

Permit #: 28.3306-07
Effective Date: June 5, 2008
Expiration Date: May 22, 2012

The seal of the State of South Dakota is a circular emblem with a serrated outer edge. It features a central landscape scene with a river, a windmill, and a plow. The text "STATE OF SOUTH DAKOTA" is arched across the top, and "GREAT SEAL" is arched across the bottom. The year "1889" is at the bottom center. A banner across the middle reads "UNDER GOD THE PEOPLE RULE".

**SOUTH DAKOTA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
TITLE V AIR QUALITY PERMIT**

A handwritten signature in black ink, appearing to read "S. Pirner", is written over a vertical red line.

Steven M. Pirner, Secretary
Department of Environment and Natural Resources

**Under the South Dakota Air Pollution
Control Regulations**

Pursuant to Chapter 34A-1-21 of the South Dakota Codified Laws and the Air Pollution Control Regulations of the State of South Dakota and in reliance on statements made by the owner designated below, a permit to operate is hereby issued by the Secretary of the Department of Environment and Natural Resources. This permit authorizes such owner to operate the unit(s) listed in Table #1 under the listed conditions.

A. Owner

1. Company Name and Mailing Address

Alcoa Extrusions Inc.
2500 Alumax Road
Yankton, SD 57078

2. Actual Source Location if Different from Above

Same as above

3. Permit Contact

Dan Benson
(605) 668-2373

4. Facility Contact

Dan Benson
(605) 668-2373

5. Responsible Official

John E. Clifton, General Manager
(605) 665-6063

B. Permit Revisions or Modifications

June 5, 2008 – Minor permit amendment to add the facility-specific emission limit alternative method of compliance for the Miscellaneous Metal Parts and Products MACT standard.

C. Type of Operation

Alcoa Extrusions Inc. operates an aluminum extrusion and painting facility.

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1.0 STANDARD CONDITIONS

1.1 Operation of source. In accordance with Administrative Rules of South Dakota (ARSD) 74:36:05:16.01(8), the owner or operator shall operate the units, controls, and processes as described in Table #1 in accordance with the statements, representations, and supporting data contained in the complete permit application submitted and dated January 30, 2007 and March 3, 2008, unless modified by the conditions of this permit. The control equipment shall be operated in a manner that achieves compliance with the conditions of this permit at all times. The application consists of the application forms, supporting data, and supplementary correspondence. If the owner or operator becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in an application, such information shall be promptly submitted.

**Table #1
Description of Permitted Units, Operations, and Processes**

Unit	Description	Maximum Operating Rate	Control Device
#1	1979 Warwick Furnace Company aluminum remelt furnace (North Melter), fired with natural gas.	The maximum heat input capacity is 22.0 million Btus per hour. The furnace processes 7.5 tons of aluminum per hour.	Not applicable
#2	1979 Warwick Furnace Company aluminum remelt furnace (South Melter), fired with natural gas.	The maximum heat input capacity is 22.0 million Btus per hour. The furnace processes 7.5 tons of aluminum per hour.	Not applicable
#3	1988 Certified Industrial Technology aluminum remelt furnace (West Melter), fired with natural gas.	The maximum heat input capacity is 22.0 million Btus per hour. The furnace processes 7.5 tons of aluminum per hour.	Not applicable
#4	1979 Certified Industrial Technology alloyed aluminum log furnace (Homogenizing Oven #1), fired with natural gas.	The maximum heat input capacity is 9.0 million Btus per hour.	Not applicable
#5	1988 Certified Industrial Technology alloyed aluminum log furnace (Homogenizing Oven #2), fired with natural gas.	The maximum heat input capacity is 9.0 million Btus per hour.	Not applicable
#6	1979 Elhaus Industries alloyed aluminum log heater (1800 Log Heater), fired with natural gas.	The maximum heat input capacity is 5.0 million Btus per hour.	Not applicable
#7	1991 Elhaus Industries alloyed aluminum log heater (2750 log heater), model L250-	The maximum heat input capacity of the existing unit is 3.6 million Btus per hour. The maximum heat input	Not applicable

Unit	Description	Maximum Operating Rate	Control Device
	60/105/3FWS250FK, fired with natural gas. This unit may be replaced during the term of this permit by a 2007 Belco aluminum heating furnace (2750 Log Heater), model number 89-20-4-T-PR25-2-P-L, fired with natural gas.	capacity of the new unit is 6.0 million Btus per hour.	
#8	1989 Elhaus Industries alloyed aluminum billet heater (3000 Log Heater), model number 75/120/3FKWS250FK, fired with natural gas.	The maximum heat input capacity is 3.7 million Btus per hour.	Not applicable
#9	2006 Belco Industries alloyed aluminum log heater (3500 Log Heater), fired with natural gas.	The maximum heat input capacity is 7.5 million Btus per hour.	Not applicable
#10	Coating line ¹ – 1979 Belco Industries paint application booths (2) and paint flash off area on the original paint line process (Paint Line #1).	Not applicable	Not applicable
#11	1979 Belco Industries aluminum extrusions paint curing bake oven on the original paint line process (North Bake Oven – Paint Line #1), fired with natural gas.	The maximum heat input capacity is 5.0 million Btus per hour.	Not applicable
#12	Coating line ¹ – 1992 Belco Industries paint application booths (2), top coat application booths (2), and paint flash off area on the vertical paint line process (Paint Line #2).	Not applicable	1995 TELLKAMP Systems, Inc., regenerative thermal oxidizer fired with natural gas. The regenerative thermal oxidizer has a maximum heat input capacity of 4.0 million Btus per hour.
	1992 Belco Industries aluminum extrusions paint curing bake oven on the 1992 vertical paint line process (South Bake Oven – Paint Line #2), fired with natural gas.	The maximum heat input capacity of the bake oven is 5.0 million Btus per hour.	
#13	1992 Belco Industries aluminum extrusions pretreatment washer stage 1 on the 1992 vertical paint line process (1 st Stage Washer Burner – South Paint Line #2),	The maximum heat input capacity is 5.0 million Btus per hour.	Not applicable

Unit	Description	Maximum Operating Rate	Control Device
	fired with natural gas.		

¹ – Coating operation includes the equipment used to apply cleaning materials to a substrate to prepare it for coating application (surface preparation) or to remove dried coating; to apply coating to a substrate (coating application) and to dry or cure the coating after application; or to clean coating operation equipment (equipment cleaning); all storage containers and mixing vessels in which coatings, thinners and/or other additives, and cleaning materials are stored or mixed; all manual and automated equipment and containers used for conveying coatings, thinners and/or other additives, and cleaning materials; and all storage containers and all manual and automated equipment and containers used for conveying waste materials generated by a coating operation.

1.2 Duty to comply. In accordance with ARSD 74:36:05:16.01(12), the owner or operator shall comply with the conditions of this permit. An owner or operator who knowingly makes a false statement in any record or report or who falsifies, tampers with, or renders inaccurate, any monitoring device or method is in violation of this permit. A violation of any condition in this permit is grounds for enforcement, reopening this permit, permit termination, or denial of a permit renewal application. The owner or operator, in an enforcement action, cannot use the defense that it would have been necessary to cease or reduce the permitted activity to maintain compliance. The owner or operator shall provide any information requested by the Secretary to determine compliance or whether cause exists for reopening or terminating this permit.

1.3 Property rights or exclusive privileges. In accordance with ARSD 74:36:05:16.01(12), the State’s issuance of this permit, adoption of design criteria, and approval of plans and specifications does not convey any property rights of any sort, any exclusive privileges, any authorization to damage, injure or use any private property, any authority to invade personal rights, any authority to violate federal, state or local laws or regulations, or any taking, condemnation or use of eminent domain against any property owned by third parties. The State does not warrant that the owner’s or operator’s compliance with this permit, design criteria, approved plans and specifications, and operation under this permit, will not cause damage, injury or use of private property, an invasion of personal rights, or violation of federal, state or local laws or regulations. The owner or operator is solely and severally liable for all damage, injury or use of private property, invasion of personal rights, infringement of federal, state or local laws and regulations, or taking or condemnation of property owned by third parties, which may result from actions taken under the permit.

1.4 Penalty for violating a permit condition. In accordance with South Dakota Codified Laws (SDCL) 34A-1, a violation of a permit condition may subject the owner or operator to civil or criminal prosecution, a state penalty of not more than \$10,000 per day per violation, injunctive action, administrative permit action, and other remedies as provided by law.

1.5 Inspection and entry. In accordance with SDCL 34A-1-41, the owner or operator shall allow the Secretary to:

1. Enter the premises where a regulated activity is located or where pertinent records are stored;
2. Have access to and copy any records that are required under this permit;
3. Inspect operations regulated under this permit; and/or
4. Sample or monitor any substances or parameters for the purpose of assuring compliance.

1.6 Severability. In accordance with ARSD 74:36:05:16.01(11), any portion of this permit that is void or challenged shall not affect the validity of the remaining permit requirements.

1.7 Permit termination, modification, or revocation. In accordance with ARSD 74:36:05:46, the Secretary may recommend that the Board of Minerals and Environment terminate, modify, or revoke this permit for violations of SDCL 34A-1 or the federal Clean Air Act or for nonpayment of any outstanding fee or enforcement penalty.

1.8 Credible evidence. In accordance with ARSD 74:36:13:07, credible evidence may be used for the purpose of establishing whether the owner or operator has violated or is in violation of this permit. Credible evidence is as follows:

1. Information from the use of the following methods is presumptively credible evidence of whether a violation has occurred at the source:
 - a. A monitoring method approved for the source pursuant to 40 CFR § 70.6(a)(3) and incorporated in this permit; or
 - b. Compliance methods specified in an applicable plan;
2. The following testing, monitoring, or information gathering methods are presumptively credible testing, monitoring, or information-gathering methods:
 - a. Any monitoring or testing methods approved in this permit, including those in 40 CFR Parts 51, 60, 61, and 75; or
 - b. Other testing, monitoring, or information-gathering methods that produce information comparable to that produced by any method in section (1) or (2)(a).

2.0 PERMIT FEES

2.1 Annual air fee required. In accordance with ARSD 74:36:05:06.01, the owner or operator shall submit an annual administrative fee and an annual fee. The fee is based on actual emissions in accordance with ARSD 74:37.

2.2 Annual operational report. In accordance with ARSD 74:37:01:06, the Secretary will supply the owner or operator with an annual operational report in January of each year. The owner or operator shall complete and submit the operational report to the Secretary by March 1 of each year. The responsible official shall sign the operational report in the presence of a notary public.

2.3 Annual air fee. In accordance with ARSD 74:37:01:08, the Secretary will notify the owner or operator of the required annual air emission fee and administrative fee by June 1 of each year. The fees shall accrue on July 1 and are payable to the Department of Revenue by July 31 of each year.

3.0 PERMIT AMENDMENT AND MODIFICATION CONDITIONS

3.1 Permit flexibility. In accordance with ARSD 74:36:05:30, the owner or operator shall have the flexibility to make changes to the source during the term of this permit. The owner or operator shall provide the Secretary written notice at least seven days in advance of the proposed change (NOTE: The Secretary will forward a copy of the written notice to EPA). The written notice shall include a brief description of the change, the date on which the change is to occur, any change in emissions, and the proposed changes to this permit.

The Secretary will notify the owner or operator whether the change is an administrative permit amendment, a minor permit amendment, or a permit modification. A proposed change that is considered an administrative permit amendment or a minor permit amendment can be completed immediately after the Secretary receives the written notification. The owner or operator must comply with both the applicable requirements governing the change and the proposed permit terms and conditions until the Secretary takes final action on the proposed change.

A proposed change that is considered a modification can not be constructed until the Secretary takes final action on the proposed change. Permit modifications are subject to the same procedural requirements, including public comment, as the original permit issuance except that the required review shall cover only the proposed changes.

3.2 Administrative permit amendment. In accordance with ARSD 74:36:05:33, the Secretary has 60 days from receipt of a written notice to verify that the proposed change is an administrative permit amendment. The Secretary considers a proposed change an administrative permit amendment if the proposed change accomplishes one of the following:

1. Corrects typographical errors;
2. Changes the name, address, or phone number of any person identified in this permit or provides a similar minor administrative change at the source;
3. Requires more frequent monitoring or reporting by the source;
4. The ownership or operational control of a source change and the Secretary determines that no other change in this permit is necessary. However, the new owner must submit a certification of applicant form and a written statement specifying the date for transfer of operating permit responsibility, coverage, and liability; or
5. Any other changes that the Secretary and the administrator of EPA determines to be similar to those requirements in this condition.

3.3 Minor permit amendment. In accordance with ARSD 74:36:05:38, the Secretary has 90 days from receipt of a written notice or 15 days after the end of EPA's 45-day review period, whichever is later, to take final action on a minor permit amendment. Final action consists of issuing or denying a minor permit amendment or determining that the proposed change is a permit modification. The Secretary considers a proposed change to be a minor permit amendment if the proposed change:

1. Does not violate any applicable requirements;
2. Does not involve significant changes to existing monitoring, reporting, or record keeping requirements;
3. Does not require or change a case-by-case determination of an emission limit or other standard, a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis; or
4. Does not seek to establish or change a permit term or condition for which the source has assumed to avoid an applicable requirement, a federally enforceable emission cap, or an alternative emission limit. An alternative emission limit is approved pursuant to regulations promulgated under section 112(i)(5) of the federal Clean Air Act.

3.4 Permit modification. In accordance with ARSD 74:36:05:39, an owner or operator may apply for a permit modification. A permit modification is any proposed change that meets the definition of a modification in ARSD 74:36:01:10 or is not an administrative amendment or a minor permit amendment. Modification is defined as a physical change or change in operation that increases the amount of air pollutant emitted by the source or results in the emission of an air pollutant not previously emitted. Permit modifications are subject to the same procedural requirements, including public comment, as the original permit issuance except that the required review shall cover only the proposed changes.

3.5 Permit revision. In accordance with ARSD 74:36:05:40, the Secretary may reopen and revise this permit to meet requirements of SDCL 34A-1 or the federal Clean Air Act.

3.6 Testing new fuels or raw materials. In accordance with ARSD 74:36:11:04, an owner or operator may request permission to test a new fuel or raw material to determine if it is compatible with existing equipment before requesting a permit amendment or modification. A complete test proposal shall consist of the following:

1. A written proposal that describes the new fuel or raw material, operating parameters, and parameters that will be monitored and any testing associated with air pollutant emissions during the test;
2. An estimate of the type and amount of regulated air pollutant emissions that will result from the proposed change; and
3. The proposed schedule for conducting the test. In most cases the owner or operator will be allowed to test for a maximum of one week. A request for a test period longer than one week will need additional justification. A test period shall not exceed 180 days.

The Secretary shall approve, conditionally approve, or deny in writing the test proposal within 45 days after receiving a complete proposal. Approval conditions may include changing the test schedule or pollutant sampling and analysis methods. Pollutant sampling and analysis methods may include, but are not limited to performance testing, visible emission evaluation, fuel analysis, dispersion modeling, and monitoring of raw material or fuel rates.

If the Secretary determines that the proposed change will result in an increase in the emission of a regulated air pollutant or result in the emission of an additional regulated air pollutant, the Secretary shall give public notice of the proposed test for 30 days. The Secretary shall consider all comments received during the 30-day public comment period before making a final decision on the test.

The Secretary will not approve a test if the test would cause or contribute to a violation of a national ambient air quality standard.

4.0 PERMIT RENEWAL REQUIREMENTS

4.1 Permit effective. In accordance with ARSD 74:36:05:07, this permit shall expire five years from date of issuance unless reopened or terminated for cause.

4.2 Permit renewal. In accordance with ARSD 74:36:05:08, the owner or operator shall submit an application for a permit renewal at least 180 days before the date of permit expiration if the owner or operator wishes to continue an activity regulated by this permit. The current permit shall not expire and shall remain in effect until the Secretary takes final action on the timely permit renewal application.

4.3 Permit expiration. In accordance with ARSD 74:36:05:28, permit expiration terminates the owner's or operator's right to operate any unit covered by this permit.

5.0 RECORD KEEPING AND REPORTING REQUIREMENTS

5.1 Record keeping and reporting. In accordance with ARSD 74:36:05:16.01(9) and ARSD 74:36:08:37, as referenced to 40 CFR § 63.3931, the owner or operator shall maintain all monitoring data, records, reports, and pertinent information specified by this permit for five years from the date of sample, measurement, report, or application. The records shall be maintained on site for the first two years and may be maintained off site for the last three years. All records must be made available to the Secretary for inspection. All notifications and reports shall be submitted to the following address:

South Dakota Department of Environment and Natural Resources

PMB 2020, Air Quality Program
523 E. Capitol, Joe Foss Building
Pierre, SD 57501-3182

5.2 Signatory requirements. In accordance with ARSD 74:36:05:12 and ARSD 74:36:05:16.01, all applications submitted to the Secretary shall be signed and certified by a responsible official. A responsible official for a corporation is a responsible corporate officer and for a partnership or sole proprietorship is a general partner or the proprietor, respectively. All reports or other information submitted to the Secretary shall be signed and certified by a responsible official or a duly authorized representative. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above and submitted to the Secretary; and
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

The responsible official shall notify the Secretary if an authorization is no longer accurate. The new duly authorized representative must be designated prior to or together with any reports or information to be signed by a duly authorized representative.

5.3 Certification statement. In accordance with ARSD 74:36:05:16.01(14)(a), all documents required by this permit, including application forms, reports, and compliance certification, must be certified by a responsible official or a duly authorized representative. The certification shall include the following statement:

“I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this document and all attachments are true, accurate, and complete.”

5.4 Monitoring log. In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall maintain a monitoring log. The monitoring log shall contain the following information.

1. Maintenance schedule for each piece of control equipment listed in Table #1. At a minimum, the maintenance schedule shall meet the manufacturer’s recommended schedule for maintenance. The following information shall be recorded for maintenance:
 - a. Identify the unit;
 - b. The date and time maintenance was performed;
 - c. Description of the type of maintenance; and
 - d. Reason for performing maintenance;
2. The following information shall be recorded for each visible emission reading required in

permit condition 18.1:

- a. Identify the unit;
 - b. The date and time the visible emission reading was performed;
 - c. If visible emissions were observed;
 - d. Description of maintenance performed to eliminate visible emissions;
 - e. Visible emission evaluation if visible emissions are not eliminated; and
 - f. Signature of person performing visible emission reading and/or visible emission evaluation; and
3. The following information shall be recorded within two days of each emergency exceedance:
- a. The date of the emergency exceedance and the date the emergency exceedance was reported to the Secretary;
 - b. The cause(s) of the emergency;
 - c. The reasonable steps taken to minimize the emissions during the emergency; and
 - d. A statement that the permitted equipment was at the time being properly operated.

5.5 Records for coating operations. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR §§ 63.3930 and 63.3931, the owner or operator must collect and keep records of the following data and information for the coating operations in Table #1. The records must be in a form suitable and readily available for expeditious review. Where appropriate, the records may be maintained as electronic spreadsheets or as a database. Failure to collect and keep these records is considered a deviation from the applicable standard in this permit:

1. A copy of each notification and report submitted to comply with the requirements for coating operations and the documentation supporting each notification and report. If the predominant activity alternative in permit condition 6.5 paragraph (6) is used, the owner or operator must keep records of the data and calculations used to determine the predominant activity. If the facility-specific emission limit alternative in permit condition 6.5 paragraph (7) is used, the owner or operator must keep records of the data used to calculate the facility-specific emission limit for the initial compliance demonstration. The owner or operator must also keep records of any data used in each annual predominant activity determination and in the calculation of the facility-specific emission limit for each 12-month compliance period included in the semi-annual compliance reports;
2. A current copy of information provided by materials suppliers or manufacturers, such as manufacturer's formulation data, or test data used to determine the mass fraction of organic hazardous air pollutant and density for each coating, thinner and/or other additive, and cleaning material, and the volume fraction of coating solids for each coating. If the owner or operator conducts testing to determine mass fraction of organic hazardous air pollutant, density, or volume fraction of coating solids, the owner or operator must keep a copy of the complete test report. If information is provided by the manufacturer or supplier of the material that was based on testing, the owner or operator must keep the summary sheet of results provided by the manufacturer or supplier. The owner or operator is not required to obtain the test report or other supporting documentation from the manufacturer or supplier.
3. The following records for each compliance period:

- a. A record of the compliance option used for each coating operation in Table #1 and the time periods (beginning and ending dates and times) for each option used;
- b. If the compliant material option is used to demonstrate compliance, a record of the calculation of the organic hazardous air pollutant content for each coating, using Equation 8-2;
- c. If the emission rate without add-on controls option is used to demonstrate compliance, a record of the calculation of the total mass of organic hazardous air pollutant emissions for the coatings, thinners and/or other additives, and cleaning materials used each month using Equations 10-1 through 10-5 and, if applicable, the calculation used to determine mass of organic hazardous air pollutant in waste materials according to the procedure in permit condition 10.7; the calculation of the total volume of coating solids used each month using Equation 10-5; and the calculation of each 12-month organic hazardous air pollutant emission rate using Equation 10-6;
- d. If the emission rate with add-on controls option is used to demonstrate compliance, records of the following calculations:
 - i. The calculation of the total mass of organic hazardous air pollutant emissions for the coatings, thinners and/or other additives, and cleaning materials used each month using Equations 10-1 through 10-4, and if applicable, the calculation used to determine mass of organic hazardous air pollutants in waste materials according to the procedures in permit condition 10.7;
 - ii. The calculation of the total volume of coating solids used each month using Equation 10-5;
 - iii. The calculation of the mass of organic hazardous air pollutant emission reduction by emission capture systems and add-on control devices using Equations 12-1 through 12-5;
 - iv. The calculation of each month's organic hazardous air pollutant emission rate using Equation 12-6; and
 - v. The calculation of each 12-month organic hazardous air pollutant emission rate using Equation 12-7.
4. A record of the name and volume of each coating, thinner and/or other additive, and cleaning material used during each compliance period. If the compliant material option is used to demonstrate compliance, the owner or operator may maintain purchase records for each material used rather than a record of the volume used;
5. A record of the mass fraction of organic hazardous air pollutant for each coating, thinner and/or other additive, and cleaning material used during each compliance period unless the material is tracked by weight;
6. A record of the volume fraction of coating solids for each coating used during each compliance period;
7. If either the emission rate without add-on controls or the emission rate with add-on controls option is used to demonstrate compliance, records of the density for each coating, thinner and/or other additive, and cleaning material used during each compliance period; and
8. Records of the date, time, and duration of each deviation.

