

Appendix B to Subpart DDDD of Part 63--Methodology and Criteria for Demonstrating That an Affected Source Is Part of the Low-Risk Subcategory of Plywood and Composite Wood Products Manufacturing Affected Sources

1. Purpose

This appendix provides the methodology and criteria for demonstrating that your affected source is part of the low-risk subcategory of plywood and composite wood products (PCWP) manufacturing facilities. You must demonstrate that your affected source is part of the low-risk subcategory using either a look-up table analysis (based on the look-up tables included in this appendix) or using a site-specific risk assessment performed according to the criteria specified in this appendix. This appendix also specifies how and when you must obtain approval of the low-risk demonstrations for your affected source and how to ensure that your affected source remains in the low-risk subcategory of PCWP facilities.

2. Who Is Eligible To Demonstrate That They Are Part of the Low-Risk Subcategory of PCWP Affected Sources?

Each new, reconstructed, or existing affected source at a PCWP manufacturing facility may demonstrate that they are part of the low-risk subcategory of PCWP affected sources. Section 63.2232 of 40 CFR part 63, subpart DDDD, defines the affected source and explains which affected sources are new, existing, or reconstructed.

3. What Parts of My Affected Source Have To Be Included in the Low-Risk Demonstration?

Every process unit that is part of the PCWP affected source (as defined in Sec. 63.2292 of 40 CFR part 63, subpart DDDD) and that emits one or more hazardous air pollutant (HAP) listed in Table 1 to this appendix must be included in the low-risk demonstration. You are not required to include process units outside of the affected source in the low-risk demonstration.

4. What Are the Criteria for Determining if My Affected Source Is Low Risk?

(a) Determine the individual HAP emission rates from each process unit within the affected source using the procedures specified in section 5 of this appendix.

(b) Perform chronic and acute risk assessments using the dose-response values, as specified in paragraphs (b)(1) through (3) of this section.

(1) For a look-up table analysis or site-specific chronic inhalation risk assessment, you should use the cancer and noncancer dose-response values listed on the Environmental Protection Agency (EPA) Air Toxics Web site (<http://www.epa.gov/ttn/atw/toxsource/summary.html>) to estimate carcinogenic and noncarcinogenic chronic inhalation risk, respectively.

(2) For site-specific acute inhalation risk assessment, you should use the acute exposure guidance level (AEG-L1) value for acrolein and the acute reference exposure level (REL) value for formaldehyde for estimating acute inhalation risk found at <http://www.epa.gov/ttn/atw/toxsource/summary.html>.

(3) You may use dose-response values more health-protective than those posted on the EPA Air Toxics Web site (<http://www.epa.gov/ttn/atw/toxsource/summary.html>) to facilitate ongoing certification (as required in section 13 of this appendix) that your affected source remains in the low-risk subcategory.

(c) Demonstrate that your affected source is part of the low-risk subcategory by estimating the maximum impacts of your affected source using the methods described in either section 6 of this appendix (look-up table analysis) or section 7 of this appendix (site-specific risk assessment) and comparing the results to the low-risk criteria presented in the applicable section.

5. How Do I Determine HAP Emissions From My Affected Source?

(a) You must conduct HAP emissions tests according to the requirements in paragraphs (b) through (h) of this section and the methods specified in Table 2 to this appendix for every process unit within the affected source that emits one or more of the HAP listed in Table 1 to this appendix. You must test the process units at your affected source to obtain the emission rates in pounds per hour (lb/hr) for each of the pollutants listed in Table 1 to this appendix.

(b) Periods when emissions tests must be conducted.

(1) You must not conduct emissions tests during periods of startup, shutdown, or malfunction, as specified in 40 CFR 63.7(e)(1).

(2) You must test under worst-case operating conditions as defined in this appendix. You must describe your worst-case operating conditions in your performance test report for the process and control systems (if applicable) and explain why the conditions are worst-case.

(c) Number of test runs. You must conduct three separate test runs for each test required in this section, as specified in 40 CFR 63.7(e)(3). Each test run must last at least 1 hour except for: testing of a temporary total enclosure (TTE) conducted using Methods 204A through 204F in 40 CFR part 51, appendix M, which require three separate test runs of at least 3 hours each; and testing of an enclosure conducted using the alternative tracer gas method in appendix A to 40 CFR part 63, subpart DDDD, which requires a minimum of three separate runs of at least 20 minutes each.

(d) Sampling locations. Sampling sites must be located at the emission point and prior to any releases to the atmosphere. For example, at the outlet of the control device, including wet control devices, and prior to any releases to the atmosphere.

