bulky wastes					
34) Carpet					
35) Clothing	12.2				
36) Other textiles	10.0				
37) Other inorganics					
38) Fines/supermix	15.6 – 95% food, lots of coffee grounds, 2% non-paper, 3% non-plastic				
<b>Totals</b>					

Permit Issued: [month day, year]  
 Permit Expires: [month day, year]

Date: 11/15/22					
Day: Tuesday					
Time: 10:17AM					
Sample: 11					
Ticket:					
Category: Side					
Comments: Oakdale Road					
Materials		Weights		Totals	
Paper					
1) Newspaper	6.0				
2) Old corrugated and Kraft bags	18.2				
3) Mixed recyclable paper	18.0				
4) Compostable paper	48.2				
5) Non-recyclable/non-compostable	9.1				
Plastics					
6) HDPE containers	9.1				
7) PET containers		12.6			
8) Polypropylene (PP)	8.6	6.0			
9) Polystyrene (PS)	8.6	6.0			
10) Film and flexible packaging	20.8				
11) All other plastics	39.4				
Metals					
12) Aluminum containers	2.3				
13) Ferrous containers	7.3				
14) Other Ferrous	5.4				
15) Other non-ferrous	5.2				
Glass					
16) Glass containers	15.5				
17) Other (non-container) glass	2.3	7.6			
Organics					
18) Yard waste	22.8	9.6	15.9		
19) Food waste	23.8	21.8	7.5		
20) Food waste packaged	12.0	13.5	5.2		
21) Wood waste (untreated)					
22) Wood waste (treated)	5.7				
23) Other organic materials	16.2				
C&D					
24) Shingles					
25) Other C&D					
Other					
26) Batteries	0.1				
27) Mercury containing lamps					
28) Paint containers					
29) Hazardous waste	0.3				
30) Household appliances	0.6				
31) Electronics					

Permit Issued: [month day, year]  
 Permit Expires: [month day, year]

32) Furniture					
33) Other bulky wastes					
34) Carpet					
35) Clothing	15.2				
36) Other textiles	10.7				
37) Other inorganics	9.4				
38) Fines/supermix	17.0 – 100% food, coffee grounds				
Totals					

Date: 11/15/22					
Day: Tuesday					
Time: 12:23PM					
Sample: 12					
Ticket:					
Category: Front					
Comments: Washington Co. Comm.					
	Materials	Weights			Totals
Paper					
1) Newspaper					
2) Old corrugated and Kraft bags	19.1				
3) Mixed recyclable paper	13.9				
4) Compostable paper	24.5				
5) Non-recyclable/non-compostable	9.3				
Plastics					
6) HDPE containers	10.4				
7) PET containers	10.7				
8) Polypropylene (PP)	7.0				
9) Polystyrene (PS)	6.4				
10) Film and flexible packaging	14.9				
11) All other plastics	7.1	10.7	5.8	20.9	
Metals					
12) Aluminum containers	2.7				
13) Ferrous containers	4.5				
14) Other Ferrous	3.0				
15) Other non-ferrous	5.8				
Glass					
16) Glass containers	9.4				
17) Other (non-container) glass					
Organics					
18) Yard waste					
19) Food waste	25.0 deer	15.3	7.8		
20) Food waste packaged	15.9	13.0			
21) Wood waste (untreated)					
22) Wood waste (treated)	5.9				
23) Other organic materials	14.4				
C&D					

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24) Shingles					
25) Other C&D					
Other					
26) Batteries					
27) Mercury containing lamps					
28) Paint containers					
29) Hazardous waste					
30) Household appliances					
31) Electronics					
32) Furniture					
33) Other bulky wastes	31.1 bicycle	25.5 mattress		10.1 vacuum	
34) Carpet					
35) Clothing					
36) Other textiles	12.1				
37) Other inorganics	7.5				
38) Fines/supermix	9.4 – 100% food				
Totals					

Date: 11/15/22					
Day: Tuesday					
Time: 1:19PM					
Sample: 13					
Ticket:					
Category: Transfer Tractor/Trailer					
Comments: Hagen					
	Materials	Weights			Totals
Paper					
1) Newspaper					
2) Old corrugated and Kraft bags	22.3				
3) Mixed recyclable paper	15.5				
4) Compostable paper	27.9				
5) Non-recyclable/non-compostable	13.4				
Plastics					
6) HDPE containers	9.2				
7) PET containers	9.9				
8) Polypropylene (PP)	5.7				
9) Polystyrene (PS)	7.7				
10) Film and flexible packaging	17.1				
11) All other plastics	6.8	34.5	8.5		
Metals					
12) Aluminum containers	1.9				
13) Ferrous containers	-				
14) Other Ferrous	5.4				
15) Other non-ferrous	2.4				
Glass					
16) Glass containers	8.2				

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17) Other (non-container) glass	6.5				
Organics					
18) Yard waste					
19) Food waste	7.5				
20) Food waste packaged	3.2				
21) Wood waste (untreated)	0.5				
22) Wood waste (treated)					
23) Other organic materials	9.4	0.2			
C&D					
24) Shingles					
25) Other C&D	0.1				
Other					
26) Batteries	0.1				
27) Mercury containing lamps					
28) Paint containers					
29) Hazardous waste					
30) Household appliances					
31) Electronics					
32) Furniture	39.3	14.5	5.3		
33) Other bulky wastes		30.0			
34) Carpet	23.7	17.7			
35) Clothing	9.5				
36) Other textiles	6.0				
37) Other inorganics					
38) Fines/supermix	7.6 food				
Totals					

Date: 11/15/22					
Day: Tuesday					
Time: 1:45PM					
Sample: 14					
Ticket:					
Category: Rear					
Comments: St Paul Road					
	Materials	Weights			Totals
Paper					
1) Newspaper					
2) Old corrugated and Kraft bags	21.4				
3) Mixed recyclable paper	22.3				
4) Compostable paper	38.1				
5) Non-recyclable/non-compostable	10.5				
Plastics					
6) HDPE containers	10.1				
7) PET containers	16.8				
8) Polypropylene (PP)	8.3	6.1			
9) Polystyrene (PS)	7.2	6.0			

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10) Film and flexible packaging	18.4				
11) All other plastics	26.4	28.2			
Metals					
12) Aluminum containers	2.8	2.1			
13) Ferrous containers	4.5				
14) Other Ferrous	2.8				
15) Other non-ferrous	2.7				
Glass					
16) Glass containers	15.7				
17) Other (non-container) glass	5.8				
Organics					
18) Yard waste	12.9				
19) Food waste	14.5	20.0	21.5		
20) Food waste packaged	12.0	7.0	13.2	12.1	
21) Wood waste (untreated)	5.8				
22) Wood waste (treated)	6.4				
23) Other organic materials	8.7				
C&D					
24) Shingles					
25) Other C&D					
Other					
26) Batteries	0.6				
27) Mercury containing lamps					
28) Paint containers					
29) Hazardous waste	1.3 Raid				
30) Household appliances					
31) Electronics	0.3				
32) Furniture					
33) Other bulky wastes					
34) Carpet					
35) Clothing	11.9				
36) Other textiles	6.1				
37) Other inorganics	19.4				
38) Fines/supermix	14.0 – 98% food, 1% non-paper, 1% non-plastic				
Totals					

Date: 11/16/22					
Day: Wednesday					
Time: 7:10AM					
Sample: 15					
Ticket:					
Category: Transfer Tractor/Trailer					
Comments: Metro					
	Materials	Weights			Totals
Paper					
1) Newspaper	5.7				



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2) Old corrugated and Kraft bags	21.9				
3) Mixed recyclable paper	16.3				
4) Compostable paper	37.8				
5) Non-recyclable/non-compostable	11.8				
Plastics					
6) HDPE containers	9.2				
7) PET containers	13.8				
8) Polypropylene (PP)	8.1				
9) Polystyrene (PS)	6.2				
10) Film and flexible packaging	20.2				
11) All other plastics	30.9				
Metals					
12) Aluminum containers	2.4				
13) Ferrous containers	3.5				
14) Other Ferrous	28.2	9.8			
15) Other non-ferrous	1.9				
Glass					
16) Glass containers	0.6				
17) Other (non-container) glass	10.2				
Organics					
18) Yard waste	22.9	11.3			
19) Food waste	8.5				
20) Food waste packaged	8.8				
21) Wood waste (untreated)	7.7				
22) Wood waste (treated)	6.7	0.6			
23) Other organic materials	12.4 animal bedding		21.8		1.8 hand sanitizer
C&D					
24) Shingles					
25) Other C&D	0.9				
Other					
26) Batteries					
27) Mercury containing lamps					
28) Paint containers					
29) Hazardous waste					
30) Household appliances	12.2				
31) Electronics		0.6	0.3		
32) Furniture					
33) Other bulky wastes	4.3				
34) Carpet					
35) Clothing	10.2				
36) Other textiles	18.8				
37) Other inorganics					
38) Fines/supermix	15.6 – 100% food, coffee grounds				
Totals					

Date: 11/16/22

Permit Issued: [month day, year]  
 Permit Expires: [month day, year]

Day: Wednesday					
Time: 8:04AM					
Sample: 16					
Ticket:					
Category: Side					
Comments: Cottage Grove Rd					
Materials		Weights		Totals	
Paper					
1) Newspaper	6.1				
2) Old corrugated and Kraft bags	15.5	17.3			
3) Mixed recyclable paper	25.7				
4) Compostable paper	43.9				
5) Non-recyclable/non-compostable	9.5				
Plastics					
6) HDPE containers	10.1				
7) PET containers	14.7				
8) Polypropylene (PP)	7.9				
9) Polystyrene (PS)	7.3	5.9			
10) Film and flexible packaging	12.4	14.3			
11) All other plastics	21.4				
Metals					
12) Aluminum containers	2.6				
13) Ferrous containers	7.1	3.5			
14) Other Ferrous	3.4				
15) Other non-ferrous	2.7				
Glass					
16) Glass containers	11.9				
17) Other (non-container) glass	6.2				
Organics					
18) Yard waste					
19) Food waste	22.0	8.4	19.9		
20) Food waste packaged	10.1	6.7	8.2	7.5	9.2
21) Wood waste (untreated)					
22) Wood waste (treated)					
23) Other organic materials	17.4				
C&D					
24) Shingles					
25) Other C&D					
Other					
26) Batteries	0.2				
27) Mercury containing lamps					
28) Paint containers					
29) Hazardous waste					
30) Household appliances					
31) Electronics	1.5				
32) Furniture					
33) Other bulky wastes	3.6				

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34) Carpet					
35) Clothing	8.8				
36) Other textiles	7.0				
37) Other inorganics	11.5				
38) Fines/supermix	14.7 food				
Totals					

Date: 11/16/22  
 Day: Wednesday  
 Time: 9:12AM  
 Sample: 17  
 Ticket:  
 Category: Side  
 Comments: Woodbury Oakdale Comm.

Materials	Weights				Totals
<b>Paper</b>					
1) Newspaper					
2) Old corrugated and Kraft bags	21.3				
3) Mixed recyclable paper	15.7				
4) Compostable paper	25.9				
5) Non-recyclable/non-compostable	12.8				
<b>Plastics</b>					
6) HDPE containers	9.4				
7) PET containers	14.9				
8) Polypropylene (PP)	8.1				
9) Polystyrene (PS)	6.0				
10) Film and flexible packaging	13.7				
11) All other plastics	54.7	24.9			
<b>Metals</b>					
12) Aluminum containers	3.2	2.4			
13) Ferrous containers	2.7				
14) Other Ferrous	2.6				
15) Other non-ferrous		1.7			
<b>Glass</b>					
16) Glass containers	0.6				
17) Other (non-container) glass	0.3				
<b>Organics</b>					
18) Yard waste	22.3		3.7 pumpkin		
19) Food waste	39.3 tubes of frosting		12.4		
20) Food waste packaged	6.2				
21) Wood waste (untreated)	6.6				
22) Wood waste (treated)					
23) Other organic materials	14.9				
<b>C&amp;D</b>					
24) Shingles					
25) Other C&D	0.4				
<b>Other</b>					

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26) Batteries				
27) Mercury containing lamps				
28) Paint containers				
29) Hazardous waste	15.8 oil filters			
30) Household appliances				
31) Electronics		8.1 ceiling fan motor		
32) Furniture	18.8 chair			
33) Other bulky wastes				
34) Carpet				
35) Clothing	14.0			
36) Other textiles	0.1			
37) Other inorganics				
38) Fines/supermix	7.6			
Totals	Food 95%, mixed paper 5%			

Date: 11/16/22					
Day: Wednesday					
Time: 10:15AM					
Sample: 18					
Ticket:					
Category: Transfer Tractor/Trailer					
Comments: Comm. Metro					
Materials	Weights				Totals
Paper					
1) Newspaper					
2) Old corrugated and Kraft bags	17.1				
3) Mixed recyclable paper	20.9				
4) Compostable paper	50.3				
5) Non-recyclable/non-compostable	9.5				
Plastics					
6) HDPE containers	9.0				
7) PET containers	11.7				
8) Polypropylene (PP)	7.5				
9) Polystyrene (PS)	9.2				
10) Film and flexible packaging	23.0				
11) All other plastics	30.8				
Metals					
12) Aluminum containers	2.5				
13) Ferrous containers	2.8				
14) Other Ferrous					
15) Other non-ferrous	2.2				
Glass					
16) Glass containers	6.9				
17) Other (non-container) glass					
Organics					
18) Yard waste	1.6 pumpkin				
19) Food waste	21.7	5.7	16.1		

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20) Food waste packaged	2.8	7.1			
21) Wood waste (untreated)	12.4				
22) Wood waste (treated)	7.4				
23) Other organic materials	14.8				
C&D					
24) Shingles	0.2				
25) Other C&D					
Other					
26) Batteries					
27) Mercury containing lamps					
28) Paint containers					
29) Hazardous waste					
30) Household appliances					
31) Electronics					
32) Furniture	21.5	12.9			
33) Other bulky wastes					
34) Carpet					
35) Clothing	40.0	5.2			
36) Other textiles	10.4				
37) Other inorganics	5.9				
38) Fines/supermix	13.1 – 96% food, 2% non-paper, 2% non-plastic				
Totals					

Date: 11/16/22					
Day: Wednesday					
Time: 11:21AM					
Sample: 19					
Ticket:					
Category: Side					
Comments: Woodbury Rd					
	Materials	Weights			Totals
Paper					
1)	Newspaper	16.7			
2)	Old corrugated and Kraft bags	32.0			
3)	Mixed recyclable paper	17.5			
4)	Compostable paper				
5)	Non-recyclable/non-compostable		9.8		
Plastics					
6)	HDPE containers	9.0			
7)	PET containers	10.2			
8)	Polypropylene (PP)		7.0		
9)	Polystyrene (PS)		6.2		
10)	Film and flexible packaging	15.0			
11)	All other plastics	32.7	37.5		
Metals					
12)	Aluminum containers	3.0	4.0	2.6	
13)	Ferrous containers	6.0			

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14) Other Ferrous	15.0			
15) Other non-ferrous	3.8	1.3		
Glass				
16) Glass containers	8.0			
17) Other (non-container) glass	3.0	7.3		
Organics				
18) Yard waste				
19) Food waste	18.9	22.0		
20) Food waste packaged	13.0	5.1	6.9	
21) Wood waste (untreated)	5.6			
22) Wood waste (treated)	6.1			
23) Other organic materials	10.5			
C&D				
24) Shingles				
25) Other C&D				
Other				
26) Batteries	0.9			
27) Mercury containing lamps				
28) Paint containers				
29) Hazardous waste	0.4			
30) Household appliances				
31) Electronics		0.3		
32) Furniture	25.2			
33) Other bulky wastes				
34) Carpet				
35) Clothing	0.3			
36) Other textiles	16.6			
37) Other inorganics				
38) Fines/supermix	11.4 food			
Totals				

Date: 11/16/22				
Day: Wednesday				
Time: 1:38PM				
Sample: 20				
Ticket:				
Category: Transfer Tractor/Trailer				
Comments: Comm. MBI				
	Materials	Weights		Totals
Paper				
1) Newspaper	0.1			
2) Old corrugated and Kraft bags	20.0	17.2		
3) Mixed recyclable paper	23.1			
4) Compostable paper	28.0			
5) Non-recyclable/non-compostable	9.9			
Plastics				
6) HDPE containers	10.0			

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7) PET containers	10.6				
8) Polypropylene (PP)	6.2				
9) Polystyrene (PS)	5.7				
10) Film and flexible packaging	16.1				
11) All other plastics	25.9				
Metals					
12) Aluminum containers	2.4				
13) Ferrous containers	2.5				
14) Other Ferrous	2.5				
15) Other non-ferrous	3.1				
Glass					
16) Glass containers	7.4				
17) Other (non-container) glass					
Organics					
18) Yard waste					
19) Food waste	21.4				
20) Food waste packaged	5.9				
21) Wood waste (untreated)	7.2				
22) Wood waste (treated)					
23) Other organic materials	19.0 dog feces				
C&D					
24) Shingles					
25) Other C&D	68.1				
Other					
26) Batteries	0.1				
27) Mercury containing lamps					
28) Paint containers					
29) Hazardous waste					
30) Household appliances					
31) Electronics	4.9	2.4			
32) Furniture					
33) Other bulky wastes	22.4				
34) Carpet					
35) Clothing	9.8				
36) Other textiles	14.4				
37) Other inorganics	6.2				
38) Fines/supermix	11.3 – 98% food, 1% non-paper, 1% non-plastic				
Totals					