5.6 Records for allowance of organic hazardous air pollutants contained in waste. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3930(h), if the allowance in Equation 10-1 is used for organic hazardous air pollutants contained in waste materials sent to or designated for shipment to a treatment, storage, and disposal facility according to the procedure in permit condition 10.7, the owner or operator must maintain records of the following information:

1. The name and address of each treatment, storage, and disposal facility to which waste materials were sent for which an allowance in Equation 10-1 was used, a statement of which subparts under 40 CFR Parts 262, 264, 265, and 266 apply to the facility, and the date of each shipment;
2. Identification of the coating operations producing waste materials included in each shipment and the month or months in which the allowance in Equation 10-1 was used; and
3. The methodology used in accordance with permit condition 10.7 to determine the total amount of waste materials sent to or the amount collected, stored, and designated for transport to a treatment, storage, and disposal facility each month; and the methodology to determine the mass of organic hazardous air pollutants contained in these waste materials. This must include the sources for all data used in the determination, methods used to generate the data, frequency of testing or monitoring, and supporting calculations and documentation, including the waste manifest for each shipment.

5.7 Additional recordkeeping – emission rate with add-on controls option. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3930(k), if the emission rate with add-on controls option is used to demonstrate compliance, the owner or operator must maintain the following records:

1. For each deviation, a record of whether the deviation occurred during a period of startup, shutdown, or malfunction.
2. The records required in 40 CFR § 63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.
3. The records required to show continuous compliance with the operating limit in permit condition 6.6.
4. For each capture system that is a permanent total enclosure, the data and documentation used to support a determination that the capture system meets the criteria in Method 204 of 40 CFR Part 51 Appendix M for a permanent total enclosure and has a capture efficiency of 100 percent, as specified in permit condition 14.1(1).
5. For each capture system that is not a permanent total enclosure, the data and documentation used to determine capture efficiency according to the requirements specified in permit conditions 13.1 and 14.1(2), including the records specified in subparagraphs (a) through (c) below, as applicable:
 - a. *Records for a liquid-to uncaptured gas protocol using a temporary total enclosure or building enclosure.* Records of the mass of total volatile hydrocarbon as measured by Method 204A or 204F of 40 CFR Part 51 Appendix M for each material used in the

coating operation, and the total total volatile hydrocarbon for all materials used during each capture efficiency test run, including a copy of the test report. Records of the mass of total volatile hydrocarbon emissions not captured by the capture system that exited the temporary total enclosure or building enclosure during each capture efficiency test run, as measured by Method 204D or Method 204E of 40 CFR Part 51 Appendix M, including a copy of the test report. Records documenting that the enclosure used for the capture efficiency test met the criteria in Method 204 of 40 CFR Part 51 Appendix M for either a temporary total enclosure or a building enclosure.

- b. *Records for a gas-to-gas protocol using a temporary total enclosure or a building enclosure.* Records of the mass of total volatile hydrocarbon emissions captured by the emission capture system as measured by Method 204B or 204C of 40 CFR Part 51 Appendix M at the inlet to the add-on control device, including a copy of the test report. Records of the mass of total volatile hydrocarbon emissions not captured by the capture system that exited the temporary total enclosure or building enclosure during each capture efficiency test run as measured by Method 204D or Method 204E of 40 CFR Part 51 Appendix M, including a copy of the test report. Records documenting that the enclosure used for the capture efficiency test met the criteria in Method 204 of 40 CFR Part 51 Appendix M for either a temporary total enclosure or a building enclosure.
 - c. *Records for an alternative protocol.* Records needed to document a capture efficiency determination using an alternative method or protocol as specified in permit condition 14.1, paragraph 2(c), if applicable.
6. The records specified in subparagraphs (a) and (b) below for each add-on control device organic hazardous air pollutant destruction or removal efficiency determination as specified in permit condition 15.1.
 - a. Records of each add-on control device performance test conducted according to the procedures in Chapters 13.0, 14.0, and 15.0.
 - b. Records of the coating operation conditions during the add-on control device performance test showing that the performance test was conducted under representative operating conditions.
 7. Records of the data and calculations used to establish the emission capture and add-on control device operating limits as specified in permit condition 13.2 and to document compliance with the operating limits in permit condition 6.6.
 8. A record of the work practice plan required in permit condition 16.2 and documentation that the plan is implemented on a continuous basis.

5.8 Annual records. In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall calculate and record the following amounts from January 1 to December 31 of each year:

1. The annual amount of volatile organic compound emissions;
2. The annual amount of hazardous air pollutant emissions; and
3. The amount of natural gas consumed in the fuel burning units.

The amount volatile organic compound and hazardous air pollutant emissions shall be based on the amount of products used each month and the composition of the product based on the material safety data sheets, manufacturer supplied formulation data, EPA approved test method data, or a method approved by the Secretary.

5.9 Initial compliance demonstration. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR §§ 63.3883(b), 63.3940, 63.3950, and 63.3960, the owner or operator must demonstrate compliance during the initial compliance period according to the applicable requirements in Chapters 8.0, 10.0, and/or 12.0. The initial compliance period begins on January 2, 2007, and ends on the last day of the 12th month following the compliance date. If the compliance date occurs on any day other than the first day of a month, then the initial compliance period extends through that month plus the next 12 months.

5.10 Notification of compliance status. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3910 (b) and (c), the owner or operator must submit a notification of compliance status no later than 30 calendar days following the end of the initial compliance period. The notification of compliance status must contain the following information:

1. Company name and address;
2. 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;
3. Date of the report and beginning and ending dates of the reporting period;
4. Identification of the compliance option or options used on each coating operation in Table #1;
5. A statement of whether or not the emission limitations were achieved for the initial compliance period;
6. If there was a deviation, include the following information:
 - a. A description and statement of the cause of the deviation; and
 - b. If the emission limits in permit condition 6.5 were exceeded, all calculations used to determine the kilograms (pounds) of organic hazardous air pollutants emitted per liter (gallon) coating solids used must be included. Information provided by the materials' suppliers or manufacturers, or test reports does not need to be submitted;
7. For each data item listed below that is required by the compliance option used to demonstrate compliance with the emission limit, an example of how the value was determined, including calculations and supporting data. Supporting data may include a copy of the information provided by the supplier or manufacturer of the example coating or material, or a summary of the results of testing conducted in accordance with the procedures in permit conditions 8.2, 8.3, and/or 8.4. Copies of test reports are not required:
 - a. Mass fraction of organic hazardous air pollutant for one coating, for one thinner and/or other additive, and for one cleaning material;
 - b. Volume fraction of coating solids for one coating;

- c. Density for one coating, one thinner and/or other additive, and one cleaning material. If the compliant material option is used to demonstrate compliance, only the example coating density is required;
 - d. The amount of waste materials and the mass of organic hazardous air pollutants contained in the waste materials if the allowance in Equation 10-1 is claimed.
8. The calculation of kilograms (pounds) organic hazardous air pollutants emitted per liter (gallon) coating solids used for the compliance option(s) used as specified below:
 - a. For the compliant material option, an example calculation of the organic hazardous air pollutant content for one coating using Equation 8-2.
 - b. For the emission rate without add-on controls option, the calculation of the total mass of organic hazardous air pollutant emissions for each month, the calculation of the total volume of coating solids used each month, and the calculation of the 12-month organic hazardous air pollutant emission rate using Equations 10-1 through 10-6.
 - c. For the emission rate with add-on controls option, provide the calculation of the total mass of organic hazardous air pollutant emissions for the coatings, thinners and/or other additives, and cleaning materials used each month, using Equations 10-1 through 10-4; the calculation of the total volume of coating solids used each month using Equation 10-5; the mass of organic hazardous air pollutant emission reduction each month by emission capture systems and add-on control devices using Equations 12-1 through 12-5; the calculation of the total mass of organic hazardous emissions each month using Equation 12-6; and the calculation of the 12-month organic hazardous air pollutant emission rate using Equation 12-7.
 9. For the emission rate with add-on controls option, the owner or operator must include the following information, except that the requirements in (a) through (c) are not applicable to solvent recovery systems for which liquid-liquid material balances are conducted:
 - a. For each emission capture system, a summary of the data and copies of the calculations supporting the determination that the emission capture system is a permanent total enclosure (PTE) or a measurement of the emission capture system efficiency. Include a description of the protocol followed for measuring capture efficiency, summaries of any capture efficiency tests conducted, and any calculations supporting the capture efficiency determination. If the data quality objective or lower confidence limit approach is used, the owner or operator must also include the statistical calculations to show the data quality objectives or lower confidence limit criteria in 40 CFR Part 63 subpart KK Appendix A are met. Submittal of complete test reports is not required;
 - b. A summary of the results of each add-on control device performance test. Submittal of complete test reports is not required;
 - c. A list of each emission capture system's and add-on control device's operating limits and a summary of the data used to calculate those limits; and
 - d. A statement of whether or not the owner or operator developed and implemented the work practice plan required in permit condition 16.2.
 10. If a single emission limit representing the predominant activity is used, include the calculations and supporting information used to demonstrate that this emission limit represents the predominant activity as specified in permit condition 6.5 paragraph (6).

11. If a facility-specific emission limit is used, include the calculation of the facility-specific emission limit and any supporting information as specified in permit condition 6.5 paragraph (7).

5.11 Semiannual compliance report. In accordance with ARSD 74:36:08:03, as referenced to 40 CFR § 63.10(d), and 74:36:08:37, as referenced to 40 CFR § 63.3920(a) and (c)(1), the owner or operator shall submit a semiannual compliance report to the Secretary. The semiannual report shall contain the following information:

1. Company name and address;
2. 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;
3. Date of report and beginning and ending dates of the reporting period. The reporting period is the 6-month period ending on June 30 or December 31. The information reported for each of the 6 months in the reporting period is based on the last 12 months of data prior to the date of each monthly calculation;
4. The quantity of volatile organic compounds, in tons, emitted for each 12-month period in the reporting period and supporting documentation;
5. Identification of the compliance option or options used on each coating operation in Table #1 during the reporting period. If the compliance option used changes during the compliance period, include the beginning and ending dates for each option used;
6. If the emission rate without add-on controls options was used to demonstrate compliance, the calculation results for each rolling 12-month organic hazardous air pollutant emission rate during the 6-month reporting period;
7. If the predominant activity in permit condition 6.5 paragraph (6) is used, include the annual determination of predominant activity if it was not included in the previous semi-annual compliance report;
8. If the facility-specific emission limit alternative in permit condition 6.5 paragraph (7) is used, include the calculation of the facility-specific emission limit for each 12-month compliance period during the 6-month reporting period;
9. If there were no deviations from the emission limitations in permit condition 6.5, a statement that there were no deviations from the emission limitations during the reporting period;
10. If the compliant materials option is used to demonstrate compliance and there was a deviation from the emission limitation in permit condition 6.5, the semiannual compliance report shall contain the following information:
 - a. Identification of each coating used that deviated from the applicable emission limit, and each thinner and/or other additive, and cleaning material used that contained organic hazardous air pollutants, and the dates and time periods each was used;
 - b. The calculation of the organic hazardous air pollutant content using Equation 10-2 for each coating identified in subparagraph (a);
 - c. The determination of mass fraction of organic hazardous air pollutant for each thinner and/or other additive, and cleaning material identified in subparagraph (a); and
 - d. A statement of the cause of each deviation.

11. If the emission rate without add-on controls option is used to demonstrate compliance and there was a deviation from the applicable emission limits in permit condition 6.5, the semiannual compliance report shall contain the following information:
 - a. The beginning and ending dates of each compliance period during which the 12-month organic hazardous air pollutant emission rate exceeded the applicable emission limit;
 - b. The calculations used to determine the 12-month organic hazardous air pollutant emission rate for the compliance period in which the deviation occurred. The calculations for Equations 10-1 through 10-6 and if applicable, the calculation used to determine mass of organic hazardous air pollutants in waste materials according to the procedure in permit condition 10.7. Background data supporting these calculations (e.g., information provided by materials suppliers or manufacturers, or test reports) do not have to be submitted; and
 - c. A statement of the cause of each deviation.
12. If the emission rate with add-on controls option is used to demonstrate compliance and there was a deviation from the applicable emission limits in permit condition 6.5 (including any periods when emissions bypassed the add-on control device and were diverted to the atmosphere), the semiannual compliance report shall contain the following information (including periods of startup, shutdown, and malfunction during which deviations occurred):
 - d. The beginning and ending dates of each compliance period during which the 12-month organic hazardous air pollutant emission rate exceeded the applicable emission limit;
 - e. The calculations used to determine the 12-month hazardous air pollutant emission rate for each compliance period in which a deviation occurred. The owner or operator must provide the calculation of the total mass of organic hazardous air pollutant emissions for the coatings, thinners and/or other additives, and cleaning materials used each month using Equations 10-1 through 10-4; and, if applicable, the calculation used to determine mass of organic hazardous air pollutants in waste materials according to the procedure in permit condition 10.7; the calculation of the total volume of coating solids used each month using Equation 10-5; the calculation of the mass of organic hazardous air pollutant emission reduction each month by emission capture systems and add-on control devices using Equations 12-1 through 12-5, as applicable; the calculation of the total mass of organic hazardous air pollutant emissions each month using Equation 12-6; and the calculation of the 12-month organic hazardous air pollutant emission rate using Equation 12-7. Background data supporting these calculations (e.g., information provided by materials suppliers or manufacturers, or test reports) do not have to be submitted;
 - f. The date and time that each malfunction started and stopped;
 - g. A brief description of the continuous parameter monitoring system;
 - h. The date of the latest continuous parameter monitoring system certification or audit;
 - i. The date and time that each continuous parameter monitoring system was inoperative, except for zero (low-level) and high-level checks;
 - j. The date, time, and duration that each continuous parameter monitoring system was out-of-control;

- k. The date and time period of each deviation from the operating limit in permit condition 6.6; date and time period of any bypass of the add-on control device; and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period;
 - l. A summary of the total duration of each deviation from the operating limit in permit condition 6.6 and each bypass of the add-on control device during the semiannual reporting period, and the total duration as a percent of the total source operating time during that semiannual reporting period;
 - m. A breakdown of the total duration of the deviations from the operating limits in permit condition 6.6 and bypasses of the add-on control device during the semiannual reporting period into those that were due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes;
 - n. A summary of the total duration of continuous parameter monitoring system downtime during the semiannual reporting period and the total duration of continuous parameter monitoring system downtime as a percent of the total source operating time during that semiannual reporting period;
 - o. A description of any changes in the continuous parameter monitoring system, coating operation, emission capture system, or add-on control device since the last semiannual reporting period;
 - p. For each deviation from the work practice standards, a description of the deviation, the date and time period of the deviation, and the actions taken to correct the deviation; and
 - q. A statement of the cause of each deviation; and
13. If the emission rate with add-on controls option is used to demonstrate compliance and the actions taken by the owner or operator during a startup, shutdown, or malfunction were consistent with the procedures in the facility's startup, shutdown, or malfunction plan, the owner or operator shall include the information specified in 40 CFR § 63.10(d).

The first semiannual report shall cover the period beginning on February 1, 2008, and ending June 30, 2008. Subsequent semiannual reports must cover the period from July 1 through December 31, or the semiannual reporting period from January 1 through June 30. Each semiannual report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.

5.12 Immediate reporting. In accordance with ARSD 74:36:08:03, as referenced to 40 CFR § 63.10(d)(5)(ii) and 40 CFR § 63.3920(c)(2)(i) and (c)(2)(ii), if an action taken by the owner or operator during a startup, shutdown, or malfunction is not consistent with the procedures specified in the startup, shutdown, and malfunction plan, the owner or operator must describe the actions taken during the event in a report delivered by facsimile, telephone, or other means to the Secretary within 2 working days after starting actions that are inconsistent with the plan. The owner or operator must submit a letter to the Secretary within 7 working days after the end of the event unless alternative arrangements have been made.

5.13 Annual compliance certification. In accordance with ARSD 74:36:05:16.01(14), the owner or operator shall submit an annual compliance certification letter to the Secretary by March 1 of each year this permit is in effect (NOTE: The Secretary will forward a copy of the certification letter to EPA). The certification shall contain the following information:

1. Methods used to determine compliance, including: monitoring, record keeping, performance testing and reporting requirements;
2. The source is in compliance and will continue to demonstrate compliance with all applicable requirements;
3. In the event the source is in noncompliance, a compliance plan that indicates how the source has or will be brought into compliance; and
4. Certification statement required in permit condition 5.3.

5.14 Reporting permit violations. In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall report all permit violations. A permit violation should be reported as soon as possible, but no later than the first business day following the day the violation was discovered. The permit violation may be reported by telephone to the South Dakota Department of Environment and Natural Resources at (605) 773-3151 or by FAX at (605) 773-5286.

A written report shall be submitted within five days of discovering the permit violation. Upon prior approval from the Secretary, the submittal deadline for the written report may be extended up to 30 days. The written report shall contain:

1. Description of the permit violation and its cause(s);
2. Duration of the permit violation, including exact dates and times; and
3. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the permit violation.

6.0 CONTROL OF REGULATED AIR POLLUTANTS

6.1 Visibility limit. In accordance with ARSD 74:36:12:01, the owner or operator may not discharge into the ambient air an air contaminant of a density equal to or greater than that designated as 20 percent opacity from any permitted unit, operation, or process listed in Table #1. This provision does not apply when the presence of uncombined water is the only reason for failure to meet the requirement.

6.2 Visibility exceedances. In accordance with ARSD 74:36:12:02, an exceedance of the operating limit in permit condition 6.1 is not considered a violation during brief periods of soot blowing, start-up, shutdown, or malfunctions. Malfunction means any sudden and unavoidable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. A failure caused entirely or in part by poor maintenance, careless operation, preventable equipment breakdown, or any other cause within the control of the owner or operator of the source is not a malfunction and is considered a violation.

6.3 Total suspended particulate matter limits. In accordance with ARSD 74:36:06:02(1) and/or ARSD 74:36:06:03(1), the owner or operator shall not allow the emission of total suspended particulate matter in excess of the emission limit specified in Table #2 for the appropriate permitted unit, operation, and process.

**Table #2
Total Suspended Particulate Matter Emission Limit**

Unit	Description	Emission Limit
#1	1979 Warwick Furnace Company aluminum remelt furnace (North Melter)	15.8 pounds per hour
#2	1979 Warwick Furnace Company aluminum remelt furnace (South Melter)	15.8 pounds per hour
#3	1988 Certified Industrial Technology aluminum remelt furnace (West Melter)	15.8 pounds per hour
#4	1979 Certified Industrial Technology alloyed aluminum log furnace (Homogenizing Oven #1)	0.6 pounds per MMBtus heat input
#5	1988 Certified Industrial Technology alloyed aluminum log furnace (Homogenizing Oven #2)	0.6 pounds per MMBtus heat input
#6	1979 Elhaus Industries alloyed aluminum log heater (1800 Log Heater)	0.6 pounds per MMBtus heat input
#7	1991 Elhaus Industries alloyed aluminum log heater (2750 log heater). This unit may be replaced during the term of this permit by a 2007 Belco aluminum heating furnace.	0.6 pounds per MMBtus heat input
#8	1989 Elhaus Industries alloyed aluminum billet heater (3000 Log Heater)	0.6 pounds per MMBtus heat input
#9	2006 Belco Industries alloyed aluminum log heater (3500 Log Heater)	0.6 pounds per MMBtus heat input
#11	1979 Belco Industries aluminum extrusions paint curing bake oven on the original paint line process (North Bake Oven – Paint Line #1)	0.6 pounds per MMBtus heat input
#12	1995 TELLKAMP Systems, Inc., regenerative thermal oxidizer	0.6 pounds per MMBtus heat input
#13	1992 Belco Industries aluminum extrusions pretreatment washer stage 1 on the 1992 vertical paint line process (1 st Stage Washer Burner – South Paint Line #2)	0.6 pounds per MMBtus heat input

6.4 Sulfur dioxide limits. In accordance with ARSD 74:36:06:02(2) and/or ARSD 74:36:06:03(2), the owner or operator shall not allow the emission of sulfur dioxide in excess of

the emission limit specified in Table #3 for the appropriate permitted unit, operations, and process.