(e) Collection of monitoring data for HAP control devices. During the emissions test, you must collect operating parameter monitoring system or continuous emissions monitoring system (CEMS) data at least every 15 minutes during the entire emissions test and establish the site-specific operating requirements (including the parameter limits or total hydrocarbon (THC) concentration limit) in Table 2 to 40 CFR part 63, subpart DDDD, using data from the monitoring system and the procedures specified in paragraphs (k) through (o) of Sec. 63.2262 of subpart DDDD of 40 CFR part 63.

(f) Nondetect data. You may treat emissions of an individual HAP as zero if all of the test runs result in a nondetect measurement and the conditions in paragraphs (1) and (2) of this section are met for the relevant test method. Otherwise, nondetect data (as defined in Sec. 63.2292 of 40 CFR part 63, subpart DDDD) for individual HAP must be treated as one-half of the method detection limit.

(1) The method detection limit is less than or equal to 1 part per million by volume, dry (ppmvd) for pollutant emissions measured using Method 320 in appendix A to 40 CFR part 63; or the NCASI Method IM/CAN/WP-99.02 (incorporated by reference (IBR), see 40 CFR 63.14(f)); or ASTM D6348-03 (IBR, see 40 CFR 63.14(b)).

(2) For pollutants measured using Method 29 in appendix A to 40 CFR part 60, you analyze samples using atomic absorption spectroscopy (AAS).

(g) For purposes of your low-risk demonstration, you must assume that 17 percent of your total chromium measured using EPA Method 29 in appendix A to 40 CFR part 60 is chromium VI. You must assume that 65 percent of your total nickel measured using EPA Method 29 in appendix A to 40 CFR part 60 is nickel subsulfide.

(h) You may use emission rates higher than your measured emission rates (e.g., emissions rates 10 times your measured emission rate) to facilitate ongoing certification (as required in section 13 of this appendix) that your affected source remains in the low-risk subcategory.

6. How Do I Conduct a Look-Up Table Analysis?

Use the look-up tables (Tables 3 and 4 to this appendix) to demonstrate that your affected source is part of the low-risk subcategory, following the procedures in paragraphs (a) through (d) of this section.

(a) Using the emission rate of each HAP required to be included in your low-risk demonstration (measured according to section 5 of this appendix), calculate your total toxicity-weighted carcinogen and noncarcinogen emission rates for each of your process units using Equations 1 and 2 of this appendix, respectively.

$$TWCER = \sum (ER_i \times URE_i) \quad (\text{Eq. 1})$$

TWCER = Toxicity-weighted carcinogenic emission rate for each process unit (lb/hr)/([mu]g/m³)

ER_i = Emission rate of pollutant i (lb/hr)

URE_i = Unit risk estimate for pollutant i, 1 per microgram per cubic meter ([mu]g/m³)⁻¹

$$TWNER = \sum (ER_i / RfC_i) \quad (\text{Eq. 2})$$

TWNER = Toxicity-weighted noncarcinogenic emission rate for each process unit

(lb/hr)/([mu]g/m³)

ER_i = Emission rate of pollutant i (lb/hr)

RfC_i = Reference concentration for pollutant i, micrograms per cubic meter ([mu]g/m³)

(b) Cancer risk. Calculate the total toxicity-weighted carcinogen emission rate for your affected source by summing the toxicity-weighted carcinogen emission rates for each of your process units. Identify the appropriate maximum allowable toxicity-weighted carcinogen emission rate from Table 3 to this appendix for your affected source using the average stack height of your emission points and the minimum distance between any emission point at the affected source and the property boundary. If one or both of these values do not match the exact values in the lookup table, then use the next lowest table value. (Note: If your average stack height is less than 5 meters (m), you must use the 5 m row.) Your affected source is considered low risk for carcinogenic effects if your toxicity-weighted carcinogen emission rate, determined using the methods specified in this appendix, does not exceed the values specified in Table 3 to this appendix.

(c) Noncancer risk. Calculate the total central nervous system (CNS) and respiratory target organ specific toxicity-weighted noncarcinogen emission rate for your affected source by summing the toxicity-weighted emission rates for each of your process units. Identify the appropriate maximum allowable toxicity-weighted noncarcinogen emission rate from Table 4 to this

appendix for your affected source using the average stack height of your emission points and the minimum distance between any emission point at the affected source and the property boundary. If one or both of these values do not match the exact values in the lookup table, then use