Date: 11/16/22
Day: Wednesday
Time: 2:14PM
Sample: 21
Ticket:
Category: Transfer Tractor/Trailer
Comments: Comm. Metro

Materials	Weights				Totals
<b>Paper</b>					
1) Newspaper					
2) Old corrugated and Kraft bags					
3) Mixed recyclable paper	16.3				
4) Compostable paper	41.9				
5) Non-recyclable/non-compostable	9.6				
<b>Plastics</b>					
6) HDPE containers	9.3				
7) PET containers	10.7				
8) Polypropylene (PP)	8.0				
9) Polystyrene (PS)	6.2				
10) Film and flexible packaging	24.4				
11) All other plastics	34.8				
<b>Metals</b>					
12) Aluminum containers	2.1				
13) Ferrous containers	3.4				
14) Other Ferrous	2.5				
15) Other non-ferrous	2.4				
<b>Glass</b>					
16) Glass containers					
17) Other (non-container) glass	0.3				
<b>Organics</b>					
18) Yard waste	7.9 pumpkin				
19) Food waste	19.9	12.8			
20) Food waste packaged	16.6	5.0			
21) Wood waste (untreated)	6.0				
22) Wood waste (treated)	15.3	11.1	5.8		
23) Other organic materials	14.4				
<b>C&amp;D</b>					
24) Shingles					
25) Other C&D	24.4				
<b>Other</b>					
26) Batteries	0.1				
27) Mercury containing lamps					
28) Paint containers					
29) Hazardous waste					
30) Household appliances					
31) Electronics	6.3 laptop	0.5			
32) Furniture	5.1				
33) Other bulky wastes					
34) Carpet					
35) Clothing	13.5				
36) Other textiles	5.5	5.8			
37) Other inorganics	12.8 – kitty litter				
38) Fines/supermix	13.5 - 98% food, 1% non-plastic, 1% non-paper				
<b>Totals</b>					



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Date: 11/17/22					
Day: Thursday					
Time: 7AM					
Sample: 22					
Ticket:					
Category: Transfer Tractor/Trailer					
Comments: Metro					
	Materials	Weights			Totals
Paper					
	1) Newspaper	6.9			
	2) Old corrugated and Kraft bags	21.3			
	3) Mixed recyclable paper	20.0			
	4) Compostable paper	42.8			
	5) Non-recyclable/non-compostable	11.9			
Plastics					
	6) HDPE containers	10.3			
	7) PET containers	14.9			
	8) Polypropylene (PP)	7.9			
	9) Polystyrene (PS)	7.6	6.8		
	10) Film and flexible packaging	26.7	17.2		
	11) All other plastics	34.1			
Metals					
	12) Aluminum containers	4.1	2.6		
	13) Ferrous containers				
	14) Other Ferrous	2.1			
	15) Other non-ferrous	1.7			
Glass					
	16) Glass containers	0.3	9.3		
	17) Other (non-container) glass				
Organics					
	18) Yard waste	15.7			
	19) Food waste	14.1			
	20) Food waste packaged	19.1	15.4	20.3	8.4
	21) Wood waste (untreated)	7.2			
	22) Wood waste (treated)	6.0			
	23) Other organic materials	11.0			
C&D					
	24) Shingles				
	25) Other C&D	9.4	1.6		
A lot of packaged food from Walmart, some expired and some not					
Other					
	26) Batteries	0.1			
	27) Mercury containing lamps				
	28) Paint containers				
	29) Hazardous waste				
	30) Household appliances				

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31) Electronics	0.6				
32) Furniture					
33) Other bulky wastes					
34) Carpet					
35) Clothing	12.7				
36) Other textiles	6.4				
37) Other inorganics					
38) Fines/supermix	12.0 food				
Totals					

Date: 11/17/22					
Day: Thursday					
Time: 8:02AM					
Sample: 23					
Ticket:					
Category: Roll Off					
Comments: Republic 3500 from CP Railroad					
	Materials	Weights			Totals
Paper					
1)	Newspaper	5.7			
2)	Old corrugated and Kraft bags	15.3	0.4		
3)	Mixed recyclable paper	8.8			
4)	Compostable paper	23.1			
5)	Non-recyclable/non-compostable	0.2			
Plastics					
6)	HDPE containers	8.8			
7)	PET containers	11.2			
8)	Polypropylene (PP)	6.4			
9)	Polystyrene (PS)	5.9			
10)	Film and flexible packaging	12.1			
11)	All other plastics	16.6			
Metals					
12)	Aluminum containers	2.4			
13)	Ferrous containers		2.4		
14)	Other Ferrous	28.9	2.9		
15)	Other non-ferrous	2.2			
Glass					
16)	Glass containers				
17)	Other (non-container) glass				
Organics					
18)	Yard waste				
19)	Food waste	5.4			
20)	Food waste packaged	6.0			
21)	Wood waste (untreated)	29.2 pallet	52.1 woodbox	0.1	15.3 wood
22)	Wood waste (treated)	30.9 railroad tie pieces			
23)	Other organic materials	5.9			

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C&D					
24) Shingles					
25) Other C&D					
Other					
26) Batteries					
27) Mercury containing lamps					
28) Paint containers					
29) Hazardous waste	17.4 tire	4.8 train filters			
30) Household appliances					
31) Electronics		0.1			
32) Furniture					
33) Other bulky wastes					
34) Carpet					
35) Clothing	0.3				
36) Other textiles	0.2				
37) Other inorganics					
38) Fines/supermix					
Totals	41.2 – hoses from train, 30% rubber, 70% ferrous metal				

Date: 11/17/22					
Day: Thursday					
Time: 8:25AM					
Sample: 24					
Ticket:					
Category: Front					
Comments: Washington Co. Comm.					
	Materials	Weights			Totals
Paper					
1) Newspaper		6.2			
2) Old corrugated and Kraft bags		20.1			
3) Mixed recyclable paper		22.7			
4) Compostable paper		35.1			
5) Non-recyclable/non-compostable		3.5			
Plastics					
6) HDPE containers		8.9			
7) PET containers		13.1			
8) Polypropylene (PP)		6.4			
9) Polystyrene (PS)		6.1			
10) Film and flexible packaging		16.0			
11) All other plastics		22.8			
Metals					
12) Aluminum containers		3.1			
13) Ferrous containers		3.1			
14) Other Ferrous		6.2	3.1		
15) Other non-ferrous		1.8			
Glass					

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16) Glass containers	6.2				
17) Other (non-container) glass	7.0				
Organics					
18) Yard waste	6.9	9.1			
19) Food waste	3.9				
20) Food waste packaged	3.2				
21) Wood waste (untreated)					
22) Wood waste (treated)	11.5	4.1			
23) Other organic materials	7.2	5.6 dog feces		3.1	
C&D					
24) Shingles					
25) Other C&D	28.5				
Other					
26) Batteries					
27) Mercury containing lamps					
28) Paint containers					
29) Hazardous waste					
30) Household appliances	17.4 vacuum				
31) Electronics			8.1 motors		
32) Furniture	40.3 chair				
33) Other bulky wastes					
34) Carpet					
35) Clothing	9.7				
36) Other textiles	7.0				
37) Other inorganics					
38) Fines/supermix	11.2 – 98% food, 1% non-paper, 1% non-plastic				
Totals					

Date: 11/17/22					
Day: Thursday					
Time: 9:55AM					
Sample: 25					
Ticket:					
Category: Transfer Tractor/Trailer					
Comments: Hagen Advanced					
	Materials	Weights			Totals
Paper					
1) Newspaper					
2) Old corrugated and Kraft bags	58.6	20.4			
3) Mixed recyclable paper	13.9				
4) Compostable paper	25.9				
5) Non-recyclable/non-compostable	12.8				
Plastics					
6) HDPE containers	9.2				
7) PET containers	11.2				
8) Polypropylene (PP)	5.8				

Permit Issued: [month day, year]  
 Permit Expires: [month day, year]

9) Polystyrene (PS)	8.1				
10) Film and flexible packaging	18.8				
11) All other plastics	5.9	21.6			
Metals					
12) Aluminum containers	3.0				
13) Ferrous containers	2.9				
14) Other Ferrous	5.8				
15) Other non-ferrous	3.4				
Glass					
16) Glass containers	7.3				
17) Other (non-container) glass					
Organics					
18) Yard waste	14.9				
19) Food waste	7.7	25.6	12.0		
20) Food waste packaged	6.8				
21) Wood waste (untreated)					
22) Wood waste (treated)	22.1	19.2	5.7		
23) Other organic materials	7.1				
C&D					
24) Shingles					
25) Other C&D	8.9				
Other					
26) Batteries					
27) Mercury containing lamps					
28) Paint containers	0.6				
29) Hazardous waste					
30) Household appliances					
31) Electronics	5.1				
32) Furniture					
33) Other bulky wastes					
34) Carpet					
35) Clothing	21.4				
36) Other textiles	7.0				
37) Other inorganics	7.0				
38) Fines/supermix	10.1 food				
Totals					

Date: 11/17/22					
Day: Thursday					
Time: 10AM					
Sample: 26					
Ticket:					
Category: Side					
Comments: Oak Park Heights					
Materials	Weights				Totals
Paper					

1) Newspaper	5.8				
2) Old corrugated and Kraft bags	18.1				
3) Mixed recyclable paper	15.8				
4) Compostable paper	40.6				
5) Non-recyclable/non-compostable	12.6				
Plastics					
6) HDPE containers	10.3				
7) PET containers	12.9				
8) Polypropylene (PP)	7.8				
9) Polystyrene (PS)	7.1				
10) Film and flexible packaging	17.1				
11) All other plastics	29.6				
Metals					
12) Aluminum containers	4.4	2.2			
13) Ferrous containers	3.8				
14) Other Ferrous					
15) Other non-ferrous		2.3			
Glass					
16) Glass containers	9.3				
17) Other (non-container) glass	5.9				
Organics					
18) Yard waste	27.4 pumpkin				
19) Food waste	22.7	22.9			
20) Food waste packaged	13.1	14.4	10.4		
21) Wood waste (untreated)	0.1				
22) Wood waste (treated)	7.3				
23) Other organic materials	19.4	6.6			
C&D					
24) Shingles					
25) Other C&D					
Other					
26) Batteries	0.3				
27) Mercury containing lamps					
28) Paint containers					
29) Hazardous waste	10.6 medicine				
30) Household appliances					
31) Electronics	1.3				
32) Furniture					
33) Other bulky wastes					
34) Carpet					
35) Clothing	14.9				
36) Other textiles	11.7	8.8			
37) Other inorganics					
38) Fines/supermix	14.7 – 98% food, 1% non-paper, 1% non-plastic				
Totals					

Permit Issued: [month day, year]  
 Permit Expires: [month day, year]

Date: 11/17/22					
Day: Thursday					
Time: 12:40 PM					
Sample: 27					
Ticket:					
Category: Transfer Tractor/Trailer					
Comments: Metro					
	Materials	Weights			Totals
Paper					
	1) Newspaper	7.8			
	2) Old corrugated and Kraft bags	26.5			
	3) Mixed recyclable paper	17.5			
	4) Compostable paper	29.4			
	5) Non-recyclable/non-compostable	10.7			
Plastics					
	6) HDPE containers	8.8			
	7) PET containers	10.4			
	8) Polypropylene (PP)	6.0			
	9) Polystyrene (PS)	5.9			
	10) Film and flexible packaging	19.0			
	11) All other plastics	26.2			
Metals					
	12) Aluminum containers	2.1			
	13) Ferrous containers	2.5			
	14) Other Ferrous	2.9			
	15) Other non-ferrous	2.3			
Glass					
	16) Glass containers	6.1			
	17) Other (non-container) glass	7.8			
Organics					
	18) Yard waste	25.1			
	19) Food waste	8.0			
	20) Food waste packaged	5.7			
	21) Wood waste (untreated)		12.6		
	22) Wood waste (treated)	12.5	7.2		
	23) Other organic materials	8.3			
C&D					
	24) Shingles				
	25) Other C&D	17.8			
Other					
	26) Batteries	0.1			
	27) Mercury containing lamps				
	28) Paint containers				
	29) Hazardous waste				
	30) Household appliances	10.7 – part of ref.			
	31) Electronics		0.1		
	32) Furniture	45.6 chair			

Permit Issued: [month day, year]  
 Permit Expires: [month day, year]

33) Other bulky wastes				
34) Carpet				
35) Clothing	16.0			
36) Other textiles	8.6	10.7		
37) Other inorganics				
38) Fines/supermix	14.0 – 65% C&D, 35% food			
Totals				

Date: 11/17/22					
Day: Thursday					
Time: 12PM					
Sample: 28					
Ticket:					
Category: Transfer Tractor/Trailer					
Comments: Malcom					
	Materials	Weights			Totals
Paper					
1)	Newspaper	5.6			
2)	Old corrugated and Kraft bags	22.1			
3)	Mixed recyclable paper	24.7			
4)	Compostable paper	45.1			
5)	Non-recyclable/non-compostable	9.9	0.7		
Plastics					
6)	HDPE containers	9.6			
7)	PET containers	11.9			
8)	Polypropylene (PP)	6.2			
9)	Polystyrene (PS)	6.9			
10)	Film and flexible packaging	17.0			
11)	All other plastics	4.0	6.1	31.4	
Metals					
12)	Aluminum containers	2.6			
13)	Ferrous containers	2.4			
14)	Other Ferrous	2.8	3.5		
15)	Other non-ferrous	5.0			
Glass					
16)	Glass containers	6.6			
17)	Other (non-container) glass	7.9			
Organics					
18)	Yard waste	9.1			
19)	Food waste	17.3	20.1 deer		
20)	Food waste packaged	10.1			
21)	Wood waste (untreated)	8.7	0.1		
22)	Wood waste (treated)	6.7			
23)	Other organic materials	13.1			
C&D					
24)	Shingles				



Permit Issued: [month day, year]  
 Permit Expires: [month day, year]

25) Other C&D					
Other					
26) Batteries	0.2				
27) Mercury containing lamps					
28) Paint containers					
29) Hazardous waste					
30) Household appliances					
31) Electronics	5.0	1.6	1.7		
32) Furniture	5.4				
33) Other bulky wastes					
34) Carpet	3.3	24.4			
35) Clothing		17.5			
36) Other textiles	6.9	10.1			
37) Other inorganics					
38) Fines/supermix	9.4 – 95% food, 3% non-paper, 2% non-plastic				
Totals					

Date: 11/18/22					
Day: Friday					
Time: 7:28AM					
Sample: 29					
Ticket:					
Category:					
Comments: Aspen					
	Materials	Weights			Totals
Paper					
1) Newspaper					
2) Old corrugated and Kraft bags	24.1				
3) Mixed recyclable paper	39.6	18.1			
4) Compostable paper		28.6			
5) Non-recyclable/non-compostable	9.3				
Plastics					
6) HDPE containers					
7) PET containers	11.6				
8) Polypropylene (PP)	6.0				
9) Polystyrene (PS)	1.1	6.0			
10) Film and flexible packaging	17.5	15.7			
11) All other plastics	11.4	24.8			
Metals					
12) Aluminum containers	2.5				
13) Ferrous containers	2.4				
14) Other Ferrous	2.6				
15) Other non-ferrous	1.6				
Glass					
16) Glass containers	6.2				
17) Other (non-container) glass	6.1				
Organics					

Permit Issued: [month day, year]  
 Permit Expires: [month day, year]

18) Yard waste		11.0 pumpkins	14.2	
19) Food waste	91.1	9.4	10.5	
20) Food waste packaged	10.5			
21) Wood waste (untreated)				
22) Wood waste (treated)				
23) Other organic materials	5.9			
C&D				
24) Shingles				
25) Other C&D				
Other				
26) Batteries				
27) Mercury containing lamps				
28) Paint containers				
29) Hazardous waste				
30) Household appliances				
31) Electronics	9.5			
32) Furniture				
33) Other bulky wastes				
34) Carpet				
35) Clothing	0.1			
36) Other textiles	6.0			
37) Other inorganics				
38) Fines/supermix	7.7 – food 100%			
Totals				

Date: 11/18/22					
Day: Friday					
Time: 9:40AM					
Sample: 30					
Ticket:					
Category: Transfer Tractor/Trailer					
Comments: Advanced					
	Materials	Weights			Totals
Paper					
1)	Newspaper	0.1			
2)	Old corrugated and Kraft bags	18.6			
3)	Mixed recyclable paper	14.5			
4)	Compostable paper	38.0			
5)	Non-recyclable/non-compostable	9.3			
Plastics					
6)	HDPE containers	10.0			
7)	PET containers	10.2			
8)	Polypropylene (PP)	7.7			
9)	Polystyrene (PS)	7.0			
10)	Film and flexible packaging	18.7	15.3		
11)	All other plastics	25.3			
Metals					

12) Aluminum containers	4.1			
13) Ferrous containers	3.0			
14) Other Ferrous	2.5			
15) Other non-ferrous	2.1			
Glass				
16) Glass containers	7.1			
17) Other (non-container) glass				
Organics				
18) Yard waste				
19) Food waste	13.2	16.1		
20) Food waste packaged	11.0			
21) Wood waste (untreated)	5.6			
22) Wood waste (treated)				
23) Other organic materials	8.6			
C&D				
24) Shingles				
25) Other C&D	20.2	18.1	1.8	
Other				
26) Batteries				
27) Mercury containing lamps				
28) Paint containers				
29) Hazardous waste				
30) Household appliances				
31) Electronics	1.9			
32) Furniture	62.8			
33) Other bulky wastes				
34) Carpet				
35) Clothing	12.3			
36) Other textiles	10.1			
37) Other inorganics	7.7			
38) Fines/supermix	15.5 – food 100%			
Totals				

**Attachment C – Proximate and Ultimate Analyses**

Certificate of Analysis

All data reported has been reviewed and approved by:  
 Stacy Zander, Bismarck Assistant Lab Manager Bismarck, ND

All glass and metal have been removed from the sample prior to analysis.