**Table #3
Sulfur Dioxide Emission Limit**

Unit	Description	Emission Limit
#1	1979 Warwick Furnace Company aluminum remelt furnace (North Melter)	3.0 pounds per million Btu heat input
#2	1979 Warwick Furnace Company aluminum remelt furnace (South Melter)	3.0 pounds per million Btu heat input
#3	1988 Certified Industrial Technology aluminum remelt furnace (West Melter)	3.0 pounds per million Btu heat input
#4	1979 Certified Industrial Technology alloyed aluminum log furnace (Homogenizing Oven #1)	3.0 pounds per million Btu heat input
#5	1988 Certified Industrial Technology alloyed aluminum log furnace (Homogenizing Oven #2)	3.0 pounds per million Btu heat input
#6	1979 Elhaus Industries alloyed aluminum log heater (1800 Log Heater)	3.0 pounds per million Btu heat input
#7	1991 Elhaus Industries alloyed aluminum log heater (2750 log heater). This unit may be replaced during the term of this permit by a 2007 Belco aluminum heating furnace.	3.0 pounds per million Btu heat input
#8	1989 Elhaus Industries alloyed aluminum billet heater (3000 Log Heater)	3.0 pounds per million Btu heat input
#9	2006 Belco Industries alloyed aluminum log heater (3500 Log Heater)	3.0 pounds per million Btu heat input
#11	1979 Belco Industries aluminum extrusions paint curing bake oven on the original paint line process (North Bake Oven – Paint Line #1)	3.0 pounds per million Btu heat input
#12	1995 TELLKAMP Systems, Inc., regenerative thermal oxidizer	3.0 pounds per million Btu heat input
#13	1992 Belco Industries aluminum extrusions pretreatment washer stage 1 on the 1992 vertical paint line process (1 st Stage Washer Burner – South Paint Line #2)	3.0 pounds per million Btu heat input

Compliance with the sulfur dioxide emission limit is based on a three-hour rolling average, which is the arithmetic average of three contiguous one-hour periods.

6.5 Organic hazardous air pollutant emission limit. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3890(b), on and after January 2, 2007, the owner or

operator shall limit the organic hazardous air pollutant emissions from Units #10 and #12 to the applicable limit specified as follows:

1. For each existing general use coating affected source, limit organic hazardous air pollutant emissions to no more than 0.31 kilogram (2.6 pounds) organic hazardous air pollutant per liter (gallon) coating solids used during each 12-month compliance period.
2. For each existing high performance coating affected source, limit organic hazardous air pollutant emissions to no more than 3.3 kilograms (27.5 pounds) organic hazardous air pollutant per liter (gallon) coating solids used during each 12-month compliance period.
3. For each existing magnet wire coating affected source, limit organic hazardous air pollutant emissions to no more than 0.12 kilogram (1.0 pound) organic hazardous air pollutant per liter (gallon) coating solids used during each 12-month compliance period.
4. For each existing rubber-to-metal coating affected source, limit organic hazardous air pollutant emissions to no more than 4.5 kilograms (37.7 pounds) organic hazardous air pollutant per liter (gallon) coating solids used during each 12-month compliance period.
5. For each existing extreme performance fluoropolymer coating affected source, limit organic hazardous air pollutant emissions to no more than 1.5 kilograms (12.4 pounds) organic hazardous air pollutant per liter (gallon) coating solids used during each 12-month period.

In accordance with ARSD 74:36:08:37, as referenced to 40 CFR §§ 63.3890(c), if the surface coating operations meet the applicability criteria of more than one of the subcategory emission limits specified in paragraphs (1) through (5) above, the owner or operator may comply separately with each subcategory emission limit or comply using one of the following alternatives:

6. If the general use or magnet wire surface coating operations subject to only one of the emission limits specified in paragraph (1) or (3) above account for 90 percent or more of the surface coating activity (i.e., it is the predominant activity at the facility), then compliance with that one emission limit for all surface coating operations constitutes compliance with the other applicable emission limits. Liters (gallons) of solids used must be used as a measure of relative surface coating activity over a representative period of operation. The relative volume of coating solids used may be estimated from parameters other than coating consumption and volume solids content (e.g., design specifications for the for the parts or products coated and the number of items produced). The determination of predominant activity must accurately reflect current and projected coating operations and must be verifiable through appropriate documentation. The use of parameters other than coating consumption and volume solids content must be approved by the Administrator of the Environmental Protection Agency. Data for any reasonable time period of at least 1 year may be used in determining the relative amount of coating activity as long as they represent the way the source will continue to operate in the future and are approved by the Administrator. If the predominant activity alternative is used, the owner or operator must determine the predominant activity and submit the results of that determination with the initial notification required in permit condition 5.10. The facility's predominant activity must be determined

annually and the determination included in the next semi-annual compliance report required in permit condition 5.11.

7. The owner or operator may calculate and comply with a facility-specific emission limit. If the facility-specific emission limit alternative is used, then compliance with the facility-specific emission limit and the emission limitations in 40 CFR Part 60, Subpart M MMM for all surface coating operations constitutes compliance with Subpart M MMM and other applicable surface coating national emission standards for hazardous air pollutants. In calculating a facility-specific emission limit, the owner or operator must include coating activities that meet the applicability criteria of the other subcategories and constitute more than 1 percent of total coating activities. Coating activities that meet the applicability criteria of other surface coating national emission standards for hazardous air pollutants but comprise less than 1 percent of coating activities need not be included in the determination of predominant activity but must be included in the compliance calculation.
 - a. The facility-specific emission limit must be calculated when the notification of compliance status required in permit condition 5.10 is submitted and on a monthly basis afterward using the coating data for the relevant 12-month compliance period. The facility-specific emission limit for each 12-month compliance period shall be calculated using Equation 6-1.

Equation 6-1 – Calculate the facility-specific emission limit

$$\text{Facility-specific emission limit} = \frac{\sum_{i=1}^n (\text{Limit}_i)(\text{Solids}_i)}{\sum_{i=1}^n (\text{Solids}_i)}$$

Where:

- Facility-specific emission limit = Facility-specific emission limit for each 12-month compliance period, kilogram (pound) organic hazardous air pollutant per kilogram (pound) coating solids used.
- Limit_i = The new source or existing source emission limit applicable to coating operation, i, included in the facility-specific emission limit, converted to kilogram (pound) organic hazardous air pollutant per kilogram (pound) coating solids used, if the emission limit is not already in those units. All emission limits included in the facility-specific emission limit must be in the same units.
- Solids_i = The liters (gallons) of solids used in coating operation, i, in the 12-month compliance period that is subject to emission limit, i. The volume of coating solids may be estimated from parameters other than coating consumption and volume solids content (e.g., design specifications for the parts or products coated and the number of items produced). The use of parameters other than coating consumption and volume solids content must be approved by the Administrator.

- n = The number of different coating operations included in the facility-specific emission limit.

To convert an emission limit in another surface coating national emission standard for hazardous air pollutants from kilograms (pounds) per kilogram (pound) coating solids used to kilograms (pounds) organic hazardous air pollutant per liter (gallon) coating solids used, the default solids density of 1.26 kilogram solids per liter coating solids (10.5 pound solids per gallon solids) must be used.

Initial compliance with this permit condition shall be demonstrated based on the requirements in Chapters 8.0, 10.0, and/or 12.0. Continuous compliance with this permit condition shall be demonstrated based on the requirements in Chapters 9.0, 11.0, and/or 16.0.

6.6 Operating limits – emission limit with add-on controls option. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR §§ 63.3892(b), the owner or operator must meet the following emission limit for any controlled coating operation(s) for which the emission rate with add-on controls option is used, except those for which a solvent recovery system is used and a liquid-liquid material balance is conducted:

1. For a regenerative thermal oxidizer, the average combustion temperature in any 3-hour period must not fall below the combustion temperature limit established in permit condition 13.2(1).
2. For an emission capture system that is a permanent total enclosure according to 14.1(1), the direction of the air flow at all times must be into the enclosure.
3. For an emission capture system that is not a permanent total enclosure according to 14.1(2), the average gas volumetric flow rate or duct static press in each duct between a capture device and add-on control device inlet in any 3-hour period must not fall below the average volumetric flow rate or duct static pressure limit established for that capture device according to the procedures in permit condition 13.2(2).
4. The emission limit is applicable to the emission capture and control systems on the coating operations(s) for which the emission limit with add-on controls option is used and the operating limit must be established during the performance test conducted according to the requirements in Chapters 13.0, 14.0, and 15.0;
5. The operating limit must be met at all times after it has been established; and
6. If the owner or operator wishes to monitor an alternative parameter and comply with a different operating limit, the owner or operator must apply to the Administrator of the Environmental Protection Agency for approval of alternative monitoring.

6.7 Operational restriction. In accordance with ARSD 74:36:05:16.01(8), the owner or operator shall not emit greater than 245 tons per year of volatile organic compounds per 12-month period. Compliance with the operational limit shall be determined on a rolling monthly total. At the beginning of each month, a new 12-month total shall be calculated using the total tons of volatile organic compound emissions for the current month and the previous 11-months.

6.8 Air emission exceedances – emergency conditions. In accordance with ARSD 74:36:05:16.01(18), the Secretary will allow for an unavoidable emission exceedance of a technology-based emission limit if the exceedance is caused by an emergency condition and immediate action is taken by the owner or operator to restore the operations back to normal. An emergency condition is a situation arising from a sudden and reasonably unforeseeable event beyond the control of the source, including acts of God. An emergency shall not include an emission exceedance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error. The owner or operator shall notify the Secretary within two working days of the incident and take all steps possible to eliminate the excess emissions. The notification must provide a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken. If the notification is submitted orally, a written report summarizing the information required by the notification shall be submitted and postmarked within 30 days of the oral notification.

6.9 Circumvention not allowed. In accordance with ARSD 74:36:05:47.01 and ARSD 74:36:08:03, as referenced to 40 CFR § 63.4(b), no owner or operator shall build, erect, install, or use any article, machine, equipment, or process to conceal an emission that would otherwise constitute noncompliance with this permit. Such concealment includes, but is not limited to 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 or the use of gaseous diluents to achieve compliance with a relevant standard for visible emissions.

6.10 Minimizing emissions. In accordance with ARSD 74:36:05:16.01(8) and ARSD 74:36:08:03, as referenced to 40 CFR § 63.6(e)(1), the owner or operator shall at all time, when practicable, maintain and operate all permitted units in a manner consistent with safety and good air pollution control practices for minimizing emissions. This includes periods of startup, shutdown, and malfunctions unless otherwise specified in this permit. During a period of startup, shutdown, or malfunction, this general duty to minimize emissions requires that the owner or operator reduce emissions from the permitted units 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 Secretary which 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.

7.0 SECONDARY ALUMINUM PRODUCTION MACT STANDARD

7.1 Initial compliance date. In accordance with ARSD 74:36:08:26, as referenced to 40 CFR § 63.1501(a), the compliance date for existing affected sources (Units #1, #2, and #3) in Table #1 is March 24, 2003.

7.2 Definitions. In accordance with ARSD 74:36:08:26, as referenced to 40 CFR § 63.1503, a group 1 furnace means a furnace of any design that melts, holds, or processes aluminum that contains paint, lubricants, coatings, or other foreign materials with or without reactive fluxing, or processes clean charge with reactive fluxing. An existing secondary aluminum processing unit means all existing group I furnaces and all existing in-line fluxers within a secondary aluminum production facility. Each existing group 1 furnace or existing in-line fluxer is considered an emission unit within a secondary aluminum processing unit. Clean charge means furnace charge materials, including molten aluminum; T-bar; sow; ingot; billet; pig; alloying elements; aluminum scrap known by the owner or operator to be entirely free of paints, coatings, and lubricants; uncoated/unpainted aluminum chips that have been thermally dried or treated by a centrifugal cleaner; aluminum scrap dried at 343 °C (650 °F) or higher; aluminum scrap delacquered/decoated at 482 °C (900 °F) or higher, and runaround scrap. Runaround scrap means scrap materials generated on-site by aluminum casting, extruding, rolling, scalping, forging, forming/stamping, cutting, and trimming operations and that do not contain paint or solid coatings. Uncoated/unpainted aluminum chips generated by turning, boring, milling, and similar machining operations may be clean charge if they have been thermally dried or treated by a centrifugal cleaner, but are not considered to be runaround scrap.

7.3 Emission standards for group 1 furnaces. In accordance with ARSD 74:36:08:26, as referenced to 40 CFR§ 63.1505(i), the owner or operator of a group 1 furnace must use the following limits to determine the emission standards for a secondary aluminum processing unit:

1. 0.20 kilogram of particulate matter per megagram (0.40 pounds of particulate matter per ton) of feed/charge from a group 1 furnace, that is not a melting/holding furnace processing clean charge, at a secondary aluminum production facility that is a major source;
2. 15 micrograms of dioxin/furan international toxic equivalents per megagram (2.1×10^{-4} grains of dioxin/furan international toxic equivalents per ton) of feed/charge from a group 1 furnace at a secondary aluminum production facility that is a major source; and
3. 0.20 kilogram of hydrogen chloride per megagram (0.40 pounds of hydrogen chloride per ton) of feed/charge for a group 1 furnace at a secondary aluminum processing facility that is a major source.

The owner or operator may determine the emission standards for a secondary aluminum processing unit by applying the group 1 furnace limits on the basis of the aluminum production weight in each group 1 furnace, rather than on the basis of feed/charge.

7.4 Emission standards for secondary aluminum processing units. In accordance with ARSD 74:36:08:26, as referenced to 40 CFR § 63.1505(k), on and after March 24, 2003, the

owner or operator must comply with the emission limits calculated using Equation 7-1 for particulate matter, Equation 7-2 for hydrogen chloride, and Equation 7-3 for dioxin/furan for each secondary aluminum production facility that is a major source.

The owner or operator must not discharge or allow to be discharged to the atmosphere any 3-day, 24-hour rolling average emissions of particulate matter in excess of:

Equation 7-1 – Calculate the particulate matter emission limit

$$L_{cPM} = \frac{\sum_{i=1}^n (L_{tiPM} \times T_{ti})}{\sum_{i=1}^n T_{ti}}$$

Where:

- L_{tiPM} = The particulate emission limit for individual emission unit i in permit condition 7.3(1) for a group 1 furnace;
- T_{ti} = The feed/charge rate for individual emission unit i; and
- L_{cPM} = The particulate matter emission limit for the secondary aluminum processing unit.

The owner or operator must not discharge or allow to be discharged to the atmosphere any 3-day, 24-hour rolling average emissions of hydrogen chloride in excess of:

Equation 7-2 – Calculate the hydrogen chloride emission limit

$$L_{cHCl} = \frac{\sum_{i=1}^n (L_{tiHCl} \times T_{ti})}{\sum_{i=1}^n T_{ti}}$$

Where:

- L_{tiHCl} = The hydrogen chloride emission limit for individual emission unit i in permit condition 7.3(2) for a group 1 furnace;
- T_{ti} = The feed/charge rate for individual emission unit i; and
- L_{cHCl} = The hydrogen chloride emission limit for the secondary aluminum processing unit.

The owner or operator must not discharge or allow to be discharged to the atmosphere any 3-day, 24-hour rolling average emissions of dioxin/furan in excess of:

Equation 7-3 – Calculate the dioxin/furan emission limit

$$L_{cD/F} = \frac{\sum_{i=1}^n (L_{tiD/F} \times T_{ti})}{\sum_{i=1}^n T_{ti}}$$

Where:

- $L_{tiD/F}$ = The dioxin/furan emission limit for individual emission unit i in permit condition 7.3(3) for a group 1 furnace;
- T_{ti} = The feed/charge rate for individual emission unit i ; and
- $L_{cD/F}$ = The dioxin/furan

The owner or operator of a secondary aluminum processing unit at a secondary aluminum production facility that is a major source may demonstrate compliance with the emission limits in this permit condition by demonstrating that each emission unit within the secondary aluminum processing unit is in compliance with the applicable limits in permit condition 7.3.

7.5 Redesignating a group 1 furnace. In accordance with ARSD 74:36:08:26, as referenced to 40 CFR § 1505(k)(6), with the prior approval of the Secretary, an owner or operator may redesignate any existing group 1 furnace at a secondary aluminum processing facility as a new emission unit. Any emission unit so redesignated may thereafter be included in a new secondary aluminum processing unit at that facility. Any such redesignation will be solely for the purpose of the maximum achievable technology standard and will be irreversible.

7.6 Operating requirements for group 1 furnaces. In accordance with ARSD 74:36:08:26, as referenced to 40 CFR § 1506, on and after March 24, 2003, the owner or operator must operate the affected sources (Units #1, #2 and #3) in Table #1 according to the following requirements:

1. The owner or operator must provide and maintain easily visible labels posted at each group 1 furnace, group 2 furnace, in-line fluxer, and scrap dry/delacquering kiln/decoating kiln that identifies the applicable emission limits and means of compliance, including:
 - a. The type of affected source or emission unit (e.g., scrap dryer/delacquering kiln/decoating kiln, group 1 furnace, group 2 furnace, in-line fluxer); and
 - b. The applicable operational standard(s) and control method(s) (work practices or control device). This includes, but is not limited to, the type of charge to be used for a furnace (e.g., clean scrap only, all scrap, etc.), flux materials and addition practices, and the applicable operating parameter ranges and requirements as incorporated in the operation, maintenance, and monitoring plan.

2. The owner or operator of each affected source or emission unit subject to an emission limit in kilogram per megagram (pound per ton) or microgram per megagram (grain per ton) of feed/charge must:
 - a. Install and operate a device that measures and records or otherwise determine the weight of feed/charge (or throughput) for each operating cycle or time period used in the performance test; and
 - b. Operate each weight measurement system or other weight determination procedure in accordance with the operation, maintenance, and monitoring plan.

or,

The owner or operator may chose to measure and record aluminum production weight from an affected source or emission unit rather than feed/charge weight to an affected source or emission unit, provided that:

- c. The aluminum production weight, rather than feed/charge weight is measured and recorded for all emission units within a secondary aluminum processing unit; and
 - d. All calculations to demonstrate compliance with the emission limits for secondary aluminum processing units are based on aluminum production weight rather than feed/charge weight.
3. The owner or operator of a new or existing in-line fluxer using no reactive flux materials must operate each in-line fluxer using no reactive flux materials.
4. The owner or operator of a group 1 furnace (including a group 1 furnace that is part of a secondary aluminum processing unit) without add-on air pollution control devices must:
 - a. Maintain the total reactive chlorine flux injection rate for each operating cycle or time period used in the performance test at or below the average rate established during the performance test; and
 - b. Operate each furnace in accordance with the work practice/pollution prevention measures documented in the operation, maintenance, and monitoring plan and within the parameter values or ranges established in the operation, maintenance, and monitoring plan.
5. When a process parameter or add-on air pollution control device operating parameter deviates from the value or range established during the performance test and incorporated in the operation, maintenance, and monitoring plan, the owner or operator must initiate corrective action. Corrective action must restore operation of the affected source or emission unit (including the process or control device) to its normal or usual mode of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. Corrective actions taken must include follow-up actions necessary to return the process or control device parameter level(s) to the value or range of values established during the performance test and steps to prevent the likely recurrence of the cause of a deviation.

7.7 Monitoring requirements for group 1 furnaces. In accordance with ARSD 74:36:08:26, as referenced to 40 CFR § 63.1510, on and after March 24, 2003, the owner or operator of each affected source or emission unit must monitor all control equipment and processes according to the following requirements:

1. The owner or operator must prepare and implement a written operation, maintenance, and monitoring plan for each affected source and emission unit. The owner or operator of an existing affected source must submit the operation, maintenance, and monitoring plan to the Secretary no later than March 24, 2003. The plan must be accompanied by a written certification by the owner or operator that the operation, maintenance, and monitoring plan satisfies all requirements of this permit condition and is otherwise consistent with the requirements of this chapter. The owner or operator must comply with all of the provisions of the operation, maintenance, and monitoring plan as submitted to the Secretary, unless and until the plan is revised according to the following procedures. If the Secretary determines at any time after receipt of the operation, maintenance, and monitoring plan that any revisions of the plan are necessary to satisfy the requirements of the permit condition or this chapter, the owner or operator must promptly make all necessary revisions and resubmit the revised plan. If the owner or operator determines that any other revisions of the operation, maintenance, and monitoring plan are necessary, such revisions will not become effective until the owner or operator submits a description of the changes and a revised plan incorporating the changes to the Secretary. Each plan must contain the following information:
 - a. Process and control device parameters to be monitored to determine compliance, along with established operating levels or ranges, as applicable for each process and control device.
 - b. A monitoring schedule for each affected source and emission unit.
 - c. Procedures for the proper operation and maintenance of each process unit and add-on control device used to meet the applicable emission limits or standards in permit conditions 7.3 and 7.4.
 - d. Procedures for the proper operation and maintenance of monitoring devices or systems used to determine compliance, including
 - i. Calibration and certification of accuracy of each monitoring device, at least once every 6 months, according to the manufacturer's instructions.
 - e. Procedures for monitoring process and control device parameters, including procedures for annual inspections of afterburners, and if applicable, the procedure to be used for determining charge/feed (or throughput) weight if a measurement device is not used.
 - f. Corrective actions to be taken when process or operating parameters or add-on control device parameters deviate from the established value or range, including:
 - i. Procedures to determine and record the cause of any deviation or excursion, and the time the deviation or excursion began and ended; and
 - ii. Procedures for recording the corrective action taken, the time corrective action was initiated, and the time/date corrective action was completed.
 - g. A maintenance schedule for each process and control device that is consistent with the manufacturer's instructions and recommendations for routine and long-term maintenance.
 - h. Documentation of the work practice and pollution prevention measures used to achieve compliance with the applicable emission limits and a site-specific monitoring plan as required in paragraph 6 of this permit condition for each group 1 furnace not equipped with an add-on pollution control device.

2. The owner or operator must inspect the labels for each group 1 furnace, group 2 furnace, in-line fluxer and scrap dryer/delacquering kiln/decoating kiln at least once per calendar month to confirm that posted labels as required by the operational standard in permit condition 7.6(1) are intact and legible.
3. The owner or operator of an affected source or emission unit subject to an emission limit in kilogram per megagram (pound per ton) or microgram per megagram (grain per ton) of feed/charge must install, calibrate, operate, and maintain a device to measure and record the total weight of feed/charge to, or the aluminum production from, the affected source or emission unit over the same operating cycle or time period used in the performance test. Feed/charge or aluminum production within secondary aluminum processing units must be measured and recorded on an emission unit-by-emission unit basis. As an alternative to a measurement device, the owner operator may use a procedure acceptable to the Secretary to determine the total weight of feed/charge or aluminum production to the affected source or emission unit.
 - a. The accuracy of the weight measurement device or procedure must be ± 1 percent of the weight being measured. The owner or operator may apply to the Secretary for approval to use a device of alternative accuracy if the required accuracy cannot be achieved as a result of equipment layout or charging practices. A device of alternative accuracy will not be approved unless the owner or operator provides assurance through data and information that the affected source will meet the relevant emission standard.
 - b. The owner or operator must verify the calibration of the weight measurement device in accordance with the schedule specified by the manufacturer, or if no calibration schedule is specified, at least once every 6 months.
4. The owner or operator of an in-line fluxer that uses no reactive flux materials must submit a certification of compliance with the operational standard in permit condition 7.6(3) for each 6-month reporting period. Each certification must contain the information in permit condition 7.15(5).
5. The owner or operator of a group 1 furnace (with or without add-on control devices) or in-line fluxer must:
 - a. Install, calibrate, operate, and maintain a device to continuously measure and record the weight of gaseous or liquid reactive flux injected to each affected source or emission unit.
 - i. The monitoring system must record the weight for each 15-minute block period, during which reactive fluxing occurs, over the same operating cycle or time period used in the performance test.
 - ii. The accuracy of the weight measurement device must be ± 1 percent of the weight of the reactive component of the flux being measured. The owner or operator may apply to the Secretary for permission to use a weight measurement device of alternative accuracy in cases where the reactive flux flow rates are so low as to make the use of a weight measurement device of ± 1 percent impracticable. A device of alternative accuracy will not be approved unless the owner operator provides assurance through data and information that the affected source will meet the relevant emission standards.

- iii. The owner or operator must verify the calibration of the weight measurement device in accordance with the schedule specified by the manufacturer, or if no calibration schedule is specified, at least once every 6 months.
 - b. Calculate and record the gaseous or liquid reactive flux injection rate (kilogram per megagram or pound per ton) for each operating cycle or time period used in the performance test according to the procedures in permit condition 7.9(3).
 - c. Record, for each 15-minute block period during each operating cycle or time period used in the performance test during which reactive fluxing occurs, the time, weight, and type of flux for each addition of:
 - i. Gaseous or liquid reactive flux other than chlorine; and
 - ii. Solid reactive flux.
 - d. Calculate and record the total reactive flux injection rate for each operating cycle or time period used in the performance test using the procedure in permit condition 7.9(3).
 - e. The owner or operator of a group 1 furnace or in-line fluxer performing reactive fluxing may apply to the Administrator for approval of an alternative method for monitoring and recording the total reactive flux addition rate based on monitoring the weight or quantity of reactive flux per ton of feed/charge for each operating cycle or time period used in the performance test. An alternative monitoring method will not be approved unless the owner or operator provides assurance through data and information that the affected source will meet the relevant emission standards on a continuous basis.
6. The owner or operator of a group 1 furnace that is not equipped with an add-on air pollution control device must develop, in consultation with the Secretary, a written site-specific monitoring plan. The site-specific monitoring plan must be submitted to the Secretary as part of the operation, maintenance, and monitoring plan. The site-specific monitoring plan must contain sufficient procedures to ensure continuing compliance with all applicable emission limits and must demonstrate, based on documented test results, the relationship between emissions of particulate matter, hydrogen chloride, and dioxin/furan and the proposed monitoring parameters for each pollutant. Test data must establish the highest level of particulate matter, hydrogen chloride, and dioxin/furan that will be emitted from the furnace. This may be determined by conducting performance tests and monitoring operating parameters while charging the furnace with feed/charge materials containing the highest anticipated levels of oils and coatings and fluxing at the highest anticipated rate. If the Secretary determines that any revisions of the site-specific monitoring plan are necessary to meet the requirements of this permit condition or chapter, the owner or operator must promptly make all necessary revisions and resubmit the revised plan to the permitting authority.
- a. The owner or operator of an existing affected source must submit the site-specific monitoring plan to the Secretary for review at least 6 months prior to the compliance date.
 - b. The Secretary will review and approve or disapprove a proposed plan or request changes to a plan, based on whether the plan contains sufficient provisions to ensure continuing compliance with applicable emission limits and demonstrates, based on documented test results, the relationship between emissions of particulate matter, hydrogen chloride, and

dioxin/furan and the proposed monitoring parameters for each pollutant. Test data must establish the highest level of particulate matter, hydrogen chloride, and dioxin/furan that will be emitted from the furnace. Subject to the Secretary's approval of the operation, maintenance, and monitoring plan, this may be determined by conducting performance tests and monitoring operating parameters while charging the furnace with feed/charge materials containing the highest anticipated levels of oils and coatings and fluxing at the highest anticipated rate.

- c. Each site-specific monitoring plan must document each work practice, equipment/design practice, pollution prevention practice, or other measure used to meet the applicable emission standards.
 - d. Each site-specific monitoring plan must include provisions for unit labeling, feed/charge weight measurement (or production weight measurement) and flux weight measurement.
 - e. If a site-specific monitoring plan includes a scrap inspection program for monitoring the scrap contaminant level of furnace feed/charge materials, the plan must include provisions for the demonstration and implementation of the program in accordance with paragraph (7) of this permit condition.
 - f. If a site-specific monitoring plan includes a calculation method for monitoring the scrap contaminant level of furnace feed/charge materials, the plan must include provisions for the demonstration and implementation of the program in accordance with all applicable requirements in paragraph (8) of this permit condition.
7. A scrap inspection program for a group 1 furnace without add-on air pollution control devices must include the following:
- a. A proven method for collecting representative samples and measuring the oil and coatings content of scrap samples;
 - b. A scrap inspector training program;
 - c. An established correlation between visual inspection and physical measurement of oil and coatings content of scrap samples;
 - d. Periodic physical measurements of oil and coatings content of randomly-selected scrap samples and comparison with visual inspection results;
 - e. A system for assuring that only acceptable scrap is charged to an affected group 1 furnace; and
 - f. Recordkeeping requirements to document conformance with plan requirements.
8. Monitoring of scrap contamination level by calculation method for group 1 furnace without add-on air pollution control devices. The owner or operator of a group 1 furnace dedicated to processing a distinct type of furnace feed/charge composed of scrap with a uniform composition (such as rejected product from a manufacturing process for which the coating-to-scrap ratio can be documented) may include a program in the site-specific monitoring plan for determining, monitoring, and certifying the scrap contaminant level using a calculation method rather than a scrap inspection program. A scrap contaminant monitoring program using a calculation method must include:
- a. Procedures for the characterization and documentation of the contaminant level of the scrap prior to the performance test.

- b. Limitations on the furnace feed/charge to scrap of the same composition as that used in the performance test. If the performance test was conducted with a mixture of scrap and clean charge, limitations on the proportion of scrap in the furnace feed/charge to no greater than the proportion used during the performance test.
 - c. Operating, monitoring, recordkeeping, and reporting requirements to ensure that no scrap with a contaminant level higher than that used in the performance test is charged to the furnace.
9. An owner or operator of a secondary aluminum processing unit at a facility must include the following site-specific requirements within the operation, maintenance, and monitoring plan, prepared in accordance with permit condition 7.7(1):
 - a. The identification of each emission unit in the secondary aluminum processing unit;
 - b. The specific control technology or pollution prevention measure to be used for each emission unit in the secondary aluminum processing unit and the date of its installation or application;
 - c. The emission limit calculated for each secondary aluminum processing unit and performance test results with supporting calculations demonstrating initial compliance with each applicable emission limit;
 - d. Information and data demonstrating compliance for each emission unit with all applicable design, equipment, work practice or operational standards of this chapter; and
 - e. The monitoring requirements applicable to each emission unit in a secondary aluminum processing unit and the monitoring procedures for daily calculation of the 3-day, 24-hour rolling average using the procedure in paragraph (12) of this permit condition.
 10. The secondary aluminum processing unit compliance procedures within the operation, maintenance, and monitoring plan may not contain any of the following provisions:
 - a. Any averaging among emissions of differing pollutants;
 - b. The inclusion of any affected sources other than emission units in a secondary aluminum processing unit;
 - c. The inclusion of any emission unit while it is shutdown; or
 - d. The inclusion of any periods of startup, shutdown, or malfunction in emission calculations.
 11. To revise the secondary aluminum processing unit compliance provisions within the operation, maintenance, and monitoring plan prior to the end of the permit term, the owner or operator must submit a request to the Secretary containing the information in paragraph (9) of this permit condition and obtain approval prior to implementing any revisions.
 12. Except as provided in paragraph (13) of this permit condition, the owner or operator must calculate and record the 3-day, 24-hour rolling average emissions of particulate matter, hydrogen chloride, and dioxin/furan for each secondary aluminum processing unit on a daily basis. To calculate the 3-day, 24-hour rolling average, the owner or operator must:
 - a. Calculate and record the total weight of material charged to each emission unit in the secondary aluminum processing unit for each 24-hour day of operation using the feed/charge weight information required in paragraph (3) of this permit condition. If the owner or operator chooses to comply on the basis of weight of aluminum produced by the emission unit, rather than weight of material charged to the emission unit, all

performance test emissions results and all calculations must be conducted on the aluminum production weight basis.

- b. Multiply the total feed/charge weight to the emission unit, or the weight of aluminum produced by the emission unit, for each emission unit for the 24-hour period by the emission rate (in pounds per ton of feed/charge) for that emission unit (as determined during the performance test) to provide emissions for each emission unit for the 24-hour period, in pounds.
- c. Divide the total emissions for each secondary aluminum processing unit for the 24-hour period by the total material charged to the secondary aluminum processing unit, or the weight of aluminum produced by the secondary aluminum processing unit over the 24-hour period to provide the daily emission rate for the secondary aluminum processing unit.
- d. Compute the 24-hour daily emission rate using equation 7-4.

Equation 7-4 – Compute the 24-hour daily emission rate

$$E_{day} = \frac{\sum_{i=1}^n T_i \times ER_i}{\sum_{i=1}^n T_i}$$

Where:

- E_{day} = The daily particulate matter, hydrogen chloride, or dioxin/furan emission rate for the secondary aluminum processing unit for the 24-hour period;
 - T_i = The total amount of feed, or aluminum produced, for emission unit i for the 24-hour period (tons or megagrams);
 - ER_i = The measured emission rate for emission unit i as determined in the performance test (pound/ton or microgram/megagram of feed/charge); and
 - n = The number of emission units in the secondary aluminum processing unit.
- e. Calculate and record the 3-day, 24-hour rolling average for each pollutant each day by summing the daily emission rates for each pollutant over the 3 most recent consecutive days and dividing by 3.
13. As an alternative to the procedures in paragraph (12), an owner or operator may demonstrate, through performance tests, that each individual emission unit within the secondary aluminum production unit is in compliance with the applicable emission limits for the emission unit.
 14. If an owner or operator wishes to use an alternative monitoring method to demonstrate compliance with any emission standard in this chapter, other than those alternative monitoring methods which may be authorized in paragraph 5(e) of this permit condition, the owner or operator may submit an application to the Administrator. Any such application will be processed according to the following criteria and procedures:

- a. The Administrator will not approve averaging periods other than those specified in this permit condition.
- b. The owner or operator must continue to use the original monitoring requirement until necessary data are submitted and approval is received to use another monitoring procedure.
- c. The owner or operator shall submit the application for approval of alternative monitoring methods no later than the notification of the performance test. The application must contain the following information:
 - i. Data or information justifying the request, such as the technical or economic infeasibility, or the impracticality of using the required approach;
 - ii. A description of the proposed alternative monitoring requirements, including the operating parameters to be monitored, the monitoring approach and technique, and how the limit is to be calculated; and
 - iii. Data and information documenting that the alternative monitoring requirement(s) would provide equivalent or better assurance of compliance with the relevant emission standard(s).
- d. The Administrator will not approve an alternate monitoring application unless it would provide equivalent or better assurance of compliance with the relevant emission standard(s). Before disapproving any alternate monitoring application, the Administrator will provide:
 - i. Notice of the information and findings upon which the intended disapproval is based; and
 - ii. Notice of opportunity for the owner or operator to present additional supporting information before final action is taken on the application. This notice will specify how much additional time is allowed for the owner or operator to provide additional supporting information.
- e. The owner or operator is responsible for submitting any supporting information in a timely manner to enable the Administrator to consider the application prior to the performance test. Neither submittal of an application nor the Administrator's failure to approve or disapprove the application relieves the owner or operator of the responsibility to comply with any provisions of this chapter.
- f. The Administrator may decide at any time, on a case-by-case basis, that additional or alternative operating limits, or alternative approaches to establishing operating limits, are necessary to demonstrate compliance with the emission standards of this chapter.

7.8 Performance test/compliance demonstration general requirements. In accordance with ARSD 74:36:08:26, as referenced to 40 CFR § 63.1511, the owner or operator must prepare a site-specific test plan, which satisfies all of the testing requirements, and obtain approval of the plan according to the procedures in 40 CFR §63.7(c). Following approval of the site-specific test plan, the owner or operator must demonstrate initial compliance with each applicable emission, equipment, work practice, or operational standard for each affected source and emission unit and report the results in the notification of compliance status report required in permit condition 7.13. The owner or operator of any existing affected source for which an initial performance test is

required to demonstrate compliance must conduct the initial performance test by March 24, 2003. The owner or operator of new or existing affected sources and emission units located at secondary aluminum production facilities that are major sources must conduct a performance test every 5 years following the initial performance test. The owner or operator must conduct each performance test in accordance with the requirements and procedures in 40 CFR §63.7(c).

1. The owner or operator must conduct each test while the affected source or emission unit is operating at the highest production level with charge materials representative of the range of materials processed by the unit and, if applicable, at the highest reactive fluxing rate.
2. Each performance test for a continuous process must consist of 3 separate runs; pollutant sampling for each run must be conducted for the time period specified in the applicable method or, in the absence of a specific time period in the test method, for a minimum of 3 hours.
3. Each performance test for a batch process must consist of three separate runs; pollutant sampling for each run must be conducted over the entire process operating cycle.
4. Where multiple affected sources or emission units are exhausted through a common stack, pollutant sampling for each run must be conducted over a period of time during which all affected sources or emission units complete at least 1 entire process operating cycle or for 24 hours, whichever is shorter.
5. Initial compliance with the applicable emission limit or standard is demonstrated if the average of three runs conducted during the performance is less than or equal to the applicable emission limit or standard.
6. The owner or operator must use the following methods in Appendix A of 40 CFR Part 60 to determine compliance with the applicable emission limits or standards:
 - a. Method 1 for sample and velocity traverses.
 - b. Method 2 for velocity and volumetric flow rate.
 - c. Method 3 for gas analysis.
 - d. Method 4 for moisture content of the stack gas.
 - e. Method 5 for the concentration of particulate matter.
 - f. Method 9 for visible emission observations.
 - g. Method 23 for the concentration of dioxin/furan
 - h. Method 26A for the concentration of hydrogen chloride.
7. The owner or operator may use an alternative test method, subject to approval by the Administrator.
8. With the prior approval of the Secretary, an owner or operator may utilize emission rates obtained by testing a particular type of group 1 furnace which is not controlled by any add-on control device to determine the emission rate for other units of the same type at the same facility. Such emission test results may only be considered to be representative of other units if all the following criteria are satisfied:
 - a. The tested emission unit must use feed materials and charge rates which are comparable to the emission units that it represents;
 - b. The tested emission unit must use the same type of flux materials in the same proportions as the emission units it represents;

- c. The tested emission unit must be operated utilizing the same work practices as the emission units that it represents;
 - d. The tested emission unit must be of the same design as the emission units that it represents; and
 - e. The tested emission unit must be tested under the highest load or capacity reasonably expected to occur for any of the emission units that it represents.
9. The owner or operator of new or existing affected sources and emission units must establish a minimum or maximum operating parameter value, or an operating parameter range for each parameter to be monitored as required in permit condition 7.7 that ensures compliance with the applicable emission limit or standard. To establish the minimum or maximum value or range, the owner or operator must use the appropriate procedures in this permit condition and submit the information required by permit condition 7.13(3) in the notification of compliance status report. The owner or operator may use existing data in addition to the results of performance tests to establish operating parameter values for compliance monitoring provided each of the following conditions are met to the satisfaction of the Secretary:
- a. The complete emission test report(s) used as the basis of the parameter(s) is submitted.
 - b. The same test methods and procedures as required by this chapter were used in the test.
 - c. The owner or operator certifies that no design or work practice changes have been made to the source, process, or emission control equipment since the time of the report.
 - d. All process and control equipment operating parameters required to be monitored were monitored as required and documented in the test report.

7.9 Performance test/compliance demonstration for group 1 furnaces. In accordance with ARSD 74:36:08:26, as referenced to 40 CFR § 63.1512(e), in the site-specific monitoring plan, the owner or operator of a group 1 furnace (including melting holding furnaces) without add-on air pollution control devices must include data and information demonstrating compliance with the applicable emission limits.

1. If the group 1 furnace processes other than clean charge material, the owner or operator must conduct emission tests to measure emissions of particulate matter, hydrogen chloride, and dioxin/furan at the furnace exhaust outlet. The owner or operator may choose to determine the rate of reactive flux addition to the group 1 furnace and assume, for the purposes of demonstrating compliance with the secondary aluminum processing unit emission limit, that all reactive flux added to the group 1 furnace is emitted. Under these circumstances, the owner or operator is not required to conduct an emission test for hydrogen chloride.
2. During the emission test(s) conducted to determine compliance with emission limits in a kilogram per megagram (pound per ton) format, the owner or operator of an affected source or emission unit, subject to an emission limit in a kilogram per megagram (pound per ton) of feed/charge format, must measure (or otherwise determine) and record the total weight of feed/charge to the affected source or emission unit for each of the three test runs and calculate and record the total weight. An owner or operator that chooses to demonstrate compliance on the basis of the aluminum production weight must measure the weight of

aluminum produced by the emission unit or affected source instead of the feed/charge weight.

3. The owner or operator must use the following procedures to establish an operating parameter value or range for the total reactive chlorine flux injection rate:
 - a. Continuously measure and record the weight of gaseous or liquid reactive flux injected for each 15 minute period during the hydrogen chloride and dioxin/furan tests, determine and record the 15-minute block average weights, and calculate and record the total weight of the gaseous or liquid reactive flux for the 3 test runs;
 - b. Record the identity, composition, and total weight of each addition of solid reactive flux for the 3 test runs;
 - c. Determine the total reactive chlorine flux injection rate by adding the recorded measurement of the total weight of chlorine in the gaseous or liquid reactive flux injected and the total weight of chlorine in the solid reactive flux using Equation 7-5;

Equation 7-5 – Determine the total reactive chlorine flux injection rate

$$W_t = F_1W_1 + F_2W_2$$

Where:

- W_t = Total chlorine usage by weight;
 - F_1 = Fraction of gaseous or liquid flux that is chlorine;
 - W_1 = Weight of reactive flux gas injected;
 - F_2 = Fraction of solid reactive chloride flux that is chlorine (e.g. $F = 0.75$ for magnesium chloride); and
 - W_2 = Weight of solid reactive flux.
- d. Divide the weight of total chlorine usage (W_t) for the 3 test runs by the recorded measurement of the total weight of feed for the 3 test runs; and
 - e. If a solid reactive flux other than magnesium chloride is used, the owner or operator must derive the appropriate proportion factor subject to approval by the Secretary.
4. The owner or operator of each scrap dryer/delacquering kiln/decoating kiln, group 1 furnace, group 2 furnace and in-line fluxer must submit the information required in the notification of compliance status to document conformance with the operational standard in permit condition 7.6(1).

7.10 Equations for determining compliance with the emission standards. In accordance with ARSD 74:36:08:26, as referenced to 40 CFR § 63.1513(b), the owner or operator shall use the following equations to determine compliance with the applicable emission standard:

1. Use Equation 7-6 to determine compliance with an emission limit for particulate matter or hydrogen chloride.

Equation 7-6 – Determining particulate matter or hydrogen chloride emission rate

$$E = \frac{C \times Q \times K_1}{P}$$

Where:

- E = Emission rate of particulate matter or hydrogen chloride, kilogram/megagram (pound/ton) of feed;
- C = Concentration of particulate matter or hydrogen chloride, gram/dry standard cubic meter (grain/dry standard cubic foot);
- Q = Volumetric flow rate of exhaust gases, dry standard cubic meter/hour (dry standard cubic foot/hour);
- K₁ = Conversion factor, 1 kilogram/1,000 grams (1 pound/7,000 grains); and
- P = Production rate, megagrams/hour (tons/hour).