Lab ID: 5747001  
 Sample ID: Xcel MSW Sample #1  
 Date Collected: 11/17/2022 10:40

Permit Issued: [month day, year]  
 Permit Expires: [month day, year]

Date Received: 11/21/2022 09:55

Matrix: RD  
 Collector: Client

* PROXIMATE *				*ULTIMATE*			
ANALYTE	AS RECEIVED	DRY BASIS		ANALYTE	AS RECEIVED	DRY BASIS	
Total Moisture	26.12 wt. %			Total Moisture	26.12 wt. %		
Air Dry Moisture	24.27 wt. %			Air Dry Moisture	24.27 wt. %		
Oven Dry Moisture	2.44 wt. %			Oven Dry Moisture	2.44 wt. %		
Ash	6.40 wt. %	8.66 wt. %		Ash	6.40 wt. %	8.66 wt. %	
Volatile Matter	62.82 wt. %	85.03 wt. %		Carbon	37.99 wt. %	51.42 wt. %	
Fixed Carbon	4.66 wt. %	6.31 wt. %		Hydrogen	8.08 wt. %	6.98 wt. %	
BTU/lb	7291 BTU/lb	9868 BTU/lb		Nitrogen	1.17 wt. %	1.58 wt. %	
Total Sulfur	0.12 wt. %	0.16 wt. %		Total Sulfur	0.12 wt. %	0.16 wt. %	
				Oxygen by Difference	46.24 wt. %	31.19 wt. %	

* SULFUR FORMS *				* ASH FUSION *		
ANALYTE	AS RECEIVED	DRY BASIS		ANALYTE	REDUCING	OXIDIZING
Total Sulfur	0.12 wt. %	0.16 wt. %				

* MINERAL ANALYSIS OF ASH *			* MISCELLANEOUS *		
ANALYTE	DRY BASIS		ANALYTE	AS RECEIVED	DRY BASIS
			Hydrogen Less Water	5.15 wt. %	
			Oxygen Less Water	23.05 wt. %	

Lab ID: 5747002  
 Sample ID: Xcel MSW Sample #2  
 Date Collected: 11/17/2022 10:42  
 Date Received: 11/21/2022 09:55  
 Matrix: RD  
 Collector: Client

* PROXIMATE *				*ULTIMATE*			
ANALYTE	AS RECEIVED	DRY BASIS		ANALYTE	AS RECEIVED	DRY BASIS	
Total Moisture	16.30 wt. %			Total Moisture	16.30 wt. %		
Air Dry Moisture	15.40 wt. %			Air Dry Moisture	15.40 wt. %		
Oven Dry Moisture	1.06 wt. %			Oven Dry Moisture	1.06 wt. %		
Ash	6.25 wt. %	7.47 wt. %		Ash	6.25 wt. %	7.47 wt. %	
Volatile Matter	76.57 wt. %	91.48 wt. %		Carbon	52.65 wt. %	62.90 wt. %	
Fixed Carbon	0.88 wt. %	1.05 wt. %		Hydrogen	9.32 wt. %	8.96 wt. %	
BTU/lb	9500 BTU/lb	11350 BTU/lb		Nitrogen	0.91 wt. %	1.09 wt. %	
Total Sulfur	0.29 wt. %	0.34 wt. %		Total Sulfur	0.29 wt. %	0.34 wt. %	
				Oxygen by Difference	30.58 wt. %	19.24 wt. %	

* SULFUR FORMS *				* ASH FUSION *		
ANALYTE	AS RECEIVED	DRY BASIS		ANALYTE	REDUCING	OXIDIZING

Permit Issued: [month day, year]  
 Permit Expires: [month day, year]

Total Sulfur 0.29 wt. % 0.34 wt. %

\* MINERAL ANALYSIS OF ASH \*

ANALYTE DRY BASIS

\* MISCELLANEOUS \*

ANALYTE AS RECEIVED DRY BASIS

Hydrogen Less Water 7.50 wt. %  
 Oxygen Less Water 16.11 wt. %

Lab ID: 5747003  
 Sample ID: Xcel MSW Sample #3  
 Date Collected: 11/17/2022 10:45  
 Date Received: 11/21/2022 09:55  
 Matrix: RD  
 Collector: Client

\* PROXIMATE \*

ANALYTE AS RECEIVED DRY BASIS

\* ULTIMATE \*

ANALYTE AS RECEIVED DRY BASIS

Total Moisture 21.16 wt. %  
 Air Dry Moisture 16.64 wt. %  
 Oven Dry Moisture 5.43 wt. %  
 Ash 4.20 wt. % 5.33 wt. %  
 Volatile Matter 67.13 wt. % 85.15 wt. %  
 Fixed Carbon 7.51 wt. % 9.52 wt. %  
 BTU/lb 6625 BTU/lb 8403 BTU/lb  
 Total Sulfur 0.12 wt. % 0.15 wt. %

Total Moisture 21.16 wt. %  
 Air Dry Moisture 16.64 wt. %  
 Oven Dry Moisture 5.43 wt. %  
 Ash 4.20 wt. % 5.33 wt. %  
 Carbon 39.85 wt. % 50.54 wt. %  
 Hydrogen 7.86 wt. % 6.97 wt. %  
 Nitrogen 0.93 wt. % 1.18 wt. %  
 Total Sulfur 0.12 wt. % 0.15 wt. %  
 Oxygen by Difference 47.04 wt. % 35.82 wt. %

\* SULFUR FORMS \*

ANALYTE AS RECEIVED DRY BASIS  
 Total Sulfur 0.12 wt. % 0.15 wt. %

\* ASH FUSION \*

ANALYTE REDUCING OXIDIZING

\* MINERAL ANALYSIS OF ASH \*

ANALYTE DRY BASIS

\* MISCELLANEOUS \*

ANALYTE AS RECEIVED DRY BASIS

Hydrogen Less Water 5.50 wt. %  
 Oxygen Less Water 28.24 wt. %

Lab ID: 5747004  
 Sample ID: Xcel MSW Sample #4  
 Date Collected: 11/17/2022 10:48  
 Date Received: 11/21/2022 09:55  
 Matrix: RD  
 Collector: Client

\* PROXIMATE \*

ANALYTE AS RECEIVED DRY BASIS

\* ULTIMATE \*

ANALYTE AS RECEIVED DRY BASIS

Total Moisture 37.01 wt. %  
 Air Dry Moisture 36.36 wt. %  
 Oven Dry Moisture 1.02 wt. %

Total Moisture 37.01 wt. %  
 Air Dry Moisture 36.36 wt. %  
 Oven Dry Moisture 1.02 wt. %

Permit Issued: [month day, year]  
 Permit Expires: [month day, year]

Ash	1.76	wt. %	2.80	wt. %	Ash	1.76	wt. %	2.80	wt. %
Volatile Matter	56.87	wt. %	90.29	wt. %	Carbon	37.97	wt. %	60.28	wt. %
Fixed Carbon	4.35	wt. %	6.91	wt. %	Hydrogen	8.12	wt. %	6.32	wt. %
BTU/lb	6106	BTU/lb	9693	BTU/lb	Nitrogen	0.83	wt. %	1.32	wt. %
Total Sulfur	0.07	wt. %	0.11	wt. %	Total Sulfur	0.07	wt. %	0.11	wt. %
					Oxygen by Difference	51.24	wt. %	29.16	wt. %

\* SULFUR FORMS \*

ANALYTE	AS RECEIVED		DRY BASIS	
Total Sulfur	0.07	wt. %	0.11	wt. %

\* ASH FUSION \*

ANALYTE	REDUCING	OXIDIZING
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\* MINERAL ANALYSIS OF ASH \*

ANALYTE	DRY BASIS
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\* MISCELLANEOUS \*

ANALYTE	AS RECEIVED	DRY BASIS
Hydrogen Less Water	3.98	wt. %
Oxygen Less Water	18.37	wt. %

Lab ID: 5747005  
 Sample ID: Xcel MSW Sample #5  
 Date Collected: 11/17/2022 10:50  
 Date Received: 11/21/2022 09:55  
 Matrix: RD  
 Collector: Client

\* PROXIMATE \*

ANALYTE	AS RECEIVED		DRY BASIS	
Total Moisture	16.93	wt. %		
Air Dry Moisture	15.07	wt. %		
Oven Dry Moisture	2.19	wt. %		
Ash	6.45	wt. %	7.76	wt. %
Volatile Matter	73.73	wt. %	88.76	wt. %
Fixed Carbon	2.89	wt. %	3.48	wt. %
BTU/lb	7456	BTU/lb	8976	BTU/lb
Total Sulfur	0.08	wt. %	0.09	wt. %

\* ULTIMATE \*

ANALYTE	AS RECEIVED		DRY BASIS	
Total Moisture	16.93	wt. %		
Air Dry Moisture	15.07	wt. %		
Oven Dry Moisture	2.19	wt. %		
Ash	6.45	wt. %	7.76	wt. %
Carbon	45.60	wt. %	54.89	wt. %
Hydrogen	7.46	wt. %	6.70	wt. %
Nitrogen	0.35	wt. %	0.42	wt. %
Total Sulfur	0.08	wt. %	0.09	wt. %
Oxygen by Difference	40.07	wt. %	30.13	wt. %

\* SULFUR FORMS \*

ANALYTE	AS RECEIVED		DRY BASIS	
Total Sulfur	0.08	wt. %	0.09	wt. %

\* ASH FUSION \*

ANALYTE	REDUCING	OXIDIZING
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\* MINERAL ANALYSIS OF ASH \*

ANALYTE	DRY BASIS
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\* MISCELLANEOUS \*

ANALYTE	AS RECEIVED	DRY BASIS
Hydrogen Less Water	5.57	wt. %
Oxygen Less Water	25.03	wt. %

CITY OF RED WING FIELDWORK TECHNICAL MEMORANDUM – OCTOBER  
2022

To: Jeff Schneider – City of Red Wing Deputy Director of Public Works; and – Xcel Energy  
From: Brad Kelley, Senior Project Engineer GBB  
Date: December 15, 2022  
Subject/Re: City of Red Wing MSW Waste Sort

**Project Purpose**

For over thirty years, the City of Red Wing (“City”) has been a leader in the diversion of municipal solid waste (MSW) from landfills through recycling programs and the recovery of renewable energy from non-recyclable waste.

The City of Red Wing’s Solid Waste Division (SWD) provides management and support services for the collection and disposal of garbage and recyclable materials for the residents, commercial and industrial users, and institutions in the City of Red Wing. Beginning in 2019, the SWD converted its residential recycling program to a curbside single-stream system. Residential Dwellings (defined as four or less dwelling units with a dedicated kitchen) are provided with a 96-gallon cart for their recyclables which is collected every other week. Non-recyclable waste from Residential Dwellings is collected weekly with 48-gallon or 96-gallon containers.

The SWD operates the Red Wing Solid Waste Management Campus that serves the regions needs through a variety of solid waste management activities including management of urban brush and storm damages trees, composting of yard waste, production of refuse derived fuel (RDF) from residential waste, annual electronic waste collection event, and hosts a citizens’ drop-off center.

The SWD recently upgraded its RDF production facility in the beginning of 2020 at cost of approximately \$12.5 million USD. The upgrades include new material sorting and recovery systems, fuel preparation shredders, and ancillary facility utilities. The new RDF system also incorporates equipment and systems to recover recyclable materials which were inadvertently placed into containers intended for non-recyclable waste. In the year prior to October 2022 the system approximately 37,000 tons of MSW. Of this waste, approximately 30,000 tons were processed by the upgraded equipment to produce approximately 20,500 tons of RDF fuel for Xcel Energy. Approximately 6,300 tons of unprocessed waste was transferred to the Olmsted waste-to-energy (WTE) facility, and just under 2,000 tons of commodities were recovered for recycling by the processing system. The remaining residue tonnages were sent to landfill for disposal.

The results of this waste study achieve two main goals: to gain a deeper understanding of the composition of the incoming MSW from all sources that are processed at the facility, and second, to analyze the outbound materials that have been processed and shredded for RDF fuel.<sup>1</sup>

<sup>1</sup> Recovered metals for recycling are frequently stored for a period of time before sale, both to accumulate enough for a truck load (or more) and to try to get a better price. This can make estimating the recovery from incoming tons difficult to calculate, hence the need for the sorting of the RDF material to better compare the recovered recyclables from the system to the incoming material stream.

*Fieldwork Implementation*

To accomplish this study, two GBB supervisory staff and a team of 5 temporary laborers<sup>2</sup> sorted fifteen (15) samples of MSW materials extracted from the building’s interior and classified materials into one of the thirty (33) material types as defined in Attachment A. A total of 196 labor hours were spent sorting 4,749 pounds of material (approximately 24 pounds of MSW material sorter per hour/per person on average).

<sup>2</sup> Originally, ten (10) sorting laborers from a local temporary staffing agency were requested for this project. However, due to a variety

of reasons, including the putrescible nature of sorting MSW, only half of the expected labor stayed for the duration of the sort study.

The onsite waste sort fieldwork portion of this project was conducted from October 11, 2022, to October 24, 2022. GBB's Project Manager, Brad Kelley, guided the project fieldwork site's hazards and protocols safety training when the temporary labor sort team arrived at the project site location. The project's hazards included Covid-19 risks, slips, trips and falls, sharps, and working near heavy mechanical equipment traffic. All laborers and GBB staff were required to wear closed toe boots and all other required Personal Protective Equipment (PPE), especially double layering on gloves. No safety incidents were reported during this study.

The sort site location was provided on the Red Wing Solid Waste Campus in the maintenance shed located near the back of the campus away from most activity. It was determined that the SWD team would collect materials from the tip floor as they arrived or from a pre-mixed pile located on the tip floor. The team would bring samples from this pile to the sort location as needed using a skid steer or a 2-yard container with a forklift. Similarly, a sample of the RDF material from the shredded, postprocessed material was also collected for sorting. The sampling type was documented by the GBB Project Manager to ensure that each sample corresponded to the type of sample material being sorted. If the origination of the sample was known, this was also noted on the sample data sheet.

The Project Manager discussed the overall objectives of the waste characterization sort, reviewed material categories and how to use sort equipment, and described standard sorting procedures with the waste sort laborers. Materials larger than 2" in size were categorized as a material type and then sorted into durable plastic buckets, bins, and totes by the fieldwork sorters (see Figure 1 included in the .pdf document). Large or bulky items were individually weighed and recorded.

Materials smaller than 2" in size were categorized as dirt and/or fines (see Figure 2 below). These materials were sampled by sweeping and collecting small materials off the sorting tables and by shoveling smaller items off from the ground. Although small in size, fines by weight can represent a significant percentage of a MSW waste stream.

The site supervisor visually estimated samples approximately 200 to 300 pounds in size. When all the material from the sample was segregated into the individually marked receptacles, the sort team weighed the sample by bringing each material category bin to the scale while the Project Manager recorded the bin's weight.

For each sample, the site supervisor recorded material and container weights using a portable commercial scale with 0.2-pound accuracy. Sample weights of each material type were calculated using spreadsheet software by removing the tare weights from the containers.

Once the weights of the categorized and sorted materials were recorded, the team disposed of the materials in a designated dumpster near the sorting activities. After the day was complete, the SWD took the roll-off to the tip floor for eventual processing and returned the empty box to be reloaded the next day.

#### *Fieldwork Findings and Observations*

In total, fifteen samples were collected, and 4,749 pounds of material were sorted. The sample size weights ranged from approximately 226 lbs. to over 500 pounds, with an average of 317 pounds per sample. The day-by-day results of the samples are shown in Table 1 below. Note that Thursday's sample total is lower as that is when RDF was sampled which takes more time due to the small size. The full data set from this study may be found as Attachment B.

Table 1 - Waste Characterization Samples per Day – October 2022



MSW Source	Tuesday	Wednesday	Thursday	Friday	Total Samples
Pre-processed Material	4	5	2	4	14
Postprocessed Material	0	0	1	0	1
<b>Total Samples</b>	<b>4</b>	<b>5</b>	<b>3</b>	<b>4</b>	<b>15</b>
<i>Pre-processed Material Sample (pounds)</i>	<i>1,268</i>	<i>1,627</i>	<i>622</i>	<i>1,323</i>	<i>4,501</i>
<i>Post-processed Material Sample (pounds)</i>	<i>0</i>	<i>0</i>	<i>247</i>	<i>0</i>	<i>247</i>
<i>Total Sample Weight (pounds)</i>	<i>1,268</i>	<i>1,627</i>	<i>670*</i>	<i>1,574</i>	<i>4,749*</i>

\*Sample total tonnage differs from total due to rounding. Lower Thursday total is due to sorting RDF which takes much longer than pre-processed MSW

*Pre-processed Material Results<sup>3</sup>*

The full results from the pre-processed MSW testing are shown below in Table 2. The categories are divided into 10 groups outlining the types of items being sorted. The error column indicates the potential variability in the results, the lower the error compared to the average percentage, the less variability was seen in that item during the sorting.