2. Use Equation 7-7 to determine compliance with an emission limit for dioxin/furan.

Equation 7-7 – Determining dioxin/furan emission rate

$$E = \frac{C \times Q}{P}$$

Where:

- E = Emission rate of dioxin/furan, microgram/megagram (grain/ton) of feed;
- C = Concentration of dioxin/furan, microgram/dry standard cubic meter (grain/dry standard cubic foot);
- Q = Volumetric flow rate of exhaust gases, dry standard cubic meter/hour (dry standard cubic foot/hour);
- K₁ = Conversion factor, 1 kilogram/1,000 grams (1 pound/7,000 grains); and
- P = Production rate, megagrams/hour (tons/hour).

To convert dioxin/furan measurements to international toxic equivalent units, the owner or operator must use the procedures and equations in “Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxins and -Dibenzofurans (CDDs and CDFs) and 1989 Update” (EPA-625/3-89-016), available from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, Virginia, NTIS no. PB 90-145756.

7.11 Demonstrating compliance with secondary aluminum standards. In accordance with ARSD 74:36:08:26, as referenced to 40 CFR § 63.1513(e), the owner or operator shall use the following procedures to determine compliance with emission limits for a secondary aluminum processing unit.

1. Use Equation 7-8 to compute the mass-weighted particulate matter emissions for a secondary aluminum processing unit. Compliance is achieved if the mass-weighted emissions for the secondary aluminum processing unit (E_{cPM}) is less than or equal to the emission limit for the secondary aluminum processing unit (L_{cPM}) calculated using Equation 7-1.

Equation 7-8 – Calculate the mass-weighted particulate matter emissions

$$E_{cPM} = \frac{\sum_{i=1}^n (E_{iPM} \times T_{ii})}{\sum_{i=1}^n T_{ii}}$$

Where:

- E_{cPM} = The mass-weighted particulate matter emissions for the secondary aluminum processing unit;
 - E_{iPM} = Measured particulate matter emissions for individual emission unit i;
 - T_{ii} = The average feed rate for individual emission unit i during the operating cycle or performance test period; and
 - n = The number of emission units in the secondary aluminum processing unit.
2. Use Equation 7-9 to compute the aluminum mass-weighted hydrogen chloride emissions for a secondary aluminum processing unit. Compliance is achieved if the mass-weighted emissions for the secondary aluminum processing unit (E_{cHCl}) is less than or equal to the emission limit for the secondary aluminum processing unit (L_{cHCl}) calculated using Equation 7-2.

Equation 7-9 – Calculate the mass-weighted hydrogen chloride emission limit

$$E_{cHCl} = \frac{\sum_{i=1}^n (E_{iHCl} \times T_{ii})}{\sum_{i=1}^n T_{ii}}$$

Where:

- E_{cHCl} = The mass-weighted hydrogen chloride emissions for the secondary aluminum processing unit;
- E_{iHCl} = Measured hydrogen chloride emissions for individual emission unit i;

- T_{ii} = The average feed rate for individual emission unit i during the operating cycle or performance test period; and
 - n = The number of emission units in the secondary aluminum processing unit.
3. Use Equation 7-10 to compute the aluminum mass-weighted dioxin/furan emissions for a secondary aluminum processing unit. Compliance is achieved if the mass-weighted emissions for the secondary aluminum processing unit ($E_{cD/F}$) is less than or equal to the emission limit for the secondary aluminum processing unit ($L_{cD/F}$) calculated using Equation 7-3.

Equation 7-10 – Calculate the dioxin/furan emission limit

$$E_{cD/F} = \frac{\sum_{i=1}^n (E_{iiD/F} \times T_{ii})}{\sum_{i=1}^n T_{ii}}$$

Where:

- $E_{cD/F}$ = The mass-weighted dioxin/furan emissions for the secondary aluminum processing unit;
- E_{iiHCl} = Measured dioxin/furan emissions for individual emission unit i ;
- T_{ii} = The average feed rate for individual emission unit i during the operating cycle or performance test period; and
- n = The number of emission units in the secondary aluminum processing unit.

As an alternative to using Equations 7-8, 7-9, and 7-10, the owner or operator may demonstrate compliance for a secondary aluminum processing unit by demonstrating that each existing group 1 furnace is in compliance with the emission limits for a new group 1 furnace.

7.12 Notification of performance tests. In accordance with ARSD 74:36:08:26, pursuant to 40 CFR § 63.9(e) and (f), the owner or operator must provide notification of the anticipated date for conducting performance tests and visible emission observations. The owner or operator must notify the Secretary of the intent to conduct a performance test at least 60 days before the performance test is scheduled; notification of opacity or visible emission observations for a performance test must be provided at least 30 days before the observations are scheduled to take place.

7.13 Notification of compliance status report. In accordance with ARSD 74:36:08:26, as referenced to 40 CFR § 63.1515(b), each owner or operator of an existing affected source must submit a notification of compliance status report within 60 days after March 24, 2003. The notification must be signed by the responsible official who must certify its accuracy. The required information may be submitted in an operating permit application, in an amendment to an operating permit application, in a separate submittal, or in any combination. If an owner or

operator submits the information at different times or in different submittals, later submittals may refer to earlier submittals instead of duplicating and resubmitting the information previously submitted. A complete notification of compliance report must include the following:

1. All information required in 40 CFR § 63.9(h). The owner or operator must provide a complete performance test report for each affected source and emission unit for which a performance test is required. A complete performance test report includes all data, associated measurements, and calculations (including visible emission and opacity tests).
2. Unit labeling as described in permit condition 7.7(2), including process type or furnace classification and operating requirements.
3. The compliant operating parameter value or range established for each affected source or emission unit with supporting documentation and a description of the procedure used to establish the value (e.g., lime injection rate, total reactive chlorine flux injection rate, afterburner operating temperature, fabric filter inlet temperature), including the operating cycle or time period used in the performance test.
4. The operation, maintenance, and monitoring plan (including site-specific monitoring plan for each group 1 furnace with no add-on air pollution control device).
5. Startup, shutdown, and malfunction plan, with revisions.

7.14 Startup, shutdown, and malfunction plan/reports. In accordance with ARSD 74:36:08:26, as referenced to 40 CFR § 63.1516(a), the owner or operator must develop a written plan pursuant to 40 CFR § 63.6(e)(3), that contains specific procedures to be followed for operating and maintaining the source during periods of startup, shutdown, and malfunction, and a program of corrective action for malfunctioning process and air pollution control equipment used to comply with the standard. The owner or operator shall also keep records of each event as require by 40 CFR § 63.10(b) and record and report if an action taken during a startup, shutdown, or malfunction is not consistent with the procedures in the plan and causes the source to exceed any applicable emission limitation in the relevant standard as described in 40 CFR § 63.6(e)(3). In addition, the plan must include:

1. Procedures to determine and record the cause of the malfunction and the time the malfunction began and ended; and
2. Corrective actions to be taken in the event of a malfunction of a process or control device, including procedures for recording the actions taken to correct the malfunction or minimize emissions.

7.15 Excess emissions/summary report. In accordance with ARSD 74:36:08:26, as reference to 40 CFR § 63.1516(b), the owner or operator must submit semiannual reports according to the requirements in 40 CFR § 63.10(e)(3). Except, the owner or operator must submit the semiannual reports within 60 days after the end of each 6-month period instead of within 30 days after the calendar half as specified in 40 CFR § 63.10(e)(3)(v). When no deviations of parameters have occurred, the owner or operator must submit a report stating that

no excess emissions occurred during the reporting period. A report must be submitted if any of these conditions occur during a 6-month reporting period:

1. An excursion of a compliant process or operating parameter value or range (e.g., lime injection rate or screw feeder setting, total reactive chlorine flux injection rate, afterburner operating temperature, fabric filter inlet temperature, definition of acceptable scrap, or other approved operating parameter).
2. An action taken during a startup, shutdown, or malfunction was not consistent with the procedures in the plan as described in 40 CFR § 63.6(e)(3).
3. An affected source (including an emission unit in a secondary aluminum processing unit) was not operated according to the requirements of this chapter.
4. A deviation from the 3-day, 24-hour rolling average emission limit for a secondary aluminum processing unit.
5. Each report must include the following certification as applicable:
 - a. For each in-line fluxer using no reactive flux: “Only nonreactive, non-hazardous air pollutant-containing, non-hazardous air pollutant generating flux gases, agents, or materials were used at any time during this reporting period.”

7.16 Recordkeeping. In accordance with ARSD 74:36:08:26, as referenced to 40 CFR § 63.1517, in addition to the general records required by 40 CFR § 63.10(b), the owner or operator of an affected source (including an emission unit in a secondary aluminum processing unit) must maintain records of the following:

1. For each group 1 furnace (with or without add-on air pollution control devices) or in-line fluxer, records of 15-minute block average weights of gaseous or liquid reactive flux injection, total reactive flux injection rate and calculations (including records of the identity, composition, and weight of each addition of gaseous, liquid or solid reactive flux), including records of any period the rate exceeds the compliant operating parameter value and corrective action taken.
2. For each affected source and emission unit subject to an emission standard in kilogram per megagram (pound per ton) of feed/charge, records of feed/charge (or throughput) weights for each operating cycle or time period used in the performance test.
3. Approved site-specific monitoring plan for a group 1 furnace without add-on air pollution control devices with records documenting conformance with the plan.
4. Records of all charge materials for thermal chip dryer, dross-only furnace, and group 1 melting/holding furnaces without air pollution control devices processing only clean charge.
5. For each in-line fluxer for which the owner or operator has certified that no reactive flux was used:
 - a. Operating logs which establish that no source of reactive flux was present at the in-line fluxer;
 - b. Labels as required in permit condition 7.6(1) which establish that no reactive flux may be used at the in-line fluxer; or

- c. Operating logs which document each flux gas, agent , or material used during each operating cycle.
- 6. Records of monthly inspections for proper unit labeling for each affected source and emission unit subject to labeling requirements.
- 7. Records for any approved alternative monitoring or test procedure.
- 8. Current copy of all required plans, including any revisions, with records documenting conformance with the applicable plan including
 - a. Startup, shutdown, and malfunction plan;
 - b. Operation, maintenance, and monitoring plan; and
 - c. Site-specific secondary aluminum processing unit emission plan (if applicable).
- 9. For each secondary aluminum processing unit, records of total charge weight, or if the owner or operator chooses to comply on the basis of aluminum production, total aluminum produced for each 24-hour period and calculations of 3-day, 24-hour rolling average emissions.

8.0 INITIAL COMPLIANCE – COMPLIANT MATERIAL OPTION

8.1 Demonstrating compliance using compliant materials option. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3941, the owner or operator may choose to use the compliant material option for any individual coating operation, for any group of coating operations, or for all the coating operations in Table #1. The owner or operator must use either the emission rate without add-on controls option or the emission rate with add-on controls option for any coating operation for which the compliant materials option is not used. Initial compliance using the compliant material option is demonstrated if the coating operation or group of coating operations uses no coating with an organic hazardous air pollutant content that exceeds the emission limit in permit condition 6.5, and no thinner and/or other additive, or cleaning material that contains organic hazardous air pollutants. As part of the notification of compliance status required in permit condition 5.10, the owner or operator must identify the coating operation(s) for which the compliant material option was used and submit a statement that the coating operation(s) was (were) in compliance with the emission limitations during the initial compliance period. If the owner or operator chooses to use the compliant material option for any coating operation or group of coating operations for the initial compliance demonstration, the owner or operator must comply with all the permit conditions in this chapter. The owner or operator must conduct a separate initial compliance demonstration for each general use, high performance, magnet wire, rubber-to-metal, and extreme performance fluoropolymer coating operation unless the owner or operator is demonstrating compliance with a predominant activity or facility-specific emission limit as provided in permit condition 6.5. If the predominant activity or facility-specific emission limit alternative is used, the owner or operator must demonstrate that all coating operations included in the predominant activity determination or calculation of the facility-specific emission limit comply with that limit. The owner or operator must use the procedures in this chapter on each coating, thinner and/or other additive, and cleaning material in the condition it is in when it is received from its manufacturer or supplier and prior to any

alteration. The owner or operator does not need to redetermine the organic hazardous air pollutant content of coatings, thinners and/or other additives, and cleaning materials that are reclaimed on-site (or reclaimed off-site if the owner or operator has documentation showing that the exact same materials were received back as were sent off-site) and reused in the coating operation for which the compliant material option was used, provided these materials in their condition as received were demonstrated to comply with the compliant material option.

8.2 Determine mass fraction of organic hazardous air pollutant for each material. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3941(a), the owner or operator shall determine the mass fraction of organic hazardous air pollutant for each coating, thinner and/or other additive, and cleaning material used during the compliance period using one of the following procedures:

1. The owner or operator may test the material in accordance with 40 CFR Part 63, Appendix A, Method 311 to determine the mass fraction of organic hazardous air pollutant. The organic hazardous air pollutant content must be calculated according to the following criteria:
 - a. Include each organic hazardous air pollutant measured to be present at greater than or equal to 0.1 percent by mass for Occupational Safety and Health Administration (OSHA) defined carcinogens as specified in 29 CFR § 1910.1200(d)(4) and greater than or equal to 1.0 percent by mass for other organic hazardous air pollutant compounds. Express the mass fraction of each organic hazardous air pollutant as a value truncated to four places after the decimal point; and
 - b. Calculate the total mass fraction of organic hazardous air pollutant in the test material by adding up the individual organic hazardous air pollutant mass fractions and truncating the result to three places after the decimal point.
2. The owner or operator may use 40 CFR Part 60, Appendix A, Method 24, to determine the mass fraction of nonaqueous volatile matter and use that value as a substitute for the mass fraction of organic hazardous air pollutant. For reactive adhesives in which some of the hazardous air pollutants react to form solids and are not emitted to the atmosphere, the owner or operator may use the alternative method in 40 CFR Part 63, Subpart PPPP, Appendix A, rather than Method 24. Reactive adhesive means adhesive systems composed, in part, of volatile monomers that react during the adhesive curing reaction, and, as a result, do not evolve from the film during use. These volatile components instead become integral parts of the adhesive through chemical reaction. At least 70 percent of the liquid components of the system, excluding water, react during the process. The volatile fraction that is emitted, as measured by the alternative method, may be used as a substitute for the mass fraction of organic hazardous air pollutant.
3. The owner or operator may use an alternative test method for determining the mass fraction of organic hazardous air pollutant after obtaining approval from the Administrator of EPA. The procedure in 40 CFR § 63.7(f) must be used to submit an alternative test method for approval.

4. The owner or operator may use other information than that generated by the methods in (1) through (3) of this permit condition, such as manufacturer's formulation data, if it represents each organic hazardous air pollutant that is present at 0.1 percent by mass or more for OSHA-defined carcinogens as specified in 29 CFR § 1910.1200(d)(4) and at 1.0 percent by mass or more for other compounds. For reactive adhesives in which some of the hazardous air pollutants react to form solids and are not emitted to the atmosphere, the owner or operator may rely on manufacturer's data that expressly states the organic hazardous air pollutant or volatile matter mass fraction emitted. If there is a disagreement between such information and results of a test conducted according to the methods in (1) through (3) of this permit condition, then the test method results will take precedence unless, after consultation the owner or operator can demonstrate to the satisfaction of the Secretary that the formulation data are correct.
5. Solvent blends may be listed as single components for some materials in data provided by manufacturers or suppliers. Solvent blends may contain organic hazardous air pollutants which must be counted toward the total organic hazardous air pollutant mass fraction of the materials. If test data and manufacturer's data for the organic hazardous air pollutant content for solvent blends are not available, the owner or operator may use the default values for the mass fraction organic hazardous air pollutant in solvent blends in Table #4 or #5. Table #5 may be used only if the solvent blends do not match any of the solvent blends given in Table #4 and the only information available is whether the blend is aliphatic or aromatic. If the results of testing using 40 CFR Part 63, Appendix A, Method 311 indicate higher values than those listed on Table #4 or #5, the Method 311 results will take precedence unless, after consultation, the owner or operator can demonstrate to the satisfaction of the Secretary that the formulation data are correct.

Table #4
Default Organic HAP Mass Fraction for Solvents and Solvent Blends

Solvent/Solvent Blend	CAS. No.	Average Organic HAP Mass Fraction	Typical Organic HAP Percent by Mass
Toluene	108-88-3	1.0	Toluene
Xylene(s)	1330-20-7	1.0	Xylenes, ethylbenzene
Hexane	110-54-3	0.5	n-hexane
n-Hexane	110-54-3	1.0	n-hexane
Ethylbenzene	100-41-4	1.0	Ethylbenzene
Aliphatic 140	--	0	None
Aromatic 100	--	0.02	1% xylene, 1% cumene
Aromatic 150	--	0.09	Naphthalene
Aromatic naphtha	64742-95-6	0.02	1% xylene, 1% cumene
Aromatic solvent	64742-94-5	0.1	Naphthalene
Exempt mineral spirits	8032-32-4	0	None
Ligroines (VM&P)	8032-32-4	0	None
Lactol spirits	64742-89-6	0.15	Toluene
Low aromatic white spirits	64742-82-1	0	None
Mineral spirits	64742-88-7	0.01	Xylenes

Solvent/Solvent Blend	CAS. No.	Average Organic HAP Mass Fraction	Typical Organic HAP Percent by Mass
Hydrotreated naphtha	64742-48-9	0	None
Hydrotreated light distillate	64742-47-8	0.001	Toluene
Stoddard solvent	8052-41-3	0.01	Xylenes
Super high-flash naphtha	64742-95-6	0.05	Xylenes
Varsol ® solvent	8052-49-3	0.01	0.5% xylenes, 0.5% ethylbenzene
VM&P naphtha	64742-89-8	0.06	3% toluene, 3% xylene
Petroleum distillate mixture	68477-31-6	0.08	4% naphthalene, 4% biphenyl

Table #5
Default Organic HAP Mass Fraction for Petroleum Solvent Groups

Solvent Type	Average Organic HAP Mass Fraction	Typical Organic HAP Percent by Mass
Aliphatic ¹	0.03	1% xylene, 1% toluene, and 1% ethylbenzene
Aromatic ²	0.06	4% xylene, 1% toluene, and 1% ethylbenzene

¹ – Mineral spirits 135, mineral spirits 150 EC, naphtha, mixed hydrocarbon, aliphatic hydrocarbon, aliphatic naphtha, naphthol spirits, petroleum spirits, petroleum oil, petroleum naphtha, solvent naphtha, and solvent blend; and

² – Medium-flash naphtha, high-flash naphtha, aromatic naphtha, light aromatic naphtha, light aromatic hydrocarbons, aromatic hydrocarbons, and light aromatic solvent.

8.3 Determine the volume fraction of coating solids for each coating. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3941(b), the owner or operator shall determine the volume fraction of coating solids (liters (gallons) of coating solids per liter (gallon) of coating) for each coating used during the compliance period by a test, by information provided by the supplier or manufacturer of the material, or by calculation as specified in one of the following methods:

1. The owner or operator may use ASTM Method D2697-86 (Reapproved 1998) “Standard Test Method for Volume Nonvolatile Matter in Clear or Pigmented Coatings” or ASTM Method D6093-97 (Reapproved 2003) “Standard Test Method for Percent Volume Nonvolatile Matter in Clear or Pigmented Coatings Using a Helium Gas Pycnometer,” to determine the volume fraction of coating solids for each coating. Divide the nonvolatile volume percent obtained with the methods by 100 to calculate volume fraction of coating solids. If the test results obtained using ASTM Method D2697-86 or ASTM Method D6093-97 do not agree with the information obtained from the supplier or manufacturer of the material or the calculation in Equation 8-1, the test results will take precedence unless, after consultation, the owner or operator demonstrates to the satisfaction of the Secretary that the formulation data are correct.
2. The owner or operator may use an alternative test method for determining the solids content of each coating after obtaining the approval of the Administrator of EPA. The procedure in 40 CFR § 63.7(f) must be used to submit an alternative test method for approval.

3. The owner or operator may obtain the volume fraction of coating solids for each coating from the supplier or manufacturer of the material.
4. The owner or operator may use Equation 8-1 to calculate the volume fraction of coating solids.

Equation 8-1 – Calculate the volume fraction coating solids

$$V_s = 1 - \frac{m_{\text{volatiles}}}{D_{\text{avg}}}$$

Where:

- V_s = Volume fraction of coating solids, in liters (gallons) coating solids per liter (gallon) coating;
- $m_{\text{volatiles}}$ = Total volatile matter content of the coating, including hazardous air pollutants, volatile organic compounds (VOC), water, and exempt compounds, determined according to 40 CFR Part 60, Appendix A, Method 24, in grams volatile matter per liter coating; and
- D_{avg} = Average density of volatile matter in the coating, in grams volatile matter per liter volatile matter, determined from test results using ASTM Method D1475-98, “Standard Test Method for Density of Liquid Coatings, Inks, and Related Products,” information from the supplier or manufacturer of the material, or reference sources providing density or specific gravity data for pure materials. If there is disagreement between ASTM Method D1475-98 test results and other information sources, the test results will take precedence unless, after consultation, the owner or operator demonstrates to the satisfaction of the Secretary that the formulation data are correct.

8.4 Determine the density of each coating. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3941(c), the owner or operator shall determine the density of each coating used during the compliance period from test results using ASTM Method D1475-98, “Standard Test Method for Density of Liquid Coatings, Inks, and Related Products,” information from the supplier or manufacturer of the material, or specific gravity data for pure chemicals. If there is disagreement between ASTM D1475-98 test results and the supplier’s or manufacturer’s information, the test results take precedence unless, after consultation the owner or operator demonstrates to Secretary that the formulation data are correct.

8.5 Determine the organic hazardous air pollutant content of each coating. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3941(d), the owner or operator shall calculate the organic hazardous air pollutant content, in kilogram (pound) of organic hazardous air pollutant emitted per liter (gallon) coating solids used, of each coating used during the compliance period using Equation 8-2.

Equation 8-2 – Calculate the organic hazardous air pollutant content of each coating

$$H_c = \frac{(D_c)(W_c)}{V_s}$$

Where:

- H_c = Organic hazardous air pollutant content of the coating, in kilograms (pounds) organic hazardous air pollutant emitted per liter (gallon) coating solids used;
- D_c = Density of coating, in kilograms (pounds) coating per liter (gallon) coating, determined according to the procedure in permit condition 8.4;
- W_c = Mass fraction of organic hazardous air pollutant in the coating, in kilograms organic hazardous air pollutant per kilogram coating, determined according to the procedure in permit condition 8.2.
- V_s = Volume fraction of coating solids, in liters (gallons) coating solids per liter (gallon) coating, determined according to the procedure in permit condition 8.3.

9.0 CONTINUOUS COMPLIANCE USING THE COMPLIANT MATERIALS OPTION

9.1 Demonstrating continuous compliance – compliant materials option. In accordance with 40 CFR § 63.3942, to demonstrate continuous compliance for each compliance period using the compliant materials option, the owner or operator shall meet the following requirements:

1. Use no coating for which the organic hazardous air pollutant content as determined in accordance with Equation 8-2 exceeds the emission limit in permit conditions 6.5, and use no thinner and/or other additive, or cleaning material that contains organic hazardous air pollutant as determined in accordance with the procedure in permit condition 8.2. A compliance period consists of 12 months. Each month after the end of the initial compliance period is the end of a compliance period consisting of that month and the preceding 11 months. If a facility-specific emission limit as given in permit condition 6.5 paragraph (6) is used to comply, the owner or operator must also perform the calculation using Equation 6-1 on a monthly basis using the data from the previous 12 months of operation;
2. The use of any coating that exceeds the emission limits in permit condition 6.5, and/or the use of any thinner and/or additive or cleaning material that contains organic hazardous air pollutants is a deviation from the emission limit for the compliance period that must be reported in the initial notification required in permit condition 5.10 and in the semiannual compliance report specified in permit condition 5.11;
3. The owner or operator must identify the coating operation(s) for which the compliant materials option was used in each semiannual report. If there were no deviations from the emission limitations, include a statement that the coating operations(s) was (were) in compliance with the emission limitations during the reporting period because no coating was used for which the organic hazardous air pollutant exceeded the emission limits in permit condition 6.5, and no thinner and/or other additive, or cleaning material was used that

contained organic hazardous air pollutants as determined in accordance with the procedure in permit condition 8.2; and

4. The owner or operator must maintain the records specified in permit condition 5.5.

10.0 INITIAL COMPLIANCE – EMISSION RATE WITHOUT ADD-ON CONTROLS OPTION

10.1 Demonstrating compliance – emission rate without add-on controls option. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3951, the owner or operator may choose to use the emission rate without add-on controls option for any individual coating operation, for any group of coating operations in the affected source, or for all the coating operations in Table #1. Initial compliance using the emission rate without add-on controls option is demonstrated if the coating operation or group of coating operations meets the organic hazardous air pollutant emission rate in permit condition 6.5. As part of the notification of compliance status required in permit condition 5.10, the owner or operator must identify the coating operation(s) for which the emission rate without add-on controls option was used and submit a statement that the coating operation(s) was (were) in compliance with the emission limitations during the initial compliance period. The owner or operator must conduct a separate initial compliance demonstration for each general use, magnet wire, rubber-to-metal, and extreme performance fluoropolymer coating operation unless the owner or operator is demonstrating compliance with a predominant activity or facility-specific emission limit as provided in permit condition 6.5. If the predominant activity or facility-specific emission limit alternative is used, the owner or operator must demonstrate that all coating operations included in the predominant activity determination or calculation of the facility-specific emission limit comply with that limit. If the owner or operator chooses to use the emission rate without add-on controls option for any coating operation or group of coating operations for the initial compliance demonstration, the owner or operator must comply with all the permit conditions in this chapter. When calculating the organic hazardous air pollutant emission rate according to Chapter 10.0, the owner or operator shall not include any coatings, thinners and/or other additives, or cleaning materials used on coating operations for which the owner or operator used the compliant material option or the emission rate with add-on controls option for demonstrating compliance. The owner or operator does not need to redetermine the organic hazardous air pollutant content of coatings, thinners and/or other additives, and cleaning materials that are reclaimed on-site (or reclaimed off-site if the owner or operator has documentation showing that the exact same materials were received back as were sent off-site) and reused in the coating operation for which the emission rate without add-on controls option was used. If coatings, thinners and/or other additives have been reclaimed on-site, the amount of each used in a month may be reduced by the amount of each that is reclaimed. That is, the amount used, may be calculated as the amount consumed to account for materials that are reclaimed.

10.2 Determine mass fraction of organic hazardous air pollutant. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3951(a), the owner or operator shall determine the mass fraction of organic hazardous air pollutant for each coating, thinner and/or other additive, and cleaning material used during each month in accordance with the procedure in permit condition 8.2.

10.3 Determine the volume fraction of coating solids. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3951(b), the owner or operator shall determine the volume fraction of coating solids (liters (gallons) of coating solids per liter (gallon) of coating) for each coating used during each month in accordance with the procedure in permit condition 8.3.

10.4 Determine the density of each material. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3951(c), the owner or operator shall determine the density of each liquid coating, thinner and/or other additive, and cleaning material used during each month from test results using ASTM Method D1475-98, “Standard Test Method for Density of Liquid Coating, Inks, and Related Products,” information from the supplier or manufacturer of the material, or reference sources providing density or specific gravity data for pure materials. If powder coatings are included in the compliance determination, determine the density of powder coatings using ASTM Method D5965-02, “Standard Test Methods for Specific Gravity of Coating Powders,” or information from the supplier. If there is disagreement between ASTM Method D1475-98 or ASTM Method D5965-02 test results and other such information sources, the test results will take precedence, unless after consultation the owner or operator demonstrates to the satisfaction of the Secretary that the formulation data are correct. If materials are purchased or consumption is monitored by weight instead of volume, the density of each material used does not have to be determined. Instead, the material weight may be used in place of the combined terms for density and volume in Equations 10-2, 10-3, 10-4, and 10-5.

10.5 Determine the volume of each material used. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3951(d), the owner or operator shall determine the volume (liters) of each coating, thinner and/or other additive, and cleaning material used during each month by measurement or usage records. If materials are purchased or consumption is monitored by weight instead of volume, the volume of each material used does not have to be determined. Instead, the material weight may be used in place of the combined terms for density and volume in Equations 10-2, 10-3, and 10-4.

10.6 Calculate the mass of organic hazardous air pollutant emissions. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3951(e), the mass of organic hazardous air pollutant emissions is the combined mass of organic hazardous air pollutants contained in all coatings, thinners and/or other additives, and cleaning materials used during each month minus the organic hazardous air pollutants in certain waste materials. The owner or operator shall calculate the mass of organic hazardous air pollutant emissions using Equation 10-1.

Equation 10-1 – Calculate the mass of organic hazardous air pollutant emissions

$$H_e = A + B + C - R_w$$

Where

- H_e = Total mass of organic hazardous air pollutant emissions during the month, kilograms;
- A = Total mass of organic hazardous air pollutant in the coatings used during the month, kilograms, as calculated using Equation 10-2;
- B = Total mass of organic hazardous air pollutant in the thinners and/or other additives used during the month, kilograms, as calculated using Equation 10-3;
- C = Total mass of organic hazardous air pollutant in the cleaning materials used during the month, kilograms, as calculated using Equation 10-4; and
- R_w = Total mass of organic hazardous air pollutant in waste materials sent or designated for shipment to a hazardous waste treatment, storage, and disposal facility for treatment or disposal during the month, kilograms, determined according to the procedure in permit condition 10.7.

Equation 10-2 – Calculate total mass of organic hazardous air pollutant in coatings used during the month

$$A = \sum_{i=1}^m (Vol_{c,i}) (D_{c,i}) (W_{c,i})$$

Where:

- A = Total mass of organic hazardous air pollutant in the coatings used during the month, kilograms;
- $Vol_{c,i}$ = Total volume of coating, i , used during the month, liters;
- $D_{c,i}$ = Density of coating, i , kilograms coating per liter coating;
- $W_{c,i}$ = Mass fraction of organic hazardous air pollutant in coating, i , kilogram organic hazardous air pollutant per kilogram coating. For reactive adhesives, determine the mass fraction of organic hazardous air pollutant emitted according to the method in 40 CFR Part 63, Subpart PPPP, Appendix A; and
- m = Number of different coatings used during the month.

Equation 10-3 – Calculate the total mass of organic hazardous air pollutants in the thinners and/or other additives used during the month

$$B = \sum_{j=1}^n (Vol_{t,j}) (D_{t,j}) (W_{t,j})$$

Where:

- B = Total mass of organic hazardous air pollutant in the thinners and/or other additives used during the month, kilograms;
- Vol_{t,j} = Total volume of thinner and/or other additive, j, used during the month, liters;
- D_{t,j} = Density of thinner and/or other additive, j, kilograms per liter;
- W_{t,j} = Mass fraction of organic hazardous air pollutant in thinner and/or other additive, j, kilograms organic hazardous air pollutant per kilogram thinner and/or other additive. For reactive adhesives, determine the mass fraction of organic hazardous air pollutant emitted according to the method in 40 CFR Part 63, Subpart PPPP, Appendix A; and
- n = Number of different thinners and/or other additives used during the month.

Equation 10-4 – Calculate the total mass of organic hazardous air pollutants in the cleaning materials used during the month

$$C = \sum_{k=1}^p (Vol_{s,k}) (D_{s,k}) (W_{s,k})$$

Where:

- C = Total mass of organic hazardous air pollutant in the cleaning materials used during the month, kilograms;
- Vol_{s,k} = Total volume of cleaning material, k, used during the month, liters;
- D_{s,k} = Density of cleaning material, k, kilograms per liter;
- W_{s,k} = Mass fraction of organic hazardous air pollutant in cleaning material, k, kilograms organic hazardous air pollutant per kilogram material; and
- p = Number of different cleaning materials used during the month.

The organic hazardous air pollutant emission rate for the initial compliance period calculated using Equation 10-6 must be less than or equal to the applicable emission limit for each subcategory in permit condition 6.5 paragraphs (1) through (5) or the predominant activity in permit condition 6.5 paragraph (6) or facility-specific emission limit allowed in permit condition 6.5 paragraph (7).

10.7 Determine the mass of organic hazardous air pollutant in waste material. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3951(e)(4), if the owner or operator chooses to account for the mass of organic hazardous air pollutants contained in waste materials sent or designated for shipment to a hazardous waste treatment, storage, and disposal facility in Equation 10-1, the owner or operator must determine the mass using the following procedure:

1. Include only waste materials in the determination that are generated by the coating operations identified in Table #1 for which Equation 10-1 is used to calculate the mass of organic hazardous air pollutant emissions and that will be treated or disposed of by a facility

that is regulated as a treatment, storage, and disposal facility under 40 CFR Part 262, 264, 265, or 266. The treatment, storage, and disposal facility may be either off-site or on-site. Organic hazardous air pollutants contained in wastewater may not be included;

2. Determine either the amount of the waste materials sent to a treatment, storage, and disposal facility during the month or the amount collected and stored during the month and designated for future transport to a treatment, storage, and disposal facility. Any waste materials sent to a treatment, storage, and disposal facility during a month that have already been included in the amount collected and stored during that month or a previous month should not be included in the determination;
3. Determine the total mass of organic hazardous air pollutants contained in the waste materials specified in paragraph 2 of this permit condition; and
4. Document the methodology used to determine the amount of waste materials and the total mass of organic hazardous air pollutants they contain, in accordance with permit condition 5.6. If the waste manifests include this information, they may be used as part of the documentation of the amount of waste materials and the mass of organic hazardous air pollutants contained in them.

10.8 Determine the total volume of coating solids used. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3951(f), the owner or operator shall calculate the total volume of coating solids used, in liters, which is the combined volume of coating solids for all the coatings used during each month, using Equation 10-5.

Equation 10-5 – Calculate the total volume of coating solids used during the month

$$V_{st} = \sum_{i=1}^m (Vol_{c,i}) (V_{s,i})$$

Where:

- V_{st} = Total volume of coating solids used during the month, liters;
- $Vol_{c,i}$ = Total volume of coating, i, used during the month, liters;
- $V_{s,i}$ = Volume fraction of coating solids for coating, i, liter solids per liter coating, determined in accordance with permit condition 8.3; and
- m = Number of coatings used during the month.

10.9 Determine the organic hazardous air pollutant emission rate. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3951(g), the owner or operator shall calculate the organic hazardous air pollutant emission rate for the compliance period, in kilograms (pounds) organic hazardous air pollutant emitted per liter (gallon) coating solids used, using Equation 10-6.

Equation 10-6 – Calculate the average organic hazardous emission rate for the compliance period

$$H_{yr} = \frac{\sum_{y=1}^n H_e}{\sum_{y=1}^n V_{st}}$$

Where:

- H_{yr} = Average organic hazardous air pollutant emission rate for the compliance period, kilograms organic hazardous air pollutant emitted per liter coating solids used;
- H_e = Total mass of organic hazardous air pollutant emissions from all materials used during month, y, kilograms, as calculated using Equation 10-1;
- V_{st} = Total volume of coating solids used during month, y, liters, as calculated using Equation 10-5;
- y = Identifier for months; and
- n = Number of full or partial months in the compliance period (for the initial compliance period, n equals 12 if the compliance date falls on the first day of a month; otherwise n equals 13; for all following compliance periods, n equals 12).

11.0 CONTINUOUS COMPLIANCE USING THE EMISSION RATE WITHOUT ADD-ON CONTROLS OPTIONS

11.1 Continuous compliance using the emission rate without add-on controls option. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3952, if the owner or operator demonstrates compliance using the emission rate without add-on controls option, the owner or operator shall demonstrate continuous compliance with the emission limits in permit condition 6.5 as follows:

1. Determine the organic hazardous air pollutant emission rate for each compliance period in accordance with the procedures in Chapter 10.0. A compliance period consists of 12 months. Each month after the end of the initial compliance period is the end of a compliance period consisting of that month and the preceding 11 months. The owner or operator must perform the calculations in Chapter 10.0 on a monthly basis using data from the previous 12 months of operation. If a facility-specific emission limit as given in permit condition 6.5 paragraph (7) is used to comply, the owner or operator must also perform the calculation using Equation 6-1 on a monthly basis using the data from the previous 12 months of operation;
2. If the organic hazardous air pollutant emission rate for any 12-month compliance period exceeds the emission limits in permit condition 6.5, this is a deviation from the emission limit for that compliance period that must be reported in the initial notification required in permit condition 5.10 and in the semiannual compliance report specified in permit condition 5.11;

3. In each semiannual report, identify the coating operation(s) for which the emission rate without add-on controls option was used. If there were no deviations from the emission limitations, include a statement that the coating operations(s) was (were) in compliance with the emission limitations during the reporting period because the organic hazardous air pollutant emission rate for each compliance period was less than or equal to the emission limits in permit condition 6.5 as determined according to procedure in Chapter 10.0; and
4. The owner or operator must maintain the records specified in permit conditions 5.5, 5.6, and 5.7.

12.0 INITIAL COMPLIANCE – EMISSION RATE WITH ADD-ON CONTROLS OPTION

12.1 Demonstrating compliance – emission rate with add-on controls option. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3961, the owner or operator may use the emission rate with add-on controls option for any coating operation, for any group of coating operations, or for all of the coating operations in Table #1. The owner or operator may include both controlled and uncontrolled coating operations in a group for which the emission rate with add-on controls option is used. The owner or operator must use either the compliant material option or the emission rate without add-on controls option for any coating operation for which the emission rate with add-on controls is not used. Initial compliance using the emission rate with add-on controls option is demonstrated if the coating operation or group of coating operations meets the organic hazardous air pollutant emission rate in permit condition 6.5, the operating limits in permit condition 6.6, and the work practice standards in permit condition 16.2. The owner or operator must conduct a separate initial compliance demonstration for each general use, magnet wire, rubber-to-metal, and extreme performance fluoropolymer coating operation unless the owner or operator is demonstrating compliance with a predominant activity or facility-specific emission limit as provided in permit condition 6.5 paragraph (6) or (7). If the predominant activity or facility-specific emission limit alternative is used, the owner or operator must demonstrate that all coating operations included in the predominant activity determination or calculation of the facility-specific emission limit comply with that limit. If the owner or operator chooses to use the emission rate with add-on controls option for any coating operation or group of coating operations for the initial organic hazardous air pollutant emission rate compliance demonstration, the owner or operator must comply with all the permit conditions in this chapter.

When calculating the organic hazardous air pollutant emission rate in accordance with the provisions of this chapter, do not include any coatings, thinners and/or other additives, or cleaning materials used on coating operations for which the compliant material option or the emission rate without add-on controls option is used. The mass of organic hazardous air pollutants does not have to be redetermined for coatings, thinners and/or other additives, or cleaning materials that have been reclaimed on-site (or reclaimed off-site if the owner or operator has documentation that the exact same materials were received back as were sent off-

site) and reused in the coatings operation(s) for which the emission rate with add-on controls option is used. If coatings, thinners and/or other additives, or cleaning materials that have been reclaimed on-site are used, the amount of each used in a month may be reduced by the amount of each that is reclaimed. That is, the amount used may be calculated as the amount consumed to account for the materials that are reclaimed.

The owner or operator must establish and demonstrate continuous compliance during the initial compliance period with the operating limits required in permit condition 6.6, using the procedures specified in permit conditions 13.2 and 16.4.

The owner or operator must develop, implement, and document implementation of the work practice plan required in permit condition 16.2 during the initial compliance period, as specified in permit condition 5.7.

12.2 Determine mass fraction of organic hazardous air pollutants, density, volume used, and volume fraction of coating solids. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR 63.3961(e), the owner or operator shall use the procedures in permit conditions 10.2, 10.3, 10.4, and 10.5 to determine the mass fraction of organic hazardous air pollutants, density, and volume of each coating, thinner and/or other additive, and cleaning material used during each month; and the volume fraction of coating solids for each coating used during each month.

12.3 Calculate total mass of organic hazardous air pollutant emissions before add-on controls. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR 63.3961(f), the owner or operator shall use Equation 10-1 in permit condition 10.6 to calculate the total mass of organic hazardous air pollutant emissions before add-on controls from all coatings, thinners and/or other additives, and cleaning materials used during each month in the coating operation or group of coating operations for which the emissions rate with add-on controls option is used.

12.4 Calculate organic hazardous air pollutant emission reduction for each controlled coating operation. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR 63.3961(g), the owner or operator shall determine the mass of organic hazardous air pollutant emissions reduced for each controlled coating operation during each month. The emission reduction determination quantifies the total organic hazardous air pollutant emissions that pass through the emission capture system and are destroyed or removed by the add-on control device. The owner or operator shall use the procedures in permit condition 12.5 to calculate the mass of organic hazardous air pollutant emission reduction for each controlled coating operation using an emission capture system and add-on control device other than a solvent recovery system for which a liquid-liquid material balance is conducted.

12.5 Calculate the organic hazardous air pollutant emission reduction for each controlled coating operation not using liquid-liquid material balance. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR 63.3961(h), the owner or operator shall calculate the organic hazardous air pollutant emission reduction for each controlled coating operation

using an emission capture system and add-on control device other than a solvent recovery system for which a liquid-liquid material balance is conducted using Equation 12-1. The calculation applies the emission capture system efficiency and add-on control device efficiency to the mass of organic hazardous air pollutants contained in the coatings, thinners and/or other additives, and cleaning materials that are used in the coating operation served by the emission capture system and add-on control device during each month. The owner or operator must assume zero efficiency for the emission capture system and add-on control device for any period of time a deviation specified in permit condition 16.1(4) or 16.1(5) occurs in the controlled coating operation, including a deviation during a period of startup, shutdown, or malfunction unless the owner or operator has other data indicating the actual efficiency of the emission capture system and add-on control device and the use of these data is approved by the Administrator. Equation 12-1 treats the materials used during as a deviation as if they were used on an uncontrolled coating operation for the time period of the deviation.

Equation 12-1 – Calculate the organic hazardous air pollutant emission reduction for each controlled coating operation not using liquid-liquid material balance

$$H_C = (A_C + B_C + C_C - R_W - H_{UNC}) \left(\frac{CE}{100} \times \frac{DRE}{100} \right)$$

Where:

- H_C = Mass of organic hazardous air pollutant emission reduction for the controlled coating operation during the month, kilograms;
- A_C = Total mass of organic hazardous air pollutant in the coating used in the controlled coating operation during the month, kilograms, as calculated using Equation 12-2;
- B_C = Total mass of organic hazardous air pollutants in the thinners and/or other additives used in the controlled coating operation during the month, kilograms, as calculated using Equation 12-3;
- C_C = Total mass of organic hazardous air pollutants in the cleaning materials used in the controlled coating operation during the month, kilograms, as calculated using Equation 12-4;
- R_W = Total mass of organic hazardous air pollutants in waste materials sent or designated for shipment to a hazardous waste treatment, storage, and disposal facility for treatment or disposal during the compliance period, determined according to the procedure in permit condition 10.7. (Assign a value of zero to R_W if this allowance is not used);
- H_{UNC} = Total mass of organic hazardous air pollutants in the coatings, thinners, and/or other additives, and cleaning materials used during all deviations specified in permit conditions 16.1(4) and 16.1(5) that occurred during the month in the controlled coating operation, kilograms, as calculated using Equation 12-5;
- CE = Capture efficiency of the emission capture system vented to the add-on control device, percent. Use the test methods and procedures in permit condition 13.1 and

Chapter 14.0 to measure and record the organic hazardous air pollutant destruction or removal efficiency; and

- DRE = Organic hazardous air pollutant destruction or removal efficiency of the add-on control device, percent. Use the test methods and procedures in permit condition 13.1 and Chapter 15.0 to measure and record the organic hazardous air pollutant destruction or removal efficiency.