Table 2 – Waste Characterization Results

Group	Category	Average % - Pre-Processed	Error +/- (90%)
<b>Fiber</b>	Old Corrugated Cardboard (OCC)	3.3%	1.7%
	Old Newsprint (ONP)	0.2%	0.1%
	Office Paper/Magazines	1.1%	0.3%
	Gable Top/Aseptic Containers	0.3%	0.1%
	Other Mixed Recyclable Paper/Kraft	2.7%	0.4%
	Non-recyclable Paper Products	3.9%	0.7%
<b>Plastic</b>	PET Bottles (#1)	1.5%	0.2%
	PET Containers/Packaging (#1)	0.2%	0.1%
	HDPE Color (#2)	0.3%	0.1%
	HDPE Natural (#2)	0.3%	0.1%
	Mixed Bottles/Containers (#3-#7 non-ES #6)	1.3%	0.2%
	EPS Foam (#6)	0.4%	0.1%
	Film & Flexible Packaging	9.5%	1.2%
	Mixed Rigid Bulky	0.5%	0.4%
	Non-Recyclable Rigid Plastic	1.9%	0.4%

<b>Glass</b>	Recyclable Glass	3.7%	2.0%
	Non-Recyclable Glass	0.6%	0.3%
<b>Metals</b>	Ferrous Metal Containers	0.7%	0.2%
	Aluminum Cans (UBC)	1.0%	0.3%
	Other Metals	1.5%	0.7%
<b>Organics</b>	Food/Putrescible Waste	19.4%	2.5%
	Compostable Fibers	7.8%	0.7%
	Other Organics	6.8%	2.5%
<b>Textiles</b>	Re-Usable Textiles	3.2%	2.2%
	Non-Recyclable Textiles	2.4%	1.5%
	Leather & Rubber	0.7%	0.4%
<b>HHW</b>	Household Hazardous Waste	0.1%	0.1%
<b>Electronics</b>	All Electronics	1.3%	0.6%
<b>C&amp;D</b>	Wood	2.3%	0.8%
	Other C&D	1.7%	0.9%
<b>Other</b>	Fines	10.8%	3.1%
	Diapers	5.3%	1.6%
	Other Bulky or Composite Items	3.0%	0.6%

<sup>3</sup> To calculate the results, the percentage of each category was calculated over each of the pre-processed samples and then averaged for the final result. This helps avoid mathematical issues with variable sample size.

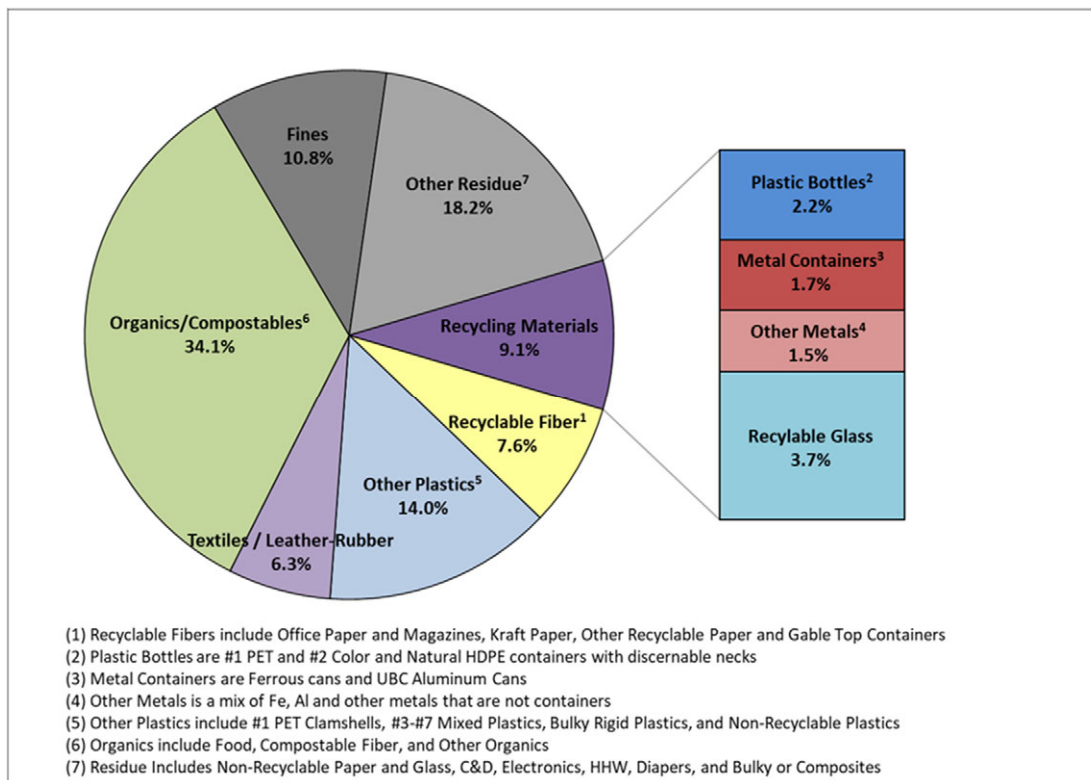


Figure 2 – Characterization Results by Category Group of Pre-Processed MSW

Another way to better understand the material is to look at the major categories in the waste. The top ten pre-processed materials found in this study are presented in Table 3. These top ten materials account for more than 73% of the total pre-processed waste stream in this study. The top three material types by weight were food and putrescible waste, fines, film and flexible packaging. These three materials account for approximately 40% of the total pre-processed waste sorted.

Table 3 – Top 10 Categories from Pre-Processed Composition Study

Rank	Category	Average % - All	Error +/- (90%)
1	Food/Putrescible Waste	19.4%	2.5%
2	Fines	10.8%	3.1%
3	Film & Flexible Packaging	9.5%	1.2%
4	Compostable Fibers	7.8%	0.7%
5	Other Organics	6.8%	2.5%
6	Diapers	5.3%	1.6%
7	Non-recyclable Paper Products	3.9%	0.7%
8	Recyclable Glass	3.7%	2.0%
9	Old Corrugated Cardboard (OCC)	3.3%	1.7%
10	Re-Usable Textiles	3.2%	2.2%

A graph in Figure 3 of the top 10 shows the relation between the top 10 items along with the error bars that indicate the variability of the sample items.

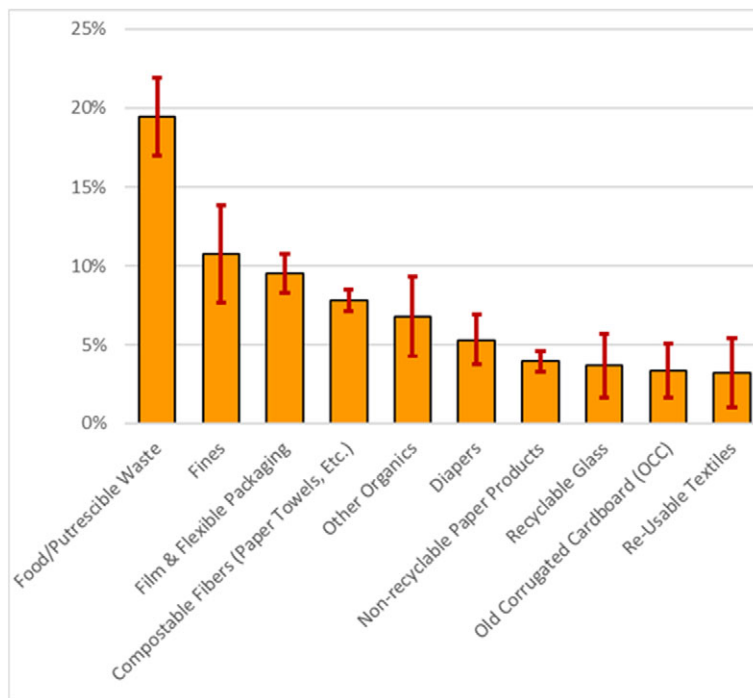


Figure 3 - Top 10 Categories from Pre-Processed Composition Study

During the sort, the fieldwork staff observed a challenge of separating fines from smaller food materials due to their size and indistinguishable nature (see Figure 4). The team used scoops to segregate and sort these materials to the best of their abilities into the material type that was most representative of materials present. To better understand the fines, a separate test was used after the fines were collected from a sort. The fines collection container was emptied back onto the sort table and sorted (to the best of the sorter’s ability) into one of five main groups. The results are shown in Table 4. This indicates that plastic, food, and fiber make up about 28% of the fines material, just over 10% of the total fines. Another 10% was other types of materials such as small metals and large glass, while the remaining half of the fines (46.6%) were simply too small to collect or identify. This indicates there is still Btu value in the fines that are being included in the RDF materials.

Item Type	Weight (lbs.)	Percentage
Plastic	0.8	3.4%
Food	3.0	12.7%
Fiber	2.8	11.9%
Other	6.0	25.4%
Small Fines	11.0	46.6%
<b>Total</b>	<b>23.6</b>	<b>100%</b>

Table 4 – Breakdown of Fines Content by Type

### *Post-processed Materials Results*

The sort team also was provided with a scoop of post-processed RDF material for sorting. This was the material that was processed by the system equipment to be sent to the Xcel Energy RDF facility.

It should be noted that the shredded, post-processed sample took the team significantly longer to sort and categorize since the materials were smaller in size, less distinguishable, and more thoroughly mixed than the pre-processed samples (See Figure 4 and 5 in the .pdf document). Another issue for the sorters was that much of the animal waste and diapers were liberated from their wrappings.

The top ten postprocessed materials found in this study are presented in Figure 7, below. The full results from each category are included in the appendix. The top ten materials account for more than 88% of the total postprocessed materials in this study. The top three material types by weight were fines, film and flexible packaging (see Figure 6 in the .pdf document), and recyclable Glass. The top three materials account for approximately 63% of the total postprocessed waste sorted. Most materials ended up as fines (less than 2”) due to the difficulty in identifying and collecting these small items.

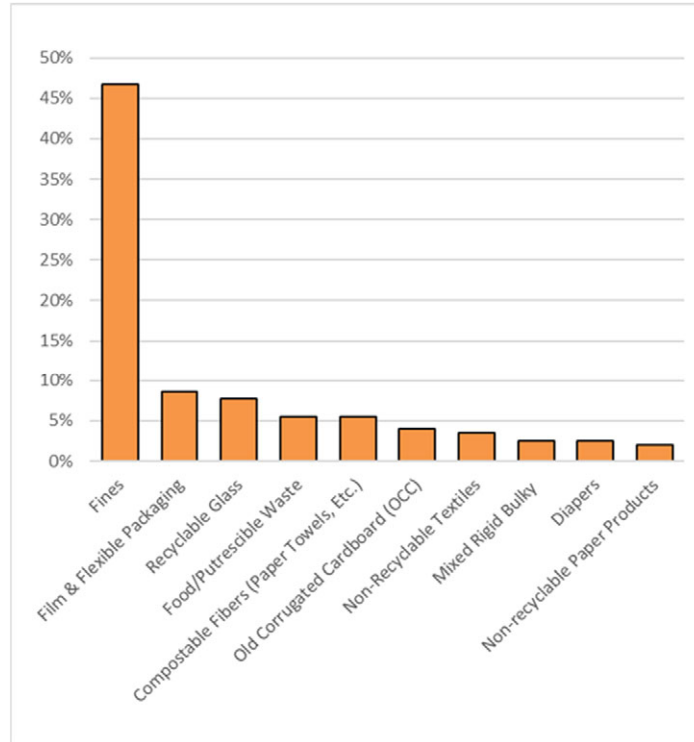


Figure 7 - Top 10 Items in Post-Processed RDF (Error not applicable with one sample)

Due to the time necessary to sort the RDF, only one sample was taken as the emphasis was on the incoming materials. However, it should be noted that the processing system did an excellent job of removing metals, especially Ferrous metals, from the RDF. These results are shown in Figure 8 below, with the purple columns indicating the amount of metals in the stream pre-processed and the orange indicating the metals found in the RDF. Other metals include light items such as aluminum foil and non-ferrous metals such as brass.

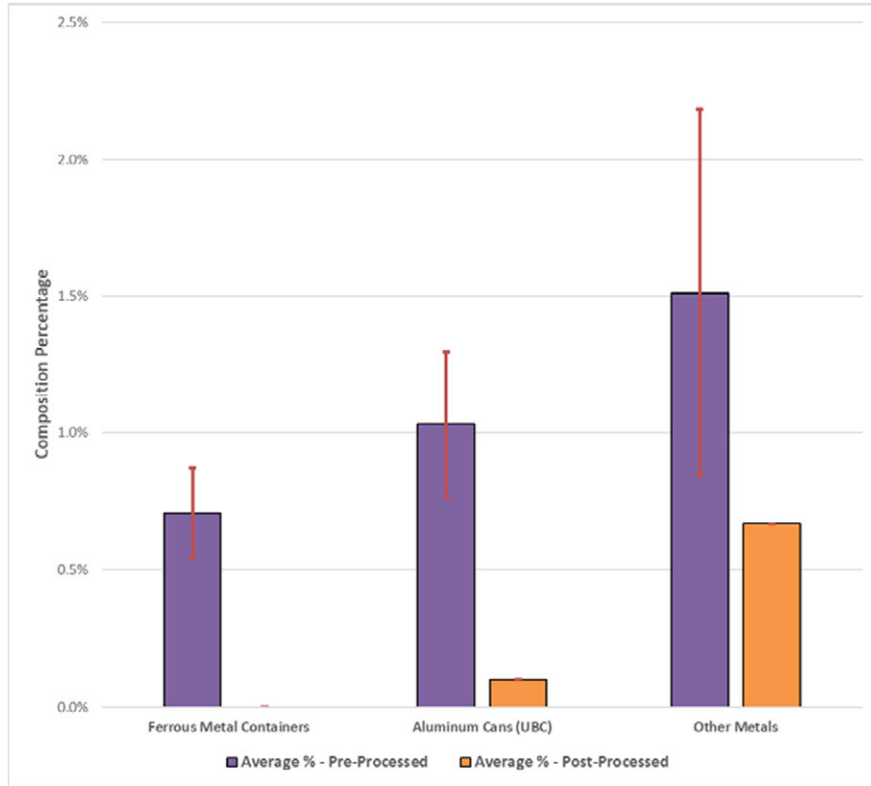


Figure 8 –Difference in Metals from Pre- and Post-Processed Samples

*Fieldwork Conclusions*

The sort was considered a success even without the total number of sorters originally anticipated for the event. Luckily, the team that was available did an excellent job of learning how to identify and sort the materials and the data collected was enough to show reasonable errors for nearly all items. This data was collected for all types of MSW material that is processed by the SWD, including the City of Red Wing residential waste and all commercial and other MSW that is brought to the SWD tip location.

*Attachment A: Fieldwork Material Types and Definitions*

#		Material	Definition
1	<b>Fiber</b>	Old Corrugated Cardboard (OCC)	Old corrugated containers (cardboard) that are clean and dry enough to be recycled. Most shipping boxes are OCC.
2		Old Newsprint (ONP)	Old newspapers that are clean and dry enough to be recycled as a commodity when separated. This shall include all newspaper inserts.
3		Office Paper/Magazines	All white office paper (8 1/2 x 11) and magazines
4		Gable Top/Aseptic Containers	Containers made of paperboard material but with a “gable top” lid, sometimes including a “screw-on” circular plastic cap. Examples of this material include paper milk cartons and juice boxes.
5		Other Mixed Recyclable Paper/Kraft	Paper of composite material or other paper that is clean and dry enough to be recycled as a commodity when separated, such as mailing envelopes with film plastic windows, books and phonebooks, and other flat paper items that are not office paper or news. Includes kraft paper such as cereal boxes.
6		Non-recyclable Paper Products	Paper that is non-compostable or too contaminated to be recovered, including paper plates and cups contaminated with food, wax paper, or any other composite paper items that are not recoverable for recycling in a standard MRF

7	Plastic	PET Bottles (#1)	Narrow necked bottles or containers identified by the recycling symbol with the number #1, contents shall be emptied into the Food category.
8		PET Containers/Packaging (#1)	Food trays and other non-bottle PET #1 items. Contents will be emptied into appropriate categories.
9		HDPE Color (#2)	Narrow necked bottles or containers that are opaque due to coloring and can be identified by the recycling symbol with the number #2. Examples include laundry soap bottles and certain medicine bottles.
10		HDPE Natural (#2)	Narrow necked or other containers that are translucent in color identified by the recycling symbol with the number #2. Most milk bottles are HDPE-N.
11		Mixed Bottles/Containers (#3-#7 non-ES #6)	All rigid plastic containers or items identified by the recycling symbol with any other number but #1 and #2, (except EPS #6).
12		EPS Foam (#6)	Polystyrene foam, such as disposable coffee cups, coolers, or cushioning material in packaging, which are typically white and are made of expanded polystyrene beads.
13		Film & Flexible Packaging	All film plastic including trash bags, grocery bags, shrink wrap, plastic sheeting, etc. Also includes flexible packaging such as chip bags and food pouches.
14		Mixed Rigid Bulky	Large plastic items such as crates or toys that would still be mostly recyclable.
15		Non-Recyclable Rigid Plastic	Plastic items without a number or other mostly plastic items that would be difficult to recycle.
16		Glass	Recyclable Glass
17	Non-Recyclable Glass		Any non-container glass material including plate glass, windowpanes, as well as any ceramic or other similar inert material.
18	Metals	Ferrous Metal Containers	Any ferrous containers or other items including cans used to store soup, beans, or other non-perishable items. Composite materials that are a majority ferrous metals will be placed in this category.
19		Aluminum Cans (UBC)	Any non-ferrous used beverage can (UBC) containers such as soda cans.
20		Other Metals	Any other metals other than UBC or Ferrous cans. Includes knives, foil, and pots and pans.
21	Organics	Food/Putrescible Waste	Uncooked foods and cooked left-over food from homes and restaurants. This includes foodstuffs and liquids emptied from containers during the sort.

Attachment B: Fieldwork Data Set

Category	Material Type	Average % Pre-processed	% Post-processed <sup>1</sup>	Difference Pre- to Post -	Percent Change
Fiber	Old Corrugated Cardboard (OCC)	3.3%	4.0%	-0.7%	20%
	Old Newsprint (ONP)	0.2%	0.0%	0.2%	-90%
	Office Paper/Magazines	1.1%	0.2%	0.9%	-83%
	Gable Top/Aseptic Containers	0.3%	0.0%	0.3%	-93%
	Other Mixed Recyclable Paper/Kraft	2.7%	0.7%	1.9%	-72%
	Non-recyclable Paper Products	3.9%	2.0%	1.9%	-48%
Plastic	PET Bottles (#1)	1.5%	0.2%	1.4%	-88%
	PET Containers/Packaging (#1)	0.2%	0.0%	0.2%	-92%
	HDPE Color (#2)	0.3%	0.2%	0.1%	-45%
	HDPE Natural (#2)	0.3%	0.0%	0.3%	-94%
	Mixed Bottles/Containers (#3-#7 non-ES #6)	1.3%	2.0%	-0.6%	49%
	EPS Foam (#6)	0.4%	0.4%	0.0%	0%
	Film & Flexible Packaging	9.5%	8.6%	0.9%	-9%

	Mixed Rigid Bulky	0.5%	2.5%	-2.0%	372%
	Non-Recyclable Rigid Plastic	1.9%	1.8%	0.1%	-8%
<b>Glass</b>	Recyclable Glass	3.7%	7.7%	-4.0%	111%
	Non-Recyclable Glass	0.6%	0.3%	0.3%	-45%
<b>Metals</b>	Ferrous Metal Containers	0.7%	0.0%	0.7%	-100%
	Aluminum Cans (UBC)	1.0%	0.1%	0.9%	-90%
	Other Metals	1.5%	0.7%	0.8%	-56%
<b>Organics</b>	Food/Putrescible Waste	19.4%	5.5%	13.9%	-72%
	Compostable Fibers	7.8%	5.4%	2.4%	-31%
	Other Organics	6.8%	1.4%	5.4%	-80%
<b>Textiles</b>	Re-Usable Textiles	3.2%	0.9%	2.3%	-72%
	Non-Recyclable Textiles	2.4%	3.5%	-1.1%	48%
	Leather & Rubber	0.7%	0.2%	0.5%	-75%
<b>HHW</b>	Household Hazardous Waste	0.1%	0.1%	0.0%	-35%
<b>Electronics</b>	All Electronics	1.3%	0.4%	0.9%	-68%
<b>C&amp;D</b>	Wood	2.3%	0.7%	1.6%	-71%
	Other C&D	1.7%	0.7%	0.9%	-56%
<b>Other</b>	Fines / Fuel	10.8%	46.7%	-35.9%	334%
	Diapers	5.3%	2.4%	2.9%	-54%
	Other Bulky or Composite Items	3.0%	0.5%	2.5%	-83%
	<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>N/A</b>	<b>N/A</b>

Sample Data with Tare Removed

Category	Material Type	TS Floor Mix	TS Floor Mix	TS Floor Mix	TS Floor Mix	TS Floor Mix	TS Floor Mix	TS Floor Mix	TS Floor Mix	RDF	Commercial – Casino Hotel	TS Floor Mix	Commercial – North River Island SLR	Premixed Residential	Mixed 2	Mixed 2
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Old Corrugated Cardboard (OCC)	33.75	3.7	4.1	10.9	9.7	2.7	1.7	5.5	9.9	5.1	7.3	46.5	1.1	23.9	3.7
	Old Newsprint (ONP)	1.05	1.05	1.85	0.65	0.65	1.25	1.45	0.05	0.05	0	0	0.05	0.25	0.05	0.25
<b>Fiber</b>	Office Paper/Magazines	1.05	3.85	6.05	2.85	1.85	6.65	5.65	2.85	0.45	0	2.25	0.25	3.9	7.7	3.65
	Gable Top/Aseptic Containers	1.25	1.05	1.05	0.05	2.05	0.25	0.45	0.25	0.05	0	1.25	0.45	2.05	3.45	0.05
	Other Mixed Recyclable Paper/Kraft	11.25	6.65	4.65	7.85	9.3	10.45	10.05	14.05	1.85	8.65	4.45	8.7	4.25	14.1	6.85
	Non-recyclable Paper Products	11.25	9.85	13.65	11.25	12.1	11.05	9.65	9.65	5.05	14.65	7.05	19.5	21.9	16.7	6.05
	PET Bottles (#1)	8.55	5.45	2.65	3.85	5.85	3.85	4.85	4.65	0.45	6.75	5.05	3.05	5.85	6.3	2.05
	PET Containers/Packaging (#1)	2.45	1.05	1.65	1.05	0.45	0.45	0.65	0.45	0.05	0.85	0.65	0.25	0.45	0.05	0
	HDPE Color (#2)	2.65	0.65	0.45	1.65	1.85	0.85	0.65	0.65	0.45	0.05	1.65	0.45	0.45	0.25	2.05
	HDPE Natural (#2)	2.8	0.45	1.05	1.25	1.65	0.25	0.25	0.45	0.05	0.65	1.45	2.25	0.45	1.85	1.05
<b>Plastic</b>	Mixed Bottles/Containers (#3-#7 non-ES #6)	4.65	3.85	3.85	5.05	4.45	4.65	2.45	2.45	4.85	2.85	4.05	2.65	4.9	10.5	3.85
	EPS Foam (#6)	2.25	0.85	1.65	1.65	1.45	2.05	1.05	1.65	1.05	0.25	1.85	0.45	1.65	1.9	0.65



Permit Issued: [month day, year]  
 Permit Expires: [month day, year]

	Film & Flexible Packaging	31.2	22.9	31.4	40.7	34.5	23.3	19.7	20.1	21.4	33.6	23.5	22.4	29.6	54	36.5
	Mixed Rigid Bulky	3.4	0	0	1.3	0	7.75	1.9	8.9	6.2	0	0	0.5	0.5	0.5	0
	Non-Recyclable Rigid Plastic	3.45	7.65	4.25	4.85	14.05	4.05	5.25	7.05	4.45	6.45	8.05	3.25	5.85	6.7	4.85
<b>Glass</b>	Recyclable Glass	4.65	5.4	1.65	4.65	14.25	8.4	6.05	7.45	19.05	9.65	13.85	61.5	15.05	8.65	2.65
	Non-Recyclable Glass	0.85	1.4	0.6	0.8	0.6	2.8	3.2	0.65	0.8	6.8	0.8	0	0.2	0.45	4.25
<b>Metals</b>	Ferrous Metal Containers	1.25	2.85	0.85	1.65	2.65	2.45	3.45	2.05	0	4.25	3.45	1.85	0.65	2.85	1.05
	Aluminum Cans (UBC)	9.1	2.05	1.85	3.45	4.25	2.05	3.25	1.85	0.25	5.85	2.65	2.65	1.65	3.05	2.25
	Other Metals	1.45	2.65	2.85	1.05	10.45	5.45	4.85	5.85	1.65	1.65	6.05	0.65	1.05	30.1	3.05
	Food/Putrescible Waste	51.3	73.15	44.6	83.1	47.65	104.4	71.1	60.9	13.65	28.05	53.85	69.9	58.85	105.95	30.85
<b>Organics</b>	Compostable Fibers	30.9	16.25	20.05	28.5	29.9	26.85	17.85	22.05	13.45	22.65	28.85	21.7	26.3	56.15	13.65
	Other Organics	16.05	13.2	4.25	10.8	43.4	40.65	56.6	18	3.4	7.4	29.85	12.25	31.65	19	0
	Re-Usable Textiles	0.65	6.65	7.65	18.05	8.45	8.65	1.65	10.45	2.25	56.95	4.25	0.25	2.25	7.65	4.05
<b>Textiles</b>	Non-Recyclable Textiles	5.85	2.65	3.85	5.65	5.25	5.65	5.3	6.05	8.65	38.4	7.25	2.25	1.45	3.65	6.25
	Leather & Rubber	3.65	2.65	2.05	2.05	1.45	1.85	0.05	1.65	0.45	0.05	10.85	0.05	0	3.85	2.85
<b>HHW</b>	Household Hazardous Waste	0	1.6	0	1	0.8	0	0	0.8	0.2	0	0	0.6	0.4	0.2	0.05
<b>Electronics</b>	All Electronics	0.85	1.4	0.25	4.25	11.25	0.65	0.45	0.65	1	0.45	10.65	14.85	3.45	6.05	3.05
<b>C&amp;D</b>	Wood	19.85	11.2	9.65	12.65	10.05	2.25	0.25	5.45	1.65	0.25	10.85	0.25	1.85	17.05	5.85
	Other C&D	0.85	18.6	5.05	14.25	3.85	1.45	0	1.85	1.85	0.05	17.05	0	5.05	3.85	2.85
	Fines	66.65	28.05	47.7	14.85	26.05	52.1	13.05	65.9	115.5	10.45	41.3	3.85	17.45	33.9	52
<b>Other</b>	Diapers	10	13.2	46.2	27.05	10.25	15.65	8.05	11.85	6.05	2.65	16.45	14.05	16.65	26.45	16.6
	Other Bulky or Composite Items	7.65	19.05	7.45	11.25	8.65	6.05	5.85	12.45	1.25	6.45	13.85	5.25	6.45	24.5	3.05

Notes from Sample Sheets

	Load Type	TS Floor Mix	TS Floor Mix	TS Floor Mix	TS Floor Mix	TS Floor Mix	TS Floor Mix	TS Floor Mix	TS Floor Mix	TS Floor Mix	RDF	Commercial - Casino Hotel	TS Floor Mix	Commercial - North River Island SLR	Premixed Residential	Mixed #2	Mixed #2
	Category	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
<b>Fiber</b>	Old Corrugated Cardboard (OCC)																
	Old Newsprint (ONP)																
	Office Paper/Magazines																
	Gable Top/Aseptic Containers																
	Other Mixed Recyclable Paper/Kraft																
	Non-recyclable Paper Products																
<b>Plastic</b>	PET Bottles (#1)																
	PET Containers/Packaging (#1)																
	HDPE Color (#2)																
	HDPE Natural (#2)																
	Mixed Bottles/Containers (#3-#7 non ES #6)																
	EPS Foam (#6)																
	Film & Flexible Packaging																
	Mixed Rigid Bulky	Kid pool												Fan Cover			

	Non-Recyclable Rigid Plastic					#7 Marked Bags									
Glass	Recyclable Glass														
	Non-Recyclable Glass									Broken Mix					
Metals	Ferrous Metal Containers														
	Aluminum Cans (UBC)														
	Other Metals													Car A-Frame, Safe	
Organics	Food/Putrescible Waste		2nd Container Fines												
	Compostable Fibers (Paper Towels, Etc.)										Wet				
	Other Organics				Kitty Litter	Plant Clippings	Dog Poo	Leaves			Straw	Hay	Soil	Cat Litter	
Textiles	Re-Usable Textiles			Blankets							Bedding				
	Non-Recyclable Textiles						Nylon Bale Wrap				Carpet/PPE Wear				
	Leather & Rubber														
HHW	Household Hazardous Waste		Stain	Medicine and Sun Screen	5 Needles	Med Needles	Bug killer	Meds	Epi Pen	Lighter	Meds/Needle, Cleaner	Fireworks	Bug Killer	Meds	
Electronics	All Electronics			Xmas light	Brake Fluid		PVC, Cement				Vacuum				
C&D	Wood	Cabinet			Fan										
	Other C&D			PVC							Mix				
Other	Fines	Lots of Food													
	Diapers														
	Other Bulky or Composite Items		Bike Rack (metal)							W/Metal Tube				Mostly Film w/Meat and Foam	

Certificate of Analysis

All data reported has been reviewed and approved by:  
 Stacy Zander, Bismarck Assistant Lab Manager Bismarck, ND

Lab ID: 878001  
 Sample ID: Red Wing Unit 1 RDF  
 Date Collected: 04/19/2022  
 Date Received: 05/03/2022 10:04  
 Matrix: RD  
 Collector: Client

Permit Issued: [month day, year]  
 Permit Expires: [month day, year]

**\* PROXIMATE \***

ANALYTE	AS RECEIVED		DRY BASIS	
Total Moisture	46.41	wt. %		
Air Dry Moisture	44.24	wt. %		
Oven Dry Moisture	3.90	wt. %		
Ash	11.55	wt. %	21.56	wt. %
Volatile Matter	39.50	wt. %	73.72	wt. %
Fixed Carbon	2.53	wt. %	4.72	wt. %
BTU/lb	3184	BTU/lb	5941	BTU/lb
Total Sulfur	0.21	wt. %	0.40	wt. %

**\* ULTIMATE \***

ANALYTE	AS RECEIVED		DRY BASIS	
Total Moisture	46.41	wt. %		
Air Dry Moisture	44.24	wt. %		
Oven Dry Moisture	3.90	wt. %		
Ash	11.55	wt. %	21.56	wt. %
Carbon	22.23	wt. %	41.49	wt. %
Hydrogen	8.29	wt. %	5.78	wt. %
Nitrogen	0.80	wt. %	1.49	wt. %
Total Sulfur	0.21	wt. %	0.40	wt. %
Oxygen by Difference	56.91	wt. %	29.29	wt. %

**\* SULFUR FORMS \***

ANALYTE	AS RECEIVED		DRY BASIS	
Total Sulfur	0.21	wt. %	0.40	wt. %

**\* ASH FUSION \***

ANALYTE	REDUCING	OXIDIZING

**\* MINERAL ANALYSIS OF ASH \***

ANALYTE	DRY BASIS	

**\* MISCELLANEOUS \***

ANALYTE	AS RECEIVED		DRY BASIS	
Hydrogen Less Water	3.10	wt. %		
Oxygen Less Water	15.69	wt. %		

Lab ID: 878002  
 Sample ID: Red Wing Unit 1 RDF  
 Date Collected: 04/20/2022  
 Date Received: 05/03/2022 10:04  
 Matrix: RD  
 Collector: Client

**\* PROXIMATE \***

ANALYTE	AS RECEIVED		DRY BASIS	
Total Moisture	42.93	wt. %		
Air Dry Moisture	40.75	wt. %		
Oven Dry Moisture	3.68	wt. %		
Ash	14.83	wt. %	25.99	wt. %
Volatile Matter	38.05	wt. %	66.68	wt. %
Fixed Carbon	4.18	wt. %	7.33	wt. %
BTU/lb	4079	BTU/lb	7148	BTU/lb
Total Sulfur	0.19	wt. %	0.33	wt. %

**\* ULTIMATE \***

ANALYTE	AS RECEIVED		DRY BASIS	
Total Moisture	42.93	wt. %		
Air Dry Moisture	40.75	wt. %		
Oven Dry Moisture	3.68	wt. %		
Ash	14.83	wt. %	25.99	wt. %
Carbon	25.21	wt. %	44.18	wt. %
Hydrogen	8.22	wt. %	5.98	wt. %
Nitrogen	0.99	wt. %	1.73	wt. %
Total Sulfur	0.19	wt. %	0.33	wt. %
Oxygen by Difference	50.57	wt. %	21.79	wt. %

**\* SULFUR FORMS \***

ANALYTE	AS RECEIVED		DRY BASIS	
Total Sulfur	0.19	wt. %	0.33	wt. %

**\* ASH FUSION \***

ANALYTE	REDUCING	OXIDIZING

Permit Issued: [month day, year]  
Permit Expires: [month day, year]

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\* MINERAL ANALYSIS OF ASH \*  
ANALYTE DRY BASIS

\* MISCELLANEOUS \*  
ANALYTE AS RECEIVED DRY BASIS

Hydrogen Less Water	3.41	wt. %		
Oxygen Less Water	12.44	wt. %		

Lab ID: 878003  
Sample ID: Red Wing Unit 2 RDF  
Date Collected: 04/21/2022  
Date Received: 05/03/2022 10:04  
Matrix: RD  
Collector: Client

\* PROXIMATE \*  
ANALYTE AS RECEIVED DRY BASIS

Total Moisture	3	8.65	wt. %		
Air Dry Moisture		36.56	wt. %		
Oven Dry Moisture		3.29	wt. %		
Ash		13.13	wt. %	21.39	wt. %
Volatile Matter		45.93	wt. %	74.86	wt. %
Fixed Carbon		2.30	wt. %	3.75	wt. %
BTU/lb		5087	BTU/lb	8292	BTU/lb
Total Sulfur		0.21	wt. %	0.34	wt. %