Equation 12-2 – Calculate the mass of organic hazardous air pollutants in the coatings used in the controlled coating operation

$$A_C = \sum_{i=1}^m (Vol_{c,i})(D_{c,i})(W_{c,i})$$

Where:

- A_C = Total mass of organic hazardous air pollutants in the coatings used in the controlled coating operation during the month, kilograms;
- $Vol_{c,i}$ = Total volume of coating, i, used during the month, liters;
- $D_{c,i}$ = Density of coating, i, kilogram per liter;
- $W_{c,i}$ = Mass fraction of organic hazardous air pollutant in coating i, kilogram per kilogram. For reactive adhesives determine the mass fraction of organic hazardous air pollutants emitted according to the method in 40 CFR Part 63, Subpart PPPP, Appendix A ; and
- m = Number of different coatings used.

Equation 12-3 – Calculate the mass of organic hazardous air pollutants in the thinners and/or other additives used in the controlled coating operation

$$B_C = \sum_{j=1}^n (Vol_{t,j})(D_{t,j})(W_{t,j})$$

Where:

- B_C = Total mass of organic hazardous air pollutants in the thinners and/or other additives used in the controlled coating operation during the month, kilograms;;
- $Vol_{t,j}$ = Total volume of thinner and/or other additive, j, used during the month, liters;
- $D_{t,j}$ = Density of thinner and/or other additive j, kilogram per liter;
- $W_{t,j}$ = Mass fraction of organic hazardous air pollutant in thinner and/or other additive, j, kilogram per kilogram. For reactive adhesives determine the mass fraction of organic hazardous air pollutants emitted according to the method in 40 CFR Part 63, Subpart PPPP, Appendix A ; and

- n = Number of different thinners and/or other additives used.

Equation 12-4 – Calculate the mass of organic hazardous air pollutants in the cleaning materials used in the controlled coating operation during the month

$$C_C = \sum_{k=1}^p (Vol_{s,k})(D_{s,k})(W_{s,k})$$

Where:

- C_C = Total mass of organic hazardous air pollutants in the cleaning materials used in the controlled coating operation during the month, kilograms;
- $Vol_{s,k}$ = Total volume of cleaning material, k, used during the month, liters;
- $D_{s,k}$ = Density of cleaning material, k, kilogram per liter;
- $W_{s,k}$ = Mass fraction of organic hazardous air pollutant in cleaning material, k, kilogram per kilogram; and
- p = Number of different cleaning materials used.

Equation 12-5 – Calculate the mass of organic hazardous air pollutants in the coatings, thinners and/or other additives, and cleaning materials used in the controlled coating operation during deviations

$$H_{UNC} = \sum_{h=1}^q (Vol_h)(D_h)(W_h)$$

Where:

- H_{UNC} = Total mass of organic hazardous air pollutants in the coatings, thinners and/or other additives, and cleaning materials used during all deviations specified in permit conditions 16.1(4) and 16.1(5) that occurred during the month in the controlled coating operation, kilograms;
- Vol_h = Total volume of coating, thinner and/or other additive, or cleaning material, h, used in the controlled coating operation during deviations, liters;
- D_h = Density of coating, thinner and/or other additives, or cleaning material, h, kilogram per liter;
- W_h = Mass fraction of organic hazardous air pollutant in coating, thinner and/or other additives, or cleaning material, h, kilogram organic hazardous air pollutant per kilogram coating. For reactive adhesives use the mass fraction of organic hazardous air pollutant emitted as determined using the method in 40 CFR Part 63, subpart PPPP, Appendix A; and
- q = Number of different coatings, thinners and or other additives, and cleaning materials used.

12.6 Calculate the total volume of coating solids used. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3961(k), the owner or operator shall determine the total volume of coating solids used in liters, which is the combined volume of coating solids for all the coatings used during each month in the coating operation or group of coating operations for which the emission rate with add-on controls option is used, using Equation 10-5 of permit condition 10.8.

12.7 Calculate the mass of organic hazardous air pollutant emissions for each month. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3961(l), the owner or operator shall determine the mass of organic hazardous air pollutant emissions, in kilograms, during each month using Equation 12-6.

Equation 12-6 – Calculate the mass of organic hazardous air pollutant emissions for each month

$$H_{HAP} = H_e - \sum_{i=1}^q (H_{c,i})$$

Where:

- H_{HAP} = Total mass of organic hazardous air pollutants for the month, kilograms;
- H_e = Total mass of organic hazardous air pollutant emissions before add-on controls from all the coatings, thinners and/or other additives, and cleaning materials used during the month, kilograms, determined in accordance with permit condition 12.3;
- $H_{c,i}$ = Total mass of organic hazardous air pollutant emission reduction for controlled coating operating, i, not using a liquid-liquid material balance, during the month, kilograms, from Equation 12-1; and
- q = Number of controlled coating operations not controlled by a solvent recovery system using a liquid-liquid material balance.

12.8 Calculate the organic hazardous air pollutant emission rate. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3961(m), the owner or operator shall determine the organic hazardous air pollutant emission rate for the compliance period, in kilograms (pounds) of organic hazardous air pollutant emitted per liter (gallon) coating solids used, using Equation 12-7.

Equation 12-7 – Calculate the organic hazardous air pollutant emission rate for the compliance period

$$H_{\text{annual}} = \frac{\sum_{y=1}^n H_{\text{HAP},y}}{\sum_{y=1}^n V_{\text{st},y}}$$

Where:

- H_{annual} = Organic hazardous air pollutant emission rate for the compliance period, kilogram organic hazardous air pollutant emitted per liter coating solids used;
- $H_{\text{HAP},y}$ = Organic hazardous emissions for month y , kilogram, determined in accordance with Equation 12-6;
- $V_{\text{st},y}$ = Total volume of coating solids used during month, y , liters, from Equation 10-5 in permit condition 10.8;
- y = identifier for months; and
- n = Number of full or partial months in the compliance period (for the initial compliance period, n equals 12 if the compliance date falls on the first day of a month; otherwise n equals 13; for all following compliance periods, n equals 12).

12.9 Initial compliance demonstration. To demonstrate compliance with the emission rate with add-on controls option, the organic hazardous air pollutant emission rate for the initial compliance period, calculated using Equation 12-7 in permit condition 12.8, must be less than or equal to the applicable emission limit in permit condition 6.5 paragraphs (1) through (5) or the predominant activity in permit condition 6.5 paragraph (6) or facility-specific emission limit allowed in permit condition 6.5 paragraph (7). The owner or operator must keep all records as required in permit conditions 5.1, 5.5, 5.6, and 5.7. As part of the notification of compliance status required in permit condition 5.10, the owner or operator must identify the coating operation(s) for which the emission rate with add-on controls option was used and submit a statement that the coating operation(s) was (were) in compliance with the emission limitations during the initial compliance period because the organic hazardous air pollutant emission rate was less than or equal to the applicable emission limit in permit condition 6.5, and achieved the operating limits required in permit condition 6.6 and the work practice standards required in permit condition 16.2.

1. All emission capture systems, add-on control devices, and continuous monitoring systems must be installed and operating no later than January 2, 2007. The owner or operator must conduct a performance test of each capture system according to the procedures in permit condition 13.1 and Chapters 14.0 and 15.0, and establish the operating limits required in permit condition 6.6 no later than January 2, 2007.
2. The owner or operator must develop and begin implementing the work practice plan required in permit condition 16.2 no later than January 2, 2007.
3. The owner or operator must complete the initial compliance demonstration for the initial compliance period according to the requirements of this chapter. The owner or operator must determine the mass of organic hazardous air pollutant emissions and volume of coatings

solids used each month and then calculate an organic hazardous air pollutant emission rate at the end of the initial compliance period. The initial compliance demonstration includes the results of emission capture system and add-on control device performance tests conducted according to permit condition 13.1 and Chapters 14.0 and 15.0, calculations according to the requirements in permit conditions 12.1 through 12.8 and supporting documentation showing that during the initial compliance period the organic hazardous air pollutant emission rate was equal to or less than the applicable emission limit in permit condition 6.5, the operating limits established during the performance tests and the results of the continuous parameter monitoring required in permit condition 16.4; and documentation of whether the work practice plan required in permit condition 16.2 was developed and implemented.

- a. The owner or operator is not required to conduct an initial performance test to determine capture efficiency or destruction efficiency of a capture system or control device if the owner or operator receives approval to use the results of a performance test that was previously conducted on the capture system or control device. Any such previous tests must meet the following conditions:
 - i. The previous test must have been conducted using the methods and conditions specified in this permit.
 - ii. Either no process or equipment changes have been made since the previous test was performed or the owner or operator must be able to demonstrate that the results of the performance test reliably demonstrate compliance despite process or equipment changes.
 - iii. Either the required operating parameters were established in the previous test or sufficient data were collected in the previous test to establish the required operating parameters.

13.0 PERFORMANCE TESTS – EMISSIONS CAPTURE SYSTEM AND ADD-ON CONTROL DEVICE

13.1 Performance test requirements. The owner or operator must conduct each performance test required in permit condition 12.9 in accordance with ARSD 74:36:08:03, as referenced to 40 CFR § 63.3964, according to the requirements in 40 CFR § 63.7(e)(1) and under the provisions of this condition, unless the owner or operator obtains a waiver of the performance test according to the provisions in 40 CFR § 63.7(h).

1. *Representative coating operation operating conditions.* The owner or operator must conduct the performance test under representative operating conditions for the coating operation. Operations during periods of startup, shutdown, or malfunction and during periods of nonoperation do not constitute representative conditions. The owner or operator must record the process information that is necessary to document operating conditions during the test and explain why the conditions represent normal operation.

2. *Representative emission capture system and add-on control device operating conditions.* The owner or operator must conduct the performance test when the emission capture system and add-on control device are operating at a representative flow rate, and the add-on control device is operating at a representative inlet concentration. The owner or operator must record information necessary to document emission capture system and add-on control device operating conditions during the test and explain why the conditions represent normal operation. Each performance test of an emission capture system must be conducted according to the requirements in Chapter 14.0. Each performance test of an add-on control device must be conducted according to the requirements in Chapter 15.0.

13.2 Emission capture system and add-on control device operating limits. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3967, during the performance test required in permit condition 12.9, as referenced to 40 CFR §§ 63.3964, 63.3965, and 63.3966, the owner or operator must establish the operating limits in permit condition 6.6 as specified below, unless the owner or operating has received approval for alternative monitoring and operating limits under 40 CFR § 63.8(f).

1. For a thermal oxidizer, the owner or operator shall monitor and record the combustion temperature at least once every 15 minutes during each of the three test runs during the performance test. The temperature must be monitored in the firebox of the thermal oxidizer or immediately downstream of the firebox before any substantial heat exchange occurs. Use the data collected during the performance test to calculate and record the average combustion temperature maintained during the performance test. This average combustion temperature is the minimum operating limit for the thermal oxidizer.
2. For each capture device that is not part of a permanent total enclosure that meets the criteria in permit condition 14.1(1), establish an operating limit for either the gas volumetric flow rate or duct static pressure as specified below:
 - a. During the capture efficiency determination pursuant to permit condition 12.9 and as given in permit condition 14.1(2), the owner or operator shall monitor and record either the gas volumetric flow rate or the duct static pressure for each separate capture device in the emission capture system at least once every 15 minutes during each of the three test runs at a point in the duct between the capture device and the add-on control device inlet. Calculate and record the average gas volumetric flow rate or duct static pressure for the three test runs for each capture device. This average gas volumetric flow rate or duct static pressure is the minimum operating limit for that specific capture device.

14.0 EMISSION CAPTURE SYSTEM EFFICIENCY PERFORMANCE TEST

14.1 Capture system efficiency test procedures. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3965, the owner or operator must use the following test methods and procedures to determine capture efficiency:

1. The owner or operator may assume the capture system efficiency is 100 percent if both the conditions in (a) and (b) are met:
 - a. The capture system meets the criteria in Method 204 of Appendix M to 40 CFR Part 51 for a permanent total enclosure and directs all the exhaust gases from the enclosure to an add-on control device; and
 - b. All coatings, thinners and/or other additives, and cleaning materials in the coating operation are applied within the capture system; coating solvent flash-off, curing, and drying occurs within the capture system; and the removal or evaporation of cleaning materials from the surfaces they are applied to occurs within the capture system. For example, this criterion is not met if parts enter the open shop environment when moved between a spray booth and a curing oven.
2. If the capture system does not meet both the criteria in paragraph (1), the owner or operator must use one of the three protocols given below to measure capture efficiency. The capture efficiency measurements use total volatile hydrocarbon capture efficiency as a surrogate for organic hazardous air pollutant capture efficiency. For the protocols in (a) and (b) below, the capture efficiency measurement must consist of three test runs. Each test run must be at least 3 hours duration or the length of a production run, whichever is longer, up to 8 hours. For the purposes of this test, a production run means the time required for a single part to go from the beginning to the end of the production, which includes surface preparation activities and drying and curing time.
 - a. Use the liquid-to-uncaptured-gas protocol using a temporary total enclosure or building enclosure given in permit condition 14.2.
 - b. Use the gas-to-gas protocol using a temporary total enclosure or building enclosure given in permit condition 14.3.
 - c. As an alternative to the procedures specified in (a) and (b) above and subject to the approval of the Administrator of the EPA, the owner or operator may determine capture efficiency using any other capture efficiency protocol and test methods that satisfy the criteria of either the data quality objective or the lower confidence level approach as described in Appendix A of 40 CFR Part 63, Subpart KK.

14.2 Determining capture efficiency – liquid-to-uncaptured-gas protocol. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3965(c), use the procedures in paragraphs (1) through (6) to determine the capture system efficiency using the liquid-to-uncaptured-gas protocol using a temporary total enclosure or a building enclosure. The liquid-to-uncaptured-gas protocol compares the mass of liquid total volatile hydrocarbon in materials used in the coating operation to the mass of total volatile hydrocarbon emission not captured by the emission capture system.

1. Either use a building enclosure or construct an enclosure around the coating operation where coatings, thinners and/or other additives, and cleaning materials are applied, and all areas where emissions from these applied coatings and materials subsequently occur, such as flash-off, curing, and drying areas. The areas of the coating operation where capture devices

collect emissions for routing to an add-on control device, such as the entrance and exit areas of an oven or spray booth, must also be inside the enclosure. The enclosure must meet the applicable definition of a temporary total enclosure or building enclosure in Method 204 of Appendix M to 40 CFR Part 51.

2. Use Method 204A or 204F of Appendix M to 40 CFR Part 51 to determine the mass fraction of total volatile hydrocarbon liquid input from each coating, thinner and/or other additive, and cleaning material used in the coating operation during each capture efficiency test run. To make the determination, substitute total volatile hydrocarbon for each occurrence of the term volatile organic compound in the methods.
3. Determine the total mass of total volatile hydrocarbon liquid input from all the coatings, thinners and/or other additives, and cleaning materials used in the coating operation during each capture efficiency test run using Equation 14-1.

Equation 14-1 – Calculate the total mass of volatile hydrocarbon liquid input

$$TVH_{used} = \sum_{i=1}^n (TVH_i)(Vol_i)(D_i)$$

Where:

- TVH_{used} = Mass of liquid total volatile hydrocarbon in materials used in the coating operation during the capture efficiency test run, kilograms;
 - TVH_i = Mass fraction of total volatile hydrocarbon in coating, thinner and/or other additive, or cleaning material, i, that is used in the coating operation during the capture efficiency test run, kilogram total volatile hydrocarbon per kilogram material;
 - Vol_i = Total volume of coating, thinner and/or other additive, or cleaning material, i, used in the coating operation during the capture efficiency test run, liters;
 - D_i = Density of coating, thinner and/or other additive, or cleaning material, i, kilogram material per liter material; and
 - n = Number of different coatings, thinners and/or other additives, and cleaning materials used in the coating operation during the capture efficiency test run.
4. Use Method 204 D or 204 E of Appendix M to 40 CFR Part 51 to measure the total mass, kilograms, of total volatile hydrocarbon emissions that are not captured by the emission capture system. These emissions are measured as they exit the temporary total enclosure or building enclosure during each capture efficiency test run. To make the measurement, substitute total volatile hydrocarbon for each occurrence of the term volatile organic compound in the methods. Use Method 204D of Appendix M to 40 CFR Part 51 if the enclosure is a temporary total enclosure. Use Method 204E of Appendix M to 40 CFR Part 51 if the enclosure is a building enclosure. During the capture efficiency measurement, all organic compound emitting operations inside the building enclosure, other than the coating operation for which capture efficiency is being determined, must be shut down, but all fans and blowers must be operating normally.

5. Determine the percent capture efficiency of the emission capture system for each capture efficiency test run using Equation 14-2.

Equation 14-2 – Calculate the percent capture efficiency

$$CE = \frac{(TVH_{used} - TVH_{uncaptured})}{TVH_{used}} \times 100$$

Where:

- CE = Capture efficiency of the emission capture system vented to the add-on control device, percent;
 - TVH_{used} = Mass of total volatile hydrocarbon liquid input used in the coating operation during the capture efficiency test run, kilograms; and
 - $TVH_{uncaptured}$ = Total mass of total volatile hydrocarbon that is not captured by the emission capture system and that exits from the temporary total enclosure or building enclosure during the capture efficiency test run, kilograms.
6. Determine the capture efficiency of the emission capture system as the average of the capture efficiencies measured in the three test runs.

14.3 Determining capture efficiency – gas-to-gas protocol. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3965(d), use the procedures in paragraphs (1) through (5) to determine the capture system efficiency using the gas-to-gas protocol using a temporary total enclosure or a building enclosure. The gas-to-gas protocol compares to mass of total volatile hydrocarbon emissions captured by the emission capture system to the mass of total volatile hydrocarbon emissions not captured.

1. Either use a building enclosure or construct an enclosure around the coating operation where coatings, thinners and/or other additives, and cleaning materials are applied, and all areas where emissions from these applied coatings and materials subsequently occur, such as flash-off, curing, and drying areas. The areas of the coating operation where capture devices collect emissions for routing to an add-on control device, such as the entrance and exit areas of an oven or a spray booth, must also be inside the enclosure. The enclosure must meet the applicable definition of a temporary total enclosure or building enclosure in Method 204 of Appendix M to 40 CFR Part 51.
2. Use Method 204B or 204C of Appendix M to 40 CFR Part 51 to measure the total mass, kilograms, of total volatile hydrocarbon emissions captured by the emission capture system during each capture efficiency test run as measured at the inlet to the add-on control device. To make the measurement, substitute total volatile hydrocarbon for each occurrence of the term volatile organic compound in the methods. The sampling points for the Method 204B or 204C measurement must be upstream from the add-on control device and must represent total emissions routed from the capture system and entering the add-on control device. If multiple emission streams from the capture system enter the add-on control device without a

single common duct, then the emissions entering the add-on control device must be simultaneously measured in each duct and the total emissions entering the add-on control device must be determined.

3. Use Method 204D or 204E of Appendix M to 40 CFR Part 51 to measure the total mass, kilograms, of total volatile hydrocarbon emissions that are not captured by the emission capture system. These emissions are measured as they exit the temporary total enclosure or building enclosure during each capture efficiency test run. To make the measurement, substitute total volatile hydrocarbon for each occurrence of the term volatile organic compound in the methods. Use Method 204D of Appendix M to 40 CFR Part 51 if the enclosure is a temporary total enclosure. Use Method 204E of Appendix M to 40 CFR Part 51 if the enclosure is a building enclosure. During the capture efficiency measurement, all organic compound emitting operations inside the building enclosure, other than the coating operation for which capture efficiency is being determined, must be shut down, but all fans and blowers must be operating normally.
4. Determine the percent capture efficiency of the emission capture system for each capture efficiency test run using Equation 14-3.

Equation 14-3 – Calculate the percent capture efficiency

$$CE = \left(\frac{TVH_{\text{captured}}}{TVH_{\text{captured}} + TVH_{\text{uncaptured}}} \right) \times 100$$

Where:

- CE = Capture efficiency of the emission capture system vented to the add-on control device, percent;
 - TVH_{captured} = Total mass of total volatile hydrocarbon captured by the emission capture system as measured at the inlet to the add-on control device during the emission capture efficiency test run, kilograms; and
 - $TVH_{\text{uncaptured}}$ = Total mass of total volatile hydrocarbon that is not captured by the emission capture system and that exits from the temporary total enclosure or building enclosure during the capture efficiency test run, kilograms.
5. Determine the capture efficiency of the emission capture system as the average of the capture efficiencies measured in the three test runs.

15.0 ADD-ON CONTROL DEVICE EMISSION DESTRUCTION OR REMOVAL EFFICIENCY PERFORMANCE TEST

15.1 Capture system efficiency test procedures. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3966, the owner or operator must use the following test methods and

procedures to determine the add-on control device emission destruction or removal efficiency. The owner or operator must conduct three test runs as specified in 40 CFR § 63.7(e)(3) and each test run must last at least 1 hour.

1. For all types of add-on control devices, use the following test methods:
 - a. Use Method 1 or 1A of Appendix A to 40 CFR Part 60, as appropriate, to select sampling sites and velocity traverse points.
 - b. Use Method 2, 2A, 2C, 2D, 2F, or 2G of Appendix A to 40 CFR Part 60, as appropriate, to measure gas volumetric flow rate.
 - c. Use Method 3, 3A, or 3B of Appendix A to 40 CFR Part 60, as appropriate, for gas analysis to determine dry molecular weight.
 - d. Use Method 4 of Appendix A to 40 CFR Part 60, to determine stack gas moisture.
 - e. Methods for determining gas volumetric flow rate, dry molecular weight, and stack gas moisture must be performed, as applicable, during each test run.
2. Measure total gaseous organic mass emissions as carbon at the inlet and outlet of the add-on control device simultaneously, using either Method 25 or 25A of Appendix A to 40 CFR Part 60.
 - a. Use Method 25 if the add-on control device is an oxidizer and the expected total gaseous organic concentration as carbon is more than 50 parts per million (ppm) at the control device outlet.
 - b. Use Method 25A if the add-on control device is an oxidizer and the expected total gaseous organic concentration as carbon is 50 parts per million or less at the control device outlet.
3. If two or more add-on control devices are used for the same emission stream, the emissions at the outlet to the atmosphere of each control device must be measured. For example, if one add-on control device is a concentrator with an outlet to the atmosphere for the high-volume dilute stream that has been treated by the concentrator, and a second add-on control device is an oxidizer with an outlet to the atmosphere for the low-volume concentrated stream that is treated with the oxidizer, the emissions at the outlet of the oxidizer and the high volume dilute stream outlet of the concentrator must be measured.
4. For each test run, determine the total gaseous organic emissions mass flow rates for the inlet and the outlet of the add-on control device, using Equation 15-1. If there is more than one inlet or outlet to the add-on control device, calculate the total gaseous organic mass flow rate using Equation 15-1 for each inlet and each outlet and then total all of the inlet emissions and total all of the outlet emissions.

Equation 15-1 – Calculate the total gaseous organic mass flow rate

$$M_f = Q_{sd} C_C (12)(0.0416)(10^{-6})$$

Where:

- M_f = Total gaseous organic emissions mass flow rate, kilogram per hour;

- C_C = Concentration of organic compounds as carbon in the vent gas, as determined by Method 25 or Method 25A, parts per million by volume, dry basis;
 - Q_{sd} = Volumetric flow rate of gases entering or exiting the add-on control device, as determined by Method 2, 2A, 2C, 2D, 2F, or 2G, dry standard cubic meters per hour; and
 - 0.0416 = Conversion factor for molar volume, kilogram-moles per cubic meter @ 293 Kelvin and 760 millimeters of mercury.
5. For each test run, determine the add-on control device organic emissions destruction or removal efficiency using Equation 15-2.

Equation 15-2 – Calculate the emission destruction or removal efficiency

$$DRE = \frac{M_{fi} - M_{fo}}{M_{fi}} \times 100$$

Where:

- DRE = Organic emissions destruction or removal efficiency of the add-on control device, percent;
 - M_{fi} = Total gaseous organic emissions mass flow rate at the inlet(s) to the add-on control device, using Equation 15-1, kilogram per hour; and
 - M_{fo} = Total gaseous organic emissions mass flow rate at the outlet(s) of the add-on control device, using Equation 15-1, kilogram per hour.
6. Determine the emission destruction or removal efficiency of the add-on control device as the average of the efficiencies determined in the three test runs and calculated using Equation 15-2.

16.0 DEMONSTRATING CONTINUOUS COMPLIANCE – EMISSIONS RATE WITH ADD-ON CONTROLS OPTION

16.1 Continuous compliance using the emission rate with add-on controls option. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3963, if the owner or operator demonstrates compliance with the applicable emission limits in permit condition 6.5, using the emission rate with add-on controls option, the owner or operator shall demonstrate continuous compliance with the emission limits in permit condition 6.5 as follows:

1. Determine the organic hazardous air pollutant emission rate for each compliance period in accordance with the procedures in Chapter 12.0. A compliance period consists of 12 months. Each month after the end of the initial compliance period is the end of a compliance period consisting of that month and the preceding 11 months. The owner or operator must perform the calculations in Chapter 12.0 on a monthly basis using data from the previous 12 months

- of operation. If a facility-specific emission limit as given in permit condition 6.5 paragraph (7) is used to comply, the owner or operator must also perform the calculation using Equation 6-1 on a monthly basis using the data from the previous 12 months of operation;
2. If the organic hazardous air pollutant emission rate for any 12-month compliance period exceeds the emission limits in permit condition 6.5, this is a deviation from the emission limit for that compliance period that must be reported in the initial notification required in permit condition 5.10 and in the semiannual compliance report specified in permit condition 5.11;
 3. The owner or operator must demonstrate continuous compliance with each applicable operating limit as specified in permit condition 6.6, when the coating line is in operation;
 4. If an operating parameter deviates from the operating limit specified in permit condition 6.6, the owner or operator must assume that the emission capture system and add-on control device were achieving zero efficiency during the time period of the deviation, unless the owner or operator has other data indicating the actual efficiency of the emission capture system and add-on control device and the use of these data is approved by the Secretary;
 5. The owner or operator must meet the requirements for bypass lines in permit condition 16.3(8) for controlled coating operations for which liquid-liquid material balances are not conducted. If any bypass line is opened and emissions are diverted to the atmosphere when the coating line is operating, this is a deviation that must be reported in the initial notification required in permit condition 5.10 and in the semiannual compliance report specified in permit condition 5.11. For the purposes of completing the compliance calculations in permit condition 12.5, the owner or operator must treat the materials used during a deviation on a controlled coating operation as if they were used on an uncontrolled coating operation for the time period of the deviation as indicated in Equation 12-1 of permit condition 12.5;
 6. The owner or operator must demonstrate continuous compliance with the work practice standards in permit condition 16.2. If the owner or operator did not develop a work practice plan, or the plan was not implemented, or the records required in permit condition 5.7 were not kept, this is a deviation from the work practice standards that must be reported in the initial notification required in permit condition 5.10 and in the semiannual compliance report specified in permit condition 5.11;
 7. In each semiannual report, identify the coating operation(s) for which the emission rate with add-on controls option was used. If there were no deviations from the emission limitations, include a statement that the coating operations(s) was (were) in compliance with the emission limitations during the reporting period because the organic hazardous air pollutant emission rate for each compliance period was less than or equal to the applicable emission limits in permit condition 6.5 as determined according to procedure in Chapter 12.0 and that the operating limits required in permit condition 6.6 and the work practice standards required in permit condition 16.2 were met during each compliance period;
 8. During periods of startup, shutdown, or malfunction of the emission capture system, add-on control device, or coating operation that may affect emission capture or control device efficiency, the owner or operator must operate in accordance with the startup, shutdown, and malfunction plan required in permit condition 16.3; and

9. The owner or operator must maintain the records specified in permit conditions 5.5, 5.6, and 5.7.

16.2 Work practice standards – emission limit with add-on controls option. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR §§ 63.3893(b), the owner or operator must develop and implement a work practice plan to minimize organic hazardous air pollutant emissions from the storage, mixing, and conveying of coatings, thinners and/or other additives, and cleaning materials used in, and waste materials generated by the controlled coating operation(s) for which the emission limit with add-on controls option is used. The plan must specify practices and procedures to ensure that, at a minimum, the following elements are implemented:

1. All organic hazardous air pollutant-containing coatings, thinners, and/or other additives, cleaning materials, and waste materials must be stored in closed containers;
2. Spills of organic hazardous air pollutant-containing coatings, thinners and/or other additives, cleaning materials, and waste materials must be minimized;
3. Organic hazardous air pollutant-containing coatings, thinners and/or other additives, cleaning materials, and waste materials must be conveyed from one location to another in closed containers or pipes;
4. Mixing vessels which contain organic hazardous air pollutant-containing coatings and other materials must be closed except when adding to, removing, or mixing the contents; and
5. Emissions of organic hazardous air pollutants must be minimized during cleaning of storage, mixing, and conveying equipment.

The Administrator of the Environmental Protection Agency may grant the owner or operator permission to use alternate work practice standards.

16.3 Startup, shutdown, and malfunction plan. In accordance with ARSD 74:36:08:37, as referenced to 40 CFR §§ 63.3900(c), the owner or operator must develop and implement a written startup, shutdown, and malfunction plan according to the provisions of 40 CFR § 63.6(e)(3). The plan must address the startup, shutdown, and corrective actions in the event of a malfunction of the emission capture system or the add-on control device. The plan must also address any coating operation equipment that may cause increased emissions or that would affect capture efficiency if the process equipment malfunctions, such as conveyors that move parts among enclosures.

16.4 Continuous parameter monitoring system. In accordance with ARSD 74:36:08:34, as referenced to 40 CFR § 63.3968(a)(b)(c) and (g), the owner or operator must install, operate, and maintain each continuous monitoring system according to the following requirements:

1. The continuous parameter monitoring system must complete a minimum of one cycle of operation for each successive 15-minute period. There must be a minimum of four equally spaced successive cycles of continuous parameter monitoring system operation in 1 hour.

2. Determine the average of all recorded readings for each successive 3-hour period of the emission capture system and add-on control device.
3. Record the results of each inspection, calibration, and validation check of the continuous parameter monitoring system.
4. Maintain the continuous parameter monitoring system at all times and have available necessary parts for routine repairs of the monitoring equipment.
5. Operate the continuous parameter monitoring system and collect emission capture system and add-on control device parameter data at all times that a controlled coating operation is operating, except during monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, if applicable, calibration checks and required zero and span adjustments).
6. The owner or operator must not use emission capture system or add-on control device parameter data recorded during monitoring malfunction, associated repairs, out-of-control periods, or required quality assurance or control activities when calculating data averages. The owner or operator must use all the data collected during all other periods in calculating the data averages for determining compliance with the emission capture system and add-on control device operating limits.
7. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the continuous parameter monitoring system to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. Any period for which the monitoring system is out-of-control, and data are not available for required calculations is a deviation from the monitoring requirements.
8. The owner or operator must meet the following requirements for each emission capture system that contains bypass lines that could divert emissions away from the add-on capture device to the atmosphere:
 - a. Monitor or secure the valve or closure mechanism controlling the bypass line in a nondiverting position in such a way that the valve or closure mechanism cannot be opened without creating a record that the valve was opened. The method used to monitor or secure the valve or closure mechanism must meet one of the following requirements:
 - i. Install, calibrate, maintain, and operate according to the manufacturer's specifications a flow control position indicator that takes a reading at least once every 15 minutes and provides a record indicating whether the emissions are directed to the add-on control device or diverted from the add-on control device. The time of occurrence and flow control position must be recorded, as well as every time the flow direction is changed. The flow control position indicator must be installed at the entrance to any bypass line that could divert the emissions away from the add-on control device to the atmosphere.
 - ii. Secure any bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. The seal or closure mechanism must be visually inspected at least once every month to ensure that the valve is maintained in the closed position, and the emissions are not diverted away from the add-on control device to the atmosphere.

- iii. Ensure that any bypass line valve is in the closed (nondiverting) position through monitoring of valve position at least once every 15 minutes. The monitoring system must be inspected at least once every month to verify that the monitor will indicate valve position.
 - iv. Use an automatic shutdown system in which the coating operation is stopped when flow is diverted by the bypass line away from the add-on control device to the atmosphere when the coating operation is running. Inspect the automatic shutdown system at least once every month to verify that it will detect diversions of flow and shutdown the coating operation.
 - v. Install, calibrate, maintain, and operate according to the manufacturer's specifications a flow direction indicator that takes a reading at least once every 15 minutes and provides a record indicating whether the emissions are directed to the add-on control device or diverted from the add-on control device. Each time the flow direction changes, the next reading of the time of occurrence and flow direction must be recorded. The flow direction indicator must be installed in each bypass line or air makeup supply line that could divert the emissions away from the add-on control device to the atmosphere.
- b. If any bypass line is opened, the owner or operator must include a description of why the bypass line was opened and the length of time it remained open in the semiannual compliance reports required in permit condition 5.11.
9. If a thermal oxidizer is used as an add-on control device, the owner or operator must comply with the following requirements:
- a. Install a gas temperature monitor in the firebox of the thermal oxidizer or in the duct immediately downstream of the firebox before any substantial heat exchange occurs.
 - b. Locate the temperature sensor in a position that provides a representative temperature.
 - c. Use a temperature sensor with a measurement sensitivity of 5 degrees Fahrenheit or 1.0 percent of the temperature value, whichever is larger.
 - d. Before using the sensor for the first time or when relocating or replacing the sensor, perform a validation check by comparing the sensor output to a calibrated temperature measurement device or by comparing the sensor output to a simulated temperature.
 - e. Conduct an accuracy audit every quarter and after every deviation. Accuracy audit methods include comparisons of sensor output to redundant temperature sensors, to calibrated temperature measurement devices, or to temperature simulation devices.
 - f. Conduct a visual inspection of each sensor every quarter if redundant temperature sensors are not used.
10. The capture system monitoring system must comply with the following requirements, as applicable:
- a. For each flow measure device, the owner or operator must meet the following requirements:
 - i. Locate a flow sensor in a position that provides a representative flow measurement in the duct from each capture device in the emission capture system to the add-on control device.
 - ii. Use a flow sensor with an accuracy of at least 10 percent of the flow.

- iii. Perform an initial sensor calibration in accordance with the manufacturer's requirements.
 - iv. Perform a validation check before initial use or upon relocation or replacement of a sensor. Validation checks include comparison of sensor values with electronic signal simulations or via relative accuracy testing.
 - v. Conduct an accuracy audit every quarter and after every deviation. Accuracy audit methods include comparisons of sensor values with electronic signal simulations or via relative accuracy testing.
 - vi. Perform leak checks monthly.
 - vii. Perform visual inspections of the sensor system quarterly if there is no redundant sensor.
- b. For each pressure drop measurement device, the owner or operator must meet the following requirements:
- i. Locate the pressure sensor(s) in or as close to a position that provides a representative measurement of the pressure drop across each opening being monitored.
 - ii. Use a pressure sensor with an accuracy of at least 0.5 inches of water column or 5 percent of the measured value, whichever is larger.
 - iii. Perform an initial calibration of the sensor according to the manufacturer's requirements.
 - iv. Conduct a validation check before initial operation or upon relocation or replacement of a sensor. Validation checks include comparison of sensor values to calibrated pressure measurement devices or to pressure simulation using calibrated pressure sources.
 - v. Conduct accuracy audits every quarter and after every deviation. Accuracy audits include comparison of sensor values to calibrated pressure measurement devices or to pressure simulation using calibrated pressure sources.
 - vi. Perform monthly leak checks on pressure connections. A pressure of at least 1.0 inches of water column to the connection must yield a stable sensor result for at least 15 seconds.
 - vii. Perform a visual inspection of the sensor at least monthly if there is no redundant sensor.

17.0 PERFORMANCE TESTS

17.1 Performance test may be required. In accordance with ARSD 74:36:11:02, the Secretary may request a performance test during the term of this permit. A performance test shall be conducted while operating the unit at or greater than 90 percent of its maximum design capacity, unless otherwise specified by the Secretary. A performance test conducted while operating less than 90 percent of its maximum design capacity will result in the operation being limited to the percent achieved during the performance test. The Secretary has the discretion to extend the deadline for completion of a performance test required by the Secretary if

circumstances reasonably warrant but will not extend the deadline past a federally required performance test deadline.

17.2 Test methods and procedures. The owner or operator shall conduct the performance test in accordance with 40 CFR Part 60, Appendix A, 40 CFR Part 63, Appendix A, and 40 CFR Part 51, Appendix M. The Secretary may approve an alternative method if a performance test specified in 40 CFR Part 60, Appendix A, 40 CFR Part 63, Appendix A, and 40 CFR Part 51, Appendix M is not federally applicable or federally required.

17.3 Representative performance test. In accordance with ARSD 74:36:07:01, as referenced to 40 CFR § 60.8(c), performance tests shall be conducted under such conditions as the Secretary shall specify to the owner or operator based on the representative performance of the unit being tested. The owner or operator shall make available to the Secretary such records as may be necessary to determine the conditions of the performance tests. 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 applicable emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in this permit.

17.4 Submittal of test plan. In accordance with ARSD 74:36:11:01, the owner or operator shall submit the proposed testing procedures to the Secretary at least 30 days prior to any performance test. The Secretary will notify the owner or operator if the proposed test procedures are approved or denied. If the proposed test procedures are denied, the Secretary will provide written notification that outlines what needs to be completed for approval.

17.5 Notification of test. In accordance with ARSD 74:36:11:03, the owner or operator shall notify the Secretary at least 10 days prior to the start of a performance test to arrange for an agreeable test date when the Secretary may observe the test. The Secretary may extend the deadline for the performance test in order to accommodate schedules in arranging an agreeable test date.

17.6 Performance test report. In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall submit a performance test report to the Secretary within 60 days after completing the performance test or by a date designated by the Secretary. The performance test report shall contain the following information:

1. A brief description of the process and the air pollution control system being tested;
2. Sampling location description(s);
3. A description of sampling and analytical procedures and any modifications to standard procedures;
4. Test results;
5. Quality assurance procedures and results;

6. Records of operating conditions during the test, preparation of standards, and calibration procedures;
7. Raw data sheets for field sampling and field and laboratory analyses;
8. Documentation of calculations;
9. All data recorded and used to establish parameters for compliance monitoring; and
10. Any other information required by the test method.

18.0 MONITORING

18.1 Periodic monitoring for opacity limits. In accordance with ARSD 74:36:13:07, the owner or operator shall demonstrate compliance with the opacity limits in Chapter 6.0, except for Unit(s) #4, #5, #6, #7, #8, #9, #10, #11, #12, and #13, on a periodic basis. Periodic monitoring shall be based on the amount of visible emissions from each unit and evaluated according to the following steps:

Step 1: If there are no visible emissions from a unit subject to an opacity limit, periodic monitoring shall consist of a visible emission reading. A visible emission reading shall consist of a visual survey of each unit over a two-minute period to identify if there are visible emissions. The visible emission reading must be conducted while the unit is in operation; but not during periods of startup, shutdown, or malfunctions. Visible emission readings on each unit subject to an opacity limit in Chapter 6.0 shall be based on the following frequency:

- a. The owner or operator shall conduct a visible emission reading once per calendar month;
- b. If no visible emissions are observed from a unit in six consecutive monthly visible emission readings, the owner or operator may decrease the frequency of readings from monthly to semiannually for that unit; or
- c. If no visible emissions are observed from a unit in two consecutive semiannual visible emission readings, the owner or operator may decrease the frequency of testing of readings from semiannually to annually for that unit.

Step 2: If visible emissions are observed from a unit at any time other than periods of startup, shutdown, or malfunction, the owner or operator shall conduct a visible emission test on that unit to determine if the unit is in compliance with the opacity limit specified in Chapter 6.0. The emission test shall be for six minutes and conducted in accordance with 40 CFR Part 60, Appendix A, Method 9. The visible emission test must be conducted while the unit is in operation; but not during periods of startup, shutdown, or malfunctions. Visible emission tests shall be based on the following frequency:

- a. The visible emission test must be conducted within one hour of witnessing a visible emission from a unit during a visible emission reading;

- b. If the visible emission test required in Step 2(a) results in an opacity value less than or equal to 50 percent of the opacity limit for the unit, the owner or operator shall perform a visible emission test once per month;
- c. If the opacity value of a visible emission test is less than five percent for six straight monthly tests, the owner or operator may revert back to monthly visible emission readings as required in Step 1;
- d. If the visible emission test required in Steps 2(a) or 2(b) results in an opacity value greater than 50 percent of the opacity limit but less than the opacity limit, the owner or operator shall perform a visible emission test once per week; or
- e. If the visible emission test in Step 2(d) results in an opacity value less than or equal to 50 percent of the opacity limit for six straight weekly readings, the owner or operator may revert back to a monthly visible emission test as required in Step 2(b).

The person conducting the visible emission test must be certified in accordance with 40 CFR Part 60, Appendix A, Method 9. If a visible emission test is required before a person is certified in accordance with permit condition 18.2, the owner or operator shall notify the Secretary within 24 hours of observing the visible emissions to schedule a visible emission test performed by a state inspector.

18.2 Certified personnel – visible emission tests. In accordance with ARSD 74:36:13:07, within 180 days after permit issuance the owner or operator shall retain a person that is certified to perform a visible emission test in accordance with 40 CFR Part 60, Appendix A, Method 9. The owner or operator shall retain a certified person throughout the remaining term of this permit.

19.0 EXEMPTIONS

19.1 Prevention of significant deterioration review exemption. In accordance with ARSD 74:36:05:16.01(8), the owner or operator is exempt from a prevention of significant deterioration review for volatile organic compounds. The exemption is based on operational and air emission limits in this permit. Any relaxation in the permit conditions that increases applicable emissions equal to or greater than 245 tons per 12-month rolling period may require a full prevention of significant deterioration review as though construction had not commenced on the source.