\* ULTIMATE \*  
ANALYTE AS RECEIVED DRY BASIS

Total Moisture		38.65	wt. %		
Air Dry Moisture		36.56	wt. %		
Oven Dry Moisture		3.29	wt. %		
Ash		13.13	wt. %	21.39	wt. %
Carbon		30.18	wt. %	49.19	wt. %
Hydrogen		8.70	wt. %	7.13	wt. %
Nitrogen		0.79	wt. %	1.28	wt. %
Total Sulfur		0.21	wt. %	0.34	wt. %
Oxygen by Difference		47.00	wt. %	20.67	wt. %

\* SULFUR FORMS \*  
ANALYTE AS RECEIVED DRY BASIS

Total Sulfur		0.21	wt. %	0.34	wt. %
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\* ASH FUSION \*  
ANALYTE REDUCING OXIDIZING

\* MINERAL ANALYSIS OF ASH \*  
ANALYTE DRY BASIS

\* MISCELLANEOUS \*  
ANALYTE AS RECEIVED DRY BASIS

Hydrogen Less Water	4.37	wt. %		
Oxygen Less Water	12.68	wt. %		

Lab ID: 878004  
Sample ID: Red Wing Unit 2 RDF  
Date Collected: 04/22/2022  
Date Received: 05/03/2022 10:04  
Matrix: RD  
Collector: Client

\* PROXIMATE \*  
ANALYTE AS RECEIVED DRY BASIS

Total Moisture		39.96	wt. %		
Air Dry Moisture		37.53	wt. %		
Oven Dry Moisture		3.88	wt. %		
Ash		10.38	wt. %	17.29	wt. %

\* ULTIMATE \*  
ANALYTE AS RECEIVED DRY BASIS

Total Moisture		39.96	wt. %		
Air Dry Moisture		37.53	wt. %		
Oven Dry Moisture		3.88	wt. %		
Ash		10.38	wt. %	17.29	wt. %

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Volatile Matter	46.79	wt. %	77.93	wt. %
Fixed Carbon	2.87	wt. %	4.78	wt. %
BTU/lb	4181	BTU/lb	6964	BTU/lb
Total Sulfur	0.21	wt. %	0.35	wt. %

Carbon	27.16	wt. %	45.24	wt. %
Hydrogen	8.15	wt. %	6.13	wt. %
Nitrogen	0.64	wt. %	1.07	wt. %
Total Sulfur	0.21	wt. %	0.35	wt. %
Oxygen by Difference	53.45	wt. %	29.91	wt. %

\* SULFUR FORMS \*

ANALYTE	AS RECEIVED		DRY BASIS	
Total Sulfur	0.21	wt. %	0.35	wt. %

\* ASH FUSION \*

ANALYTE	REDUCING	OXIDIZING
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\* MINERAL ANALYSIS OF ASH \*

ANALYTE	DRY BASIS
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\* MISCELLANEOUS \*

ANALYTE	AS RECEIVED		DRY BASIS
Hydrogen Less Water	3.68	wt. %	
Oxygen Less Water	17.96	wt. %	

Lab ID: 878005  
Sample ID: Red Wing Unit 2 RDF  
Date Collected: 04/26/2022  
Date Received: 05/03/2022 10:04  
Matrix: RD  
Collector: Client

\* PROXIMATE \*

ANALYTE	AS RECEIVED		DRY BASIS	
Total Moisture	34.06	wt. %		
Air Dry Moisture	32.22	wt. %		
Oven Dry Moisture	2.70	wt. %		
Ash	14.04	wt. %	21.29	wt. %
Volatile Matter	49.77	wt. %	75.47	wt. %
Fixed Carbon	2.13	wt. %	3.24	wt. %
BTU/lb	5530	BTU/lb	8386	BTU/lb
Total Sulfur	0.24	wt. %	0.36	wt. %

\* ULTIMATE \*

ANALYTE	AS RECEIVED		DRY BASIS	
Total Moisture	34.06	wt. %		
Air Dry Moisture	32.22	wt. %		
Oven Dry Moisture	2.70	wt. %		
Ash	14.04	wt. %	21.29	wt. %
Carbon	33.22	wt. %	50.38	wt. %
Hydrogen	8.28	wt. %	6.78	wt. %
Nitrogen	1.19	wt. %	1.80	wt. %
Total Sulfur	0.24	wt. %	0.36	wt. %
Oxygen by Difference	43.03	wt. %	19.39	wt. %

\* SULFUR FORMS \*

ANALYTE	AS RECEIVED		DRY BASIS	
Total Sulfur	0.24	wt. %	0.36	wt. %

\* ASH FUSION \*

ANALYTE	REDUCING	OXIDIZING
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\* MINERAL ANALYSIS OF ASH \*

ANALYTE	DRY BASIS
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\* MISCELLANEOUS \*

ANALYTE	AS RECEIVED		DRY BASIS
Hydrogen Less Water	4.47	wt. %	
Oxygen Less Water	12.78	wt. %	

Lab ID: 878006  
Sample ID: Red Wing Unit 1 RDF  
Date Collected: 04/27/2022  
Date Received: 05/03/2022 10:04  
Matrix: RD

Permit Issued: [month day, year]  
 Permit Expires: [month day, year]

Collector: Client

* PROXIMATE *				
ANALYTE	AS RECEIVED	DRY BASIS		
Total Moisture	30.47 wt. %			
Air Dry Moisture	28.38 wt. %			
Oven Dry Moisture	2.92 wt. %			
Ash	7.03 wt. %	10.12 wt. %		
Volatile Matter	58.00 wt. %	83.41 wt. %		
Fixed Carbon	4.50 wt. %	6.47 wt. %		
BTU/lb	5809 BTU/lb	8355 BTU/lb		
Total Sulfur	0.14 wt. %	0.21 wt. %		

* ULTIMATE *				
ANALYTE	AS RECEIVED	DRY BASIS		
Total Moisture	30.47 wt. %			
Air Dry Moisture	28.38 wt. %			
Oven Dry Moisture	2.92 wt. %			
Ash	7.03 wt. %	10.12 wt. %		
Carbon	35.32 wt. %	50.79 wt. %		
Hydrogen	8.06 wt. %	6.69 wt. %		
Nitrogen	0.64 wt. %	0.92 wt. %		
Total Sulfur	0.14 wt. %	0.21 wt. %		
Oxygen by Difference	48.81 wt. %	31.28 wt. %		

* SULFUR FORMS *				
ANALYTE	AS RECEIVED	DRY BASIS		
Total Sulfur	0.14 wt. %	0.21 wt. %		

* ASH FUSION *		
ANALYTE	REDUCING	OXIDIZING

* MINERAL ANALYSIS OF ASH *	
ANALYTE	DRY BASIS

* MISCELLANEOUS *		
ANALYTE	AS RECEIVED	DRY BASIS
Hydrogen Less Water	4.65 wt. %	
Oxygen Less Water	21.75 wt. %	

Lab ID: 878007  
 Sample ID: Red Wing Unit 2 RDF  
 Date Collected: 04/28/2022  
 Date Received: 05/03/2022 10:04  
 Matrix: RD  
 Collector: Client

* PROXIMATE *				
ANALYTE	AS RECEIVED	DRY BASIS		
Total Moisture	38.66 wt. %			
Air Dry Moisture	36.23 wt. %			
Oven Dry Moisture	3.82 wt. %			
Ash	10.99 wt. %	17.92 wt. %		
Volatile Matter	46.28 wt. %	75.45 wt. %		
Fixed Carbon	4.06 wt. %	6.63 wt. %		
BTU/lb	3894 BTU/lb	6349 BTU/lb		
Total Sulfur	0.20 wt. %	0.32 wt. %		

* ULTIMATE *				
ANALYTE	AS RECEIVED	DRY BASIS		
Total Moisture	38.66 wt. %			
Air Dry Moisture	36.23 wt. %			
Oven Dry Moisture	3.82 wt. %			
Ash	10.99 wt. %	17.92 wt. %		
Carbon	24.97 wt. %	40.70 wt. %		
Hydrogen	7.65 wt. %	5.42 wt. %		
Nitrogen	0.57 wt. %	0.93 wt. %		
Total Sulfur	0.20 wt. %	0.32 wt. %		
Oxygen by Difference	55.62 wt. %	34.69 wt. %		

* SULFUR FORMS *				
ANALYTE	AS RECEIVED	DRY BASIS		
Total Sulfur	0.20 wt. %	0.32 wt. %		

* ASH FUSION *		
ANALYTE	REDUCING	OXIDIZING

Permit Issued: [month day, year]  
 Permit Expires: [month day, year]

\* MINERAL ANALYSIS OF ASH \*

ANALYTE DRY BASIS

\* MISCELLANEOUS \*

ANALYTE	AS RECEIVED	DRY BASIS
Hydrogen Less Water	3.32 wt. %	
Oxygen Less Water	21.28 wt. %	

Lab ID: 878008  
 Sample ID: Red Wing Unit 2 RDF  
 Date Collected: 04/29/2022  
 Date Received: 05/03/2022 10:04  
 Matrix: RD  
 Collector: Client

\* PROXIMATE \*

ANALYTE	AS RECEIVED	DRY BASIS
Total Moisture	40.84 wt. %	
Air Dry Moisture	39.12 wt. %	
Oven Dry Moisture	2.83 wt. %	
Ash	12.52 wt. %	21.17 wt. %
Volatile Matter	45.79 wt. %	77.41 wt. %
Fixed Carbon	0.84 wt. %	1.42 wt. %
BTU/lb	4577 BTU/lb	7738 BTU/lb
Total Sulfur	0.27 wt. %	0.45 wt. %

\* ULTIMATE \*

ANALYTE	AS RECEIVED	DRY BASIS
Total Moisture	40.84 wt. %	
Air Dry Moisture	39.12 wt. %	
Oven Dry Moisture	2.83 wt. %	
Ash	12.52 wt. %	21.17 wt. %
Carbon	29.06 wt. %	49.12 wt. %
Hydrogen	8.83 wt. %	7.20 wt. %
Nitrogen	0.69 wt. %	1.17 wt. %
Total Sulfur	0.27 wt. %	0.45 wt. %
Oxygen by Difference	48.63 wt. %	20.89 wt. %

\* SULFUR FORMS \*

ANALYTE	AS RECEIVED	DRY BASIS
Total Sulfur	0.27 wt. %	0.45 wt. %

\* ASH FUSION \*

ANALYTE	REDUCING	OXIDIZING
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\* MINERAL ANALYSIS OF ASH \*

ANALYTE DRY BASIS

\* MISCELLANEOUS \*

ANALYTE	AS RECEIVED	DRY BASIS
Hydrogen Less Water	4.26 wt. %	
Oxygen Less Water	12.36 wt. %	

## Appendix E. Industrial Solid Waste Management Plan

\*Also included in the Tempo central file as a .pdf document

### 1.0 PURPOSE

The purpose of this section is to describe the process for evaluating, accepting, and managing solid waste for combustion at Red Wing Generating Plant. Red Wing Generating Plant is permitted to combust natural gas, wood, distillate fuel oil, used oil generated onsite, refuse-derived fuel (RDF) as defined in Minn. Stat., 115A.03, subp. 21, and other non-hazardous wastes approved through the facility's Industrial Solid Waste Management Plan. This section contains the ISWMP for approved solid wastes.

### 2.0 DISCUSSION

The Industrial Solid Waste Management Plan (ISWMP) describes processes a facility employs when managing solid wastes to comply with federal, state, and local hazardous and solid waste regulations. For waste combustors operating in the state of Minnesota, an ISWMP is also required by air quality regulations under Minn. R. 7011.1250, which references solid waste rule Minn. R. 7035.2535 and requires additional plan elements for wastes which will be combusted. The procedures within the plan are intended to minimize hazards to human health and the environment. When solid wastes have been properly evaluated and managed in accordance with the ISWMP this ensures material can be properly combusted while maintaining compliance with applicable air quality regulations.

Red Wing Generating Plant primarily accepts RDF from several independent suppliers. The RDF suppliers are responsible for accepting, sorting, rejecting, handling, and processing of municipal and industrial solid waste into RDF in accordance with solid waste rules. Xcel Energy is responsible for combusting the RDF to generate electricity while complying with air quality and other environmental regulations. The RDF received at Red Wing is not considered solid waste, but rather processed fuel. Accordingly, Xcel Energy is not required to have an ISWMP for RDF under solid waste rules and incorporates the RDF fuel supplier's ISWMPs by reference for compliance with the air quality rules. The ISWMPs for each RDF fuel supplier are available in the Red Wing environmental files. Managing unprocessed fuel or other unacceptable wastes received with RDF from fuel suppliers is addressed at the end of this plan and Section V of this manual.

Procedures for direct acceptance of select solid wastes at Red Wing which are not pre-processed into RDF are contained in this ISWMP. The ISWMP and any subsequent revisions to include a new solid waste type must be approved by the Minnesota Pollution Control Agency (MPCA) prior to accepting the waste.

### 3.0 ACCEPTANCE OF SOLID WASTES

There are certain solid wastes that Xcel Energy may choose to accept directly at the Red Wing Generating Plant, which are not considered RDF. This includes other non-hazardous solid wastes as allowed by this plan, such as avian and bat carcasses, household hazardous waste pharmaceuticals, plant-form controlled substances, and law enforcement-seized controlled substances. Details pertaining to evaluation, acceptance and management of these solid wastes are included in the following sections of this plan. Only solid wastes explicitly allowed by this plan will be directly accepted at Red Wing Generating Plant.

#### 3.1 *Avian and Bat Carcasses Generated at Xcel Energy Facilities*

The facility can accept small amounts of avian and bat carcasses, not to include threatened or endangered species or eagle carcasses, which are generated at Xcel Facilities only. Quantities are limited to 500 carcasses or less per year. Carcasses are to be collected, transported, and disposed of in accordance with Xcel Energy's federal Migratory Bird Special Use Utility Permit(s) which allow for disposal by incineration. The carcasses will be mixed with RDF and are not anticipated to negatively impact combustion. The facility may choose to reject any carcasses at any time for any reason.



### 3.2 Household Hazardous Waste Pharmaceuticals

On September 9, 2010 the MPCA issued a Program Management Decision (PMD) Memo which discusses facilitating safe and efficient collection and management of waste pharmaceuticals generated from households. The PMD allows collection and management of household pharmaceutical waste in accordance with Minn. R. 7045.0310 as modified by the terms and conditions set forth in the PMD. It establishes a pilot project that allows the owner or operator of a solid waste management facility managing household pharmaceutical waste in accordance with Minn. R. 7045.0310 to accept household pharmaceutical waste for disposal by permitted municipal solid waste or medical waste incineration until necessary changes can be made to the Minnesota Rules.

Minnesota Rule 7035.2535, subpart 6 (C) allows Household Hazardous Waste Pharmaceuticals to be combusted in the boilers if all requirements of part 7045.0310 are met. Facilities seeking approval to incinerate HHW Pharmaceuticals must request permission from the MPCA via the following criteria:

1. Notify MPCA as a HHW Collection Program
2. Request/Receive approval to accept collected HHW pharmaceuticals from off-site
3. Request/Receive approval to treat HHW pharmaceuticals via incineration
4. Modify existing HHW management plan
  - a. Describe acceptance criteria: allowable containers, hours of operation or pre-notification requirements when material can be delivered
  - b. Describe stable operating conditions of the incinerator
  - c. Describe conditions for rejecting a load/delivery/container
  - d. Describe any limitations for size/quantity/frequency of delivery
5. Provide "comprehensive" summary compliance record for the past three years: Air, SW, HW, WQ. Note "significant violations" if any, and the date of their occurrence

#### 3.2.1 Management Plan

Definition: HHW Pharmaceuticals are defined as pharmaceuticals generated from households which have been separated from Municipal Solid Waste prior to collection. Eligible pharmaceuticals under this section include: unused, unwanted, expired or unusable over-the-counter and/or prescription drugs collected through any approved Household Pharmaceutical Consolidation Sites (HPCS). Other materials commonly associated with pharmaceuticals which shall be accepted include: pharmaceutical packaging/containers/literature, IV bags, IV lines, etc.

Acceptance: The Red Wing plant will accept HHW pharmaceuticals for incineration from approved HPCS during normal business hours when sufficient staff are available and drop-off is scheduled in advance. HHW Pharmaceuticals shall be accepted for disposal only at the incinerator, in accordance with the established protocols for this type of waste (see Special Wastes Disposal Procedures attachment).

Limitations for size/quantity/frequency of delivery: Red Wing plant will incinerate up to one-ton HHW pharmaceuticals per day. Each HHW Pharmaceutical package shall be 50 lbs or less in weight and approximately 8" x 8" x 12" in size (sealed combustible bag or box). HHW pharmaceuticals must be transported by Law Enforcement from the HPCS. Once HHW Pharmaceuticals arrive on site they must, at all times, remain in the custody of Law Enforcement until incinerated.

Operating Conditions: HHW Pharmaceuticals can be introduced into the boiler when RDF is being continuously burned, except during periods of startup, shut down, or malfunction. HHW Pharmaceuticals will be combusted under the same emission limitations listed in the Minnesota Rule 7011.1227 Table 1 for Class A Waste Combustors.

Conditions for Rejection: The Red Wing plant reserves the right to reject HHW pharmaceuticals from HPCS at any time. Grounds for rejecting the waste may include but are not limited to the lack of proper notification provided by Law Enforcement, planned and unplanned boiler outages, boiler de-rates, lack of approved witnesses, contents of waste look to be other than HHW pharmaceuticals, quantity exceeds daily maximum, etc.

### 3.3 *Plant-form Controlled Substances*

In September of 2009 the MPCA published the fact sheet #4.13, "Managing Law Enforcement Confiscated Drugs" to provide law enforcement agencies with guidance on proper disposal of confiscated controlled substances. The following plant-form controlled substances are classified as non-hazardous waste, subsequently they can be disposed of by incineration at Municipal Solid Waste (MSW) facilities; coca, iboga, magic mushrooms, marijuana, salvia divinorum, hashish, khat, peyote, and yopo.

Law enforcement officials may transport and dispose of plant-form controlled substances at the Xcel Energy, Red Wing Plant as detailed in the following Management Plan. For other confiscated drugs deemed hazardous (e.g. cocaine, methamphetamine) confiscated by law enforcement agencies, see Section 3.3 "Law Enforcement-Seized Drugs".

#### 3.3.1 *Management Plan*

Law enforcement must contact Red Wing Plant management in advance to arrange a date and time for incineration of plant-form controlled substances. Once scheduled, the following process must be followed by the law enforcement official:

- 1) All materials must be inspected by law enforcement to ensure they do not contain any hazardous waste and are free of any materials or items not acceptable for disposal at the Facility.
- 2) Law enforcement customers are required to place materials for destruction in appropriate containers. Said containers shall be sealed prior to arrival at the Plant.
- 3) Upon arrival at the facility, any customer shall check in at the plant office. Law enforcement officials shall be required to review any special handling, security or witness requirements with plant staff and Lead Plant Equipment Operator (LPEO) to ensure the safety of facility staff and the customer(s) and their representatives.
- 4) The LPEO shall review with customer any security issues, including location of witness(es) or pre-disposal or post-disposal inspections. The customer shall be provided with the minimum PPE as required by plant policy (some customers may come with their own PPE).
- 5) The customer shall weigh the item(s) prior to arriving on-site for disposal. The LPEO or plant staff will direct the customer to appropriate area to unload item(s) for disposal once the incinerator is ready for material acceptance (law enforcement protocol may dictate if other non-law enforcement personnel is allowed to witness incineration, other than the LPEO).
- 6) Prior to incineration, the LPEO shall ensure the material for destruction is in appropriate sealed containers and verbally verify the contents are acceptable for disposal. (LPEO will NOT open container)
- 7) The law enforcement official shall remove the container for disposal from the vehicle and place it in the designated in-feed chute for introduction into the primary combustion unit. The process shall be repeated for each of the customer's containers.
- 8) Both the LPEO and witness/customer shall complete the requisite documentation of material destruction, sign the tip ticket, and complete any chain-of-custody paperwork. Said documentation shall be kept on file for 5 years.

The Plan and other solid waste tracking and recordkeeping procedures will maintain a separate account of plant-form controlled substances. The amounts of plant-form controlled substances handled will be included in the Facility's annual Solid Waste Management Report under Minn. R. 7035.2585.

#### 3.4 *Law Enforcement-Seized Drug Wastes*

In late 2021 the 3M Hazardous Waste Incinerator permanently closed. With many of these drug wastes prohibited from disposal in Minnesota for potential to being deemed hazardous waste, law enforcement agencies began to stockpile additional drug wastes with no clear avenue for disposal. MPCA saw a need to expand the acceptance program to include Municipal Waste Combustors and thus developed an interim approval process that interested facilities can follow to begin accepting additional law enforcement confiscated drugs. Red Wing Generating Plant shall work with the MPCA to receive a "Letter of No Action" (LONA) that shall serve as an agreement between the state and the facility to burn law enforcement-seized drug waste following agreed upon conditions of acceptance, management and recordkeeping.

### 3.4.1 Management Plan

Definition of Law Enforcement-Sized Drug Wastes: Seized drugs accepted directly from government-operated law enforcement agencies which have been separated from Municipal Solid Waste prior to disposal. Eligible drugs under this section include: prescription medications and illicitly-manufactured drugs (methamphetamine, opioids, etc.), and associated packaging, e.g. evidence tags, cardboard boxes, and plastic bags and totes. Hazardous waste clandestine laboratory chemicals and household pharmaceuticals collected voluntarily by law enforcement agencies are not included in this section. This does not include any other law enforcement wastes, such as ammunition, firearm cleaning solvents, fireworks, or chemical wastes.

Approval Process: The plant SHALL receive written approval from the MPCA prior to accepting any law enforcement drug waste. The law enforcement agency must identify drug waste container sizes and weights to ensure they are acceptable for disposal directly into boiler. Specific container types and sizes may vary based on boiler configuration. The container size shall be small enough to fit within the fuel feed system adjacent to the firebox and pose no issue to air flow, combustion, or final incineration. Containers not meeting expectations shall be rejected. The ideal container is an 8"x8"x16" corrugated box that is sealed to provide zero leakage of internal contents.

Facility shall only allow disposal of drug wastes directly into boiler firebox. Facility is prohibited from placing drug waste on any fuel conveying system due to concerns that contents of containers could inadvertently open, presenting exposure or possibility that containers could be diverted from incineration.

Facility shall require drug wastes arrive and be kept in sealed containers at all times. Sealing of containers (e.g. taping shut, tying bag, etc.) shall be performed by law enforcement prior to arrival at the facility. Containers that are not sealed, or the seal is removed during unloading process, shall be rejected.

Delivery Process: Facility shall identify a check-in procedure for visiting law enforcement staff. All law enforcement staff shall follow this check-in procedure upon arrival.

Law enforcement staff SHALL review any special handling, security or witness requirements with plant staff and LPEO (Lead Plant Equipment Operator) to ensure the safety of facility staff and the customer(s) and their representatives.

The LPEO SHALL review with customer any security issues, including location of witness(es) or pre-disposal or post-disposal inspections. The customer SHALL be provided with the minimum PPE as required by plant policy (some customers may come with their own PPE).

Law enforcement staff SHALL weigh the item(s) prior to arriving on-site for disposal. Total weight of packages SHALL be provided to Xcel Energy and SHALL be recorded on appropriate documentation.

Waste Inspection: The LPEO SHALL inspect all drug waste containers (size, container type, individual weight, total delivery weight) upon delivery by law enforcement and ensure containers meet facility-specific acceptance criteria. Measurement of container weight by LPEO is not required unless there is concern that the container is overweight.

The LPEO SHALL NOT inspect the physical contents within drug waste containers, i.e. containers SHALL NOT be opened. Rather, only the container in which drugs are delivered SHALL be inspected.

The LPEO SHALL reject all drug waste containers that do not meet acceptance criteria or occur outside of pre-defined operating times and durations.

Law enforcement staff SHALL inspect all materials destined for destruction to ensure containers are free of any materials or items not acceptable for disposal at the facility, per each site's Industrial Solid Waste Management Plan (IWSMP) or other relevant procedures.

Prior to incineration, the LPEO SHALL ensure the material for destruction is in appropriate sealed containers and verbally verify the contents are acceptable for disposal.

Plant Management SHALL perform periodic waste inspections to ensure site staff and law enforcement personnel are following facility-specific acceptance criteria.

Disposal Process: Upon satisfactory inspection of containers, the LPEO SHALL accompany law enforcement staff to the appropriate area to unload item(s) for disposal into the combustion chamber. LPEO SHALL accompany law enforcement staff at all times during this process. Note, law enforcement protocol may dictate if other non-law enforcement personnel are allowed to witness incineration, other than the LPEO.

Law enforcement staff SHALL maintain sole custody of all drug waste containers at all times until containers are placed into the combustion chamber. Only law enforcement officials SHALL handle containers when disposing into the combustion chamber. Xcel Energy staff SHALL NOT handle, hold, remove, list, place, or otherwise take possession of any drug container at any time.

During the disposal process, the LPEO SHALL open the fuel feed chute, hatch, or in-feed conveyor adjacent to the combustion chamber so that law enforcement staff can place drug waste containers into the fuel feed system. Law enforcement staff SHALL NOT open or manipulate any plant related component at any time. Law enforcement staff SHALL only handle drug waste containers.

Plant Management SHALL perform periodic disposal process inspections to ensure site staff and law enforcement personnel are following facility-specific handling/disposal protocols.

Recordkeeping: The LPEO and a law enforcement representative SHALL complete the requisite documentation for each drug disposal event. This includes any internal tipping ticket, chain-of-custody paperwork, in addition to law enforcement provided paperwork.

The LPEO SHALL provide law enforcement staff with a photocopy or carbon copy of Xcel Energy signed paperwork during each disposal event.

Facility SHALL keep documentation from each waste disposal event on file for at least 5-years, and in accordance with additional regulatory permits or approvals specific to this effort.

### *3.5 Unacceptable Wastes*

No other solid wastes, accept those explicitly allowed within this plan, will be directly accepted at Red Wing Generating Plant. Any waste received at Red Wing Generating Plant that are not approved through this plan or through the plans of the fuel suppliers is deemed "Unacceptable Waste." Fuel suppliers to Red Wing Generating Plant use reasonable efforts to ensure RDF does not contain Unacceptable Waste. Unacceptable Waste means wastes or other materials that would pose a threat to human health or safety, the environment, or may cause damage to or adversely affect the operation of the plant.

Although Unacceptable Wastes should be removed from the RDF prior to being delivered to Xcel Energy, plant employees should be aware of the types of Unacceptable Wastes so the wastes can be identified, if present, and removed. Some forms of Unacceptable Wastes include:

- Ferrous and non-ferrous metals, mercury; \*
- Materials that may contain lead, including circuit boards, electronics, paints, batteries (e.g. lead acid and lead gel), and large metallic items; \*
- Hospital, pathological or biological waste;
- Hazardous waste or toxic waste;
- Hazardous or toxic chemicals, radioactive materials;
- Asbestos;
- Cesspool, domestic sewage or other sewage sludge;
- Human or animal remains, with exception to avian carcasses as approved through this ISWMP;
- Street sweepings;
- Mining wastes;
- Sludges;
- Non-combustible demolition or construction debris, including but not limited to sheet rock, metal studs/framing, metal siding, garage doors, lights, bricks, block or concrete;
- Liquid, including cleaning fluids, paints, pigments, acids and caustics;
- Oil sludges and crankcase oils, other than permitted used oil generated onsite;
- Poisons and drugs except as approved in this plan;
- Windshields, mirrors, tires, or other automotive parts;
- Asphalt shingles;
- Explosives;
- Appliances; and
- Any other identifiable material determined as Unacceptable Waste by the Xcel Energy

\*Metals including mercury, cadmium, and lead do not combust efficiently and cannot be further broken down by the combustion process. These metals have low melting points; therefore, they can enter the air stream readily when in the combustion chamber. Consequently, the best way to limit metal-related emissions at Red Wing Generating Plant is through sound waste stream management by the fuel suppliers and effective operation of the emission control equipment. Emission limits for these metals are listed in Section A, Table 1 of this operating manual.

If a suspicious or Unacceptable Waste is delivered to the site or identified within the fuel handling system, facility personnel are instructed to perform the following:

- Notify facility management;
- Use caution to segregate the waste using appropriate PPE, tools, and equipment;
- Keep suspicious or Unacceptable Waste in safe area away from vehicle traffic, facility personnel, and exposure to the environment.
- Attempt to determine which delivery the suspicious or Unacceptable Waste came from and contact the supplier to pick up the material for appropriate disposal.
- If the waste is identified as a hazardous material facility personnel should contact Environmental Services staff to determine reportability to MN Duty Officer.

**4 REVISION HISTORY**

Date	Revision Number	
	1	
6/1/2005	2	Edit and Format changes
6/17/2010	3	Edit and Format changes, placed SWMP in separate book
4/20/2016	4	Revised title to "Generating" from "Steam"

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3/01/2024	5	Revised plan ton include acceptances of select solid wastes including avian/bat carcasses, HHW, Plant-form controlled substances, and Law Enforcement Seized controlled substances
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## Appendix F. RDF Transfer Station and Unloading Area Housekeeping Plan

\*Also included in the Tempo central file as a .pdf document

### RDF Receiving Area Housekeeping Plan

#### Introduction

During the course of normal activities, RDF can become airborne due to the design of the Receiving Area Building (one side open for semi-trailers). It is necessary to implement the following housekeeping procedures to minimize particulate emissions from open doors.

#### Precautions

Fugitive RDF should be collected and placed in the Receiving Area, either on the Walking Floor Conveyor or in the Storage Building.

#### Housekeeping

To minimize the opportunity for RDF to become airborne

1. The doors to the Receiving Area Storage Building shall be kept closed at all times when not loading RDF on the walking floor. Keep main access doors to the Storage Building closed when not unloading trucks in the Storage Building.
2. Truck drivers delivering RDF to the Plant shall sweep the backs of the trailers and doors free of RDF and into the walking floor before leaving the truck bays.
3. The truck unloading side of the Receiving Area Building will be cleaned a minimum of 3 times/week with regards to operation on RDF fuel.
4. Weekly inspections of the site will be performed during non-snow covered times of the year to monitor the site for fugitive RDF.
5. The Transfer Conveyor gallery will be cleaned on at least a weekly basis.
6. Fugitive RDF will be picked up and returned to the Receiving Area building on a regular basis during non-snow covered times of the year.

#### Traffic Control

Any equipment utilized in the Receiving Area building shall be confined to the building. If necessary to take equipment from the facility, vehicles shall be inspected for loose RDF and cleaned before leaving the area.

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**Appendix G. 1996 MSW Combustor Ash Testing Variance**

\*Also included in the Tempo central file as a .pdf document

October 18, 1996

Mr. Sam Lucido  
Northern States Power Company  
414 Nicollet Mall  
Minneapolis, Minnesota 55401

RE: MSW Combustor Ash Testing Variance  
NSP Wilmarth RDF Ash Landfill, SW-298 & Redwing, SW 307

Dear Mr. Lucido:

On August 9, 1996, the Minnesota Pollution Control Agency (MPCA) issued a public notice of its intent to modify several solid waste disposal facility and municipal solid waste (MSW) combustor permits to allow for a variance from Minn. R. 7035.2910 pertaining to the ash testing requirements for MSW combustors and Minn. R 7035. 2885, subp. 10A (1) pertaining to MSW combustor ash land disposal facilities. A summary of the specific rule citation and the MPCA's action is provided below.

The MPCA received one comment during the public notice pertaining to the MPCA's recommend action on the dioxin and furan testing requirement. The comment in part, contended that since the MPCA was incorporating the one part per billion limit from the Statement of Need and Reasonableness (SONAR) for the MSW Combustor Ash Land Disposal Facility Rules, that it should be based total 2,3,7,8-TCDD Equivalents as stated in the SONAR. MPCA staff agree with this comment and have incorporated that change into the final variance language.

Minnesota Rule	MPCA Action
Minn. R. 7035.2910, subp. 3. Frequency. The owner or operator must collect samples at least quarterly..... Quarterly samples and an annual composite sample formed from equal portions of the quarterly samples must be analyzed according to subp 5.....	MPCA approves the variance deleting individual analysis of quarterly samples. Facilities shall continue to collect quarterly samples to form an annual composite sample for analysis.
Minn. R. 7035.2910, subp. 4. Test Methods. The owner or operator must test for total composition, leaching potential, and physical characteristics...	MPCA staff approves the variance for deleting testing for leaching potential using Environmental Protection Agency (EPA) Method 1311 for hazardous determination. However, after a change has occurred within the air pollution control equipment, the facility must recharacterize their ash using EPA Method 1311 in accordance with MPCA Hazardous Waste Division requirements. Leaching potential through EPA Method 1312 is also used to determine minimum liner design requirements. If all the requirements of Minn.1015.2885, subp. 4B apply at a given facility, then it is not necessary to conduct any EPA Method 1312 testing and liner design will be based solely on actual leachate analysis. However, if all of the requirements of Minn. R 7035.2885. subp. 4B cannot be met, the facility must perform four



	quarters of EPA Method 1312 testing during the year prior to anticipated liner construction. Rather than deleting the analysis for physical characteristics, MPCA staff approves a reduction in the frequency of testing from quarterly to annually.
Minn. R. 7035.2910, subp. 4 A Total Composition (1) Table 1: Quarterly Testing Parameters, and (2) Table 2: Annual Testing Parameters	MPCA staff requires that the annual composite samples be analyzed for all parameters listed in Tables 1 and 2 of Minn. R. 7035.2910, subp. 4A
Minn. R. 7035.2910, subp. 4 A Total Composition (3) Table 3: Special Annual Testing Parameters	MPCA staff approves the variance for discontinuing dioxin and furan testing for those facilities which have historically shown a 2, 3, 7, 8-TCDD Equivalents value of less than one part per billion. Discontinuation of dioxin and furan testing will also be allowed if a facility undergoes process or operational changes which can be demonstrated to result in 2,3,7,8-TCDD Equivalents value of less than one part per billion. For facilities which cannot demonstrate this, MPCA approves reducing the frequency from annually to biannually.
Minn. R. 7035.2910, subp. 5. Number of analyses. The owner or operator must collect and analyze fly ash and bottom ash samples separately according to item A. In cases where bottom ash and fly ash are mixed, collect and analyze samples according to item B, and fly ash samples according to item A. If ash treatment occurs prior to disposal, collect samples after treatment.	Minn. R. 7035.2910. subp. 5 A(2) or B(2) set forth the minimum requirements for the number and type of samples that must be analyzed annually. The MPCA does not approve the variance request for discontinuing the collection of separate fly ash samples at facilities that combine their ash for disposal.
Minn. R. 7035.2885, subp. 10 A (1) The owner or operator of a facility which disposes of bottom ash or combined ash must place intermittent cover frequently enough so that the bottom ash or combined ash is not left uncovered for more than 48 hours. The percent moisture of exposed ash must not be less than ten percent at any time....	MPCA staff approves the variance to discontinue moisture testing of the in-place ash at the land disposal facility.

With this letter, the MSW combustor ash testing variance is hereby approved for your facility as outlined above. If you have any questions, please contact Kathy Hanson of my staff at 612/296-8443.

Sincerely,

James L. Warner, P.E.  
 Division Manager  
 Ground Water and Solid Waste Division

JLW:jk

cc: Ann Jackson, MPCA Air Quality Division

A summary of the revisions that apply to the Wilmarth and Red Wing landfills is as follows:

1. The frequency of ash sample collection must still occur quarterly. However, the quarterly samples no longer require individual analysis. Rather, the quarterly samples are to be composited into an annual sample for analysis. This compositing would occur at the lab. The ash sample collection at the plant and landfill would still occur quarterly without change.
2. The requirement for TCLP testing in accordance with MPCA Hazardous Waste Division requirements has been deleted. However, the ash must continue to be evaluated for total composition, and physical characteristics (moisture content and LOI). NSP is still able to use leachate characteristics in place of the Method 1312 leach test. If a change occurs in the facility's air pollution control equipment, the ash must be recharacterized in accordance with MPCA Hazardous Waste Division requirements.
3. The annual ash composite total composition analysis must include the constituents listed in Tables 1 and 2 of Part 7035.2910 subp. 4(A).
4. Dioxin and furan testing may be discontinued for facilities "which have historically shown a 2,3,7,8-TCDO Equivalents value of less than one part per billion. Ash from both the Wilmarth and Red Wing facilities have been consistently well under this limit. Therefore, dioxin and furan testing may be discontinued. The enclosed table provides the 2,3,7,8-TCDD Equivalents history for both facilities.
5. A request was made to discontinue individual collection and analysis of both fly ash and combined ash for facilities that combine the ash prior to disposal. This request was denied by the MPCA. Consequently, there is no change in the individual collection and analysis of both fly ash and combined ash.
6. The requirement for moisture testing of in-place ash has been discontinued. Moisture testing of the landfill surface is no longer required. This applies to both the monthly and quarterly testing.

## Appendix H. Ash Management Plan

\*Also included in the Tempo central file as a .pdf document

### 1.0 PURPOSE

A discussion of how the facility manages the ash that is generated from the waste combustion process is required to be part of the Operating Manual under Minnesota Rule 7011.1275, subpart 3 (J).

### 2.0 APPLICABILITY

This section covers the generation, handling, storage and testing of the ash generated at the facility. This section does not cover any obligations that may exist thought the solid waste permit that is issued to the landfill. The landfill has it's own solid waste permit and associated requirements and considered a separate facility.

### 3.0 Ash Generation

Ash is a byproduct of the combustion of refuse derived fuel (RDF). Ash is the inorganic material contained in the RDF and any organic material that did not volatilize during the combustion process. The ash generated at this facility can be categorized into three general categories:

- Fly ash;
- Bottom ash; and,
- Combined ash.

Fly ash and bottom ash are combined before leaving the facility. The mixture of fly ash and bottom ash is considered combined ash. In addition, pollution control additives such as lime are collected with the ash. The three categories of ash are described in more detail below.

#### 3.1 Fly Ash

Fly ash is the term given to ash that becomes airborne and is suspended in the flue gas. Fly ash travels along the same path as the flue gas through the superheater, generator banks, economizer, duct scrubber and the baghouse. The majority of the fly ash is collected by the baghouse. The heavier fly ash "drops out" in route to the baghouse. The fly ash collection points are summarized below:

- Superheater and #1 Generator Bank Hopper;
- #2 Generator Bank and Economizer Hopper; and,
- Baghouse Hoppers.

##### 3.1.1 Superheater and #1 Generator Bank

Heavier fly ash that falls out of the flue gas in the superheater and the #1 generator bank, passes through a signal hopper located below the superheater and the #1 generator bank and into an enclosed drag-chain conveyor associated with Unit 1 or Unit 2 (C5 or C1 respectively). The fly ash freely passes through the hopper as it is generated and thus it is considered a continuous process when the unit is combusting RDF. C8 or C4 conveyors route the ash to a second set of enclosed conveyors associated with Unit 1 or Unit 2 (C8 or C4 respectively). Finally, C8 or C4 conveyors route the ash to a common conveyor (C9). C9 is filled with water. The water cools the ash and prevents the fly ash from becoming airborne as it is transported though the facility. C9 ultimately routes the ash to the ash storage building where it is temporally stored until it is loaded onto trucks and transported to an ash monofill.

##### 3.1.2 #2 Generator Banks and Economizer

Heavier fly ash that falls out of the flue gas in the #2 generator bank and the economizer passes through a signal hopper located below the superheater and the #1 generator bank and into an enclosed drag-chain conveyor associated with Unit 1 or Unit 2 (C5 or C1 respectively). The fly ash freely passes through the hopper as it is generated and thus it is considered a continuous process when the unit is combusting RDF. C8 or C4 conveyors route the ash to a second set of

enclosed conveyors associated with Unit 1 or Unit 2 (C8 or C4 respectively). Finally, C8 or C4 conveyors route the ash to a common conveyor (C9). C9 is filled with water. The water cools the ash and prevents the fly ash from becoming airborne as it is transported through the facility. C9 ultimately routes the ash to the ash storage building where it is temporarily stored until it is loaded onto trucks and transported to an ash monofill.

### 3.1.3 Baghouse Hoppers

The fly ash that remains airborne and does not drop out of the flue gas as it travels through the superheater, the generator banks and the economizer is routed through the baghouse. The baghouse is the primary mechanism to remove fly ash from the flue gas before it is discharged to the atmosphere. There is a separate baghouse for each unit. Each baghouse has four compartments and four hoppers. The flue gas containing the fly ash is routed into the four compartments which contain rows of bags. The bags are made of a fabric that contains small holes. The flue gas is forced to push its way inside the bags in order to exit the baghouse compartment. As the flue gas moves through the fabric on the bags, the fly ash cannot pass through the small air holes and collects on the outside of the bags. During a cleaning cycle, a pulse of air is injected inside the bags. This pulse of air “snaps” the bags outward. The snapping motion releases the fly ash from the bags. The fly ash falls to the hopper below the compartment and passes through a rotary air lock before it is deposited into an enclosed conveyor associated with Unit 1 or Unit 2 (C11 or C10 respectively). The fly ash freely passes through the hoppers as it is generated and thus it is considered a continuous process when the unit is combusting RDF.

C10 and C11 conveyors route the ash to a common enclosed conveyor (C12). C12 routes the fly ash to a second common enclosed conveyor, C13. Finally, the ash is routed to a hopper above the ash conditioner, where it is temporarily stored until it is conditioned and deposited on the main common conveyor (C9) on the incline. C9 routes the ash to the ash building where it is temporarily stored until it is loaded onto trucks and routed to an ash monofill.

## 3.2 Bottom Ash

Bottom ash is the term used to identify the “heavy ash” that stays on the grates during the combustion process and does not become airborne. Depending on the size of the ash particles, it either remains on the traveling grates (bottom ash) or it falls through the grates (siftings).

### 3.2.1 Bottom Ash – Ash Remaining on Grates

The ash that remains on the grates is routed to an enclosed common conveyor (C9) used by both Unit 1 and Unit 2. This conveyor is totally enclosed and is filled with water until it reaches an incline near the exit of the main building. The water cools the ash and prevents the bottom ash from becoming airborne as it is transported through the facility. The ash is dewatered as it travels on the inclined portion of C9. C9 ultimately routes the ash to the ash storage building where it is temporarily stored until it is loaded onto trucks and routed to an ash monofill.

### 3.2.2 Bottom Ash - Siftings

Small bottom ash particles fall through the spaces between the traveling grates and are routed to an enclosed conveyor associated with Unit 1 or Unit 2 (C7 or C3 respectively). C7 or C3 route the siftings to a second set of conveyors associated with Unit 1 or Unit 2 (C8 or C4 respectively). Finally C8 or C4 conveyors route the ash to a common conveyor (C9). This conveyor is totally enclosed and is filled with water until it nears the ash storage building. The water cools the ash and prevents the bottom ash from becoming airborne as it is transported through the facility. The ash is dewatered as it travels on the inclined portion of C9. C9 ultimately routes the ash to the ash storage building where it is temporarily stored until it is loaded onto trucks and routed to an ash monofill.

## 3.3 Combined Ash

The bottom ash and the heavier fly ash that dropped out in the superheater, generator banks and the economizer are eventually deposited into an enclosed common conveyor (C9). Fly ash that passes through the baghouse is routed to the fly ash hopper and is batch fed to an ash conditioner where it is mixed with water to control fugitive emissions. The

conditioned fly ash is deposited on C9 at a point near the ash storage building (after the conveyor has begun its incline and is no longer filled with water). At this point, the bottom ash and the fly ash are no longer separate waste streams and are considered to be “combined ash.” The combined ash travels along the common conveyor C9 and passes under a water sprinkler. The water sprinkler keeps the combined ash moist and loose, preventing it from sticking to the conveyor. It also ensures that the fly ash portion of the combined ash is adequately moistened to minimize fugitive emissions.

The combined ash travels to the top of the incline and is deposited on the floor of the ash storage building. The combined ash forms a pile under the inclined conveyor. Periodically, a leveling conveyor (C14) is used to flatten the pile and distribute it evenly in the ash storage building.

### 3.4 Pollution Control Additives

After the flue gas passes through the economizer, a duct scrubber is used to inject hydrated lime into flue gas stream. The lime neutralizes the acid gases contained in the flue gas such as sulfur dioxide and hydrogen chloride. The acid gases do not consume all of the lime injected into the flue gas. The excess lime is trapped on the baghouse bags along with the fly ash. When the bags are cleaned, the fly ash and lime that has been collected on the bags, falls into the hoppers below the compartment and passes through a rotary air lock before it is deposited into an enclosed conveyor associated with Unit 1 or Unit 2 (C11 or C10 respectively).

C10 and C11 conveyors route the ash and lime to a common enclosed conveyor (C12). C12 routes the fly ash to a second common enclosed conveyor, C13. Finally, the ash and lime is routed to a hopper above the ash conditioner, where it is temporarily stored until it is conditioned and deposited on the main common conveyor (C9) on the incline. C9 routes the ash to the ash building where it is temporarily stored until it is loaded onto trucks and routed to an ash monofill.

### 3.5 Process Flow Diagrams

\*All figures are included in the .pdf document in Tempo

Figure 1

Figure 1 provides a process flow diagram for the heavier fly ash that is captured in the superheater, the generator banks and the economizer.

Figure 2

Figure 2 provides a process flow diagram for the fly ash that captured by the baghouse.

Figure 3

Figure 3 provides a process flow diagram for the bottom ash including the ash that travels with the grates and the ash that falls through the grates (siftings).

Figure 4

Figure 4 provides a process flow diagram for combined ash indicating where the fly ash is combined with the bottom ash and conveyed to the ash storage building.

### 3.6 Ash Treatment

The ash is not treated directly, however, the lime that is added to the flue gas to control acid gases, treats the ash indirectly. Lime that does not react with the flue gas is collected in the baghouse and mixed with the fly ash. The fly ash mixture containing the lime is ultimately combined with the bottom ash. The lime helps to neutralize the ash and acts as a binding agent to prevent toxins from leaching from the ash.

### 3.7 Ash Conditioning

The common conveyor, C9 is filled with water. When bottom ash is added to C9 it is submerged in water. The water acts as a seal to prevent air emissions from escaping the boiler. The water cools the ash and adds moisture to the ash, which eliminates fugitive emissions as the ash is routed to the ash storage building. Even after the bottom ash is dewatered, the ash retains a significant amount of moisture and fugitive emissions are minimized. The heavier fly ash from the superheater, #1 and #2 generator banks and the economizer is also deposited into C9 and is quenched with water, minimizing fugitive emissions as it travels to the ash storage building.

Fly ash consists of fine particles of ash that became airborne as part of the combustion process. The fly ash is routed through a baghouse to remove it from the flue gas. Once collected, it is important to prevent the fly ash from becoming airborne until it is transported to the monofill. The fly ash is processed through an ash conditioner to minimize fugitive (airborne) emissions. Fly ash is routed to hopper where it is temporarily stored.

When the hopper reaches a predetermined level, the fly ash is batch fed to the ash conditioner. The ash conditioner mixes water with the fly ash.

### **3.8 Combination Point**

At the location when C9 leaves the plant, it begins an incline to the ash storage building. As the ash moves up the inclined conveyor, it is dewatered as it travels to the ash storage building. The fly ash is deposited on top of the bottom ash at a point near the ash storage building. At this point, the bottom ash and fly ash are considered combined ash. Additional water is sprinkled onto the combined ash to prevent the ash from sticking to the conveyor and to minimize fugitive emissions. The ash continues on the inclined conveyor until it is deposited into the ash storage building.

### **3.9 Ash Storage and Loadout**

Ash is temporarily stored in the ash storage building. The sliding conveyor (C14) is used to keep the ash evenly distributed in the storage area and keep the ash piles from interfering with the C9 conveyor. Ash is loaded out daily from 7AM to 5PM. Ash is loaded onto trucks and is transported to the Xcel Energy Ash Landfill located in Red Wing.

### **3.10 Ash Sampling and Testing**

Our current air emissions permit requires us to follow the ash testing requirements in Minnesota Rule 7035.2910, subpart 3. In 1995, the MPCA issued a variance to the rules that reduced the frequency of sample analysis, the tests that are performed, and the number of testing parameters. The remaining discussion on ash sampling and analysis incorporates the provisions in the 1995 variance.

#### **3.10.1 Sample Collection**

We are required to collect ash samples at least quarterly. Sample collection is required to start within seven days of January 15, April 15, July 15, and October 15, unless otherwise approved by the MPCA. We are required to collect and analyze fly ash and bottom ash samples separately unless the ash is combined before it leaves the facility. In our case where bottom and fly ash are mixed, we are required to analyze fly ash and combined ash samples.

Fly ash samples are collected at the discharge of the fly ash hopper or ash conditioner. Hourly grab samples of fly ash are collected for a minimum of eight hours per day, seven days per week. At the end of the sampling event, the hourly samples are combined to make a quarterly composite sample. The quarterly composite fly ash sample is sent to the Xcel Energy – Chestnut Laboratory for storage.

Combined ash samples are collected at the Red Wing Ash Disposal Facility. Each day during ash sampling, the landfill operator collects grab samples of combined ash from the ash. A minimum of two samples are collected from five trucks per day representing eight hours of ash production. Grab samples are collected over a seven-day period and are combined to make a quarterly composite sample. The quarterly composite combined ash sample is sent to the Xcel Energy – Chestnut Laboratory for storage.

Once all the quarterly composite samples have been collected and submitted to the Xcel Energy – Chestnut Laboratory for storage, they are combined into an annual composite sample of fly ash and combined ash and analyzed for the parameters below.

### 3.10.2 Test Methods and Analytes

We are required to analyze ash samples for total composition and physical characteristics for the following testing parameters, using test methods required by Minnesota Rule 7035.2910.

#### Total Composition Parameters

- Aluminum
- Arsenic
- Barium
- Boron
- Cadmium
- Calcium
- Chloride
- Chromium
- Copper
- Lead
- Manganese
- Magnesium
- Mercury
- Nickel
- Selenium
- Silver
- Sodium
- Strontium
- Sulfate
- Tin
- Zinc

#### Special Parameters

- Dioxins
- Furans

#### Physical Characteristics

- Moisture Content
- Percent Combustible

### 3.10.3 Ash Sampling Plan

We are required to develop an ash sampling plan that meets the requirements of Minnesota Rule 7035.2910. The Ash Sampling Plan is required to be submitted to the MPCA for approval. Detailed information on ash sampling and testing program is required including:

- A. Specification of the training and experience qualifications of persons who collect ash samples;
- B. Description of equipment used to collect, process, and store ash samples;
- C. Identification of sampling equipment cleaning procedures and other actions taken to prevent sample contamination;
- D. Identification of the location or locations where ash samples are collected;
- E. Description of procedures used to collect grab samples;
- F. Description of procedures used to process grab samples to form composite samples;
- G. Description of chain-of-custody and sample storage procedures; and,
- H. Identification of ash sampling quality assurance and quality control measures.

### 3.10.4 Annual Ash Testing Report

We are required to submit an Annual Ash Testing Report to the MPCA by March 15 of each year. The report is required to contain the following information:

- Results of annual analyses of ash;
- Discussion of the data, including identification of trends observed by comparing the most recent year's results with those of previous years;
- Data quality assurance assessment;

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- Information summarizing operation of the waste combustor during the ash sampling periods, and data regarding ash sample processing;
- Identification of any changes in test methods or parameters; and,
- Certification statement including certifying that:
  - (1) Samples were collected and analyzed according to the requirements of Minnesota Rules 7035.2910;
  - (2) Samples were collected and analyzed according to the approved Ash Sampling Plan; and,
  - (3) No actions were taken during the sample collection period to intentionally affect the results of ash sample analysis so that the results would not be representative of ash typically generated by the waste combustor.

**4.0 REVISION HISTORY**

Date	Revision Number	Change
	0	Original
6/1/2005	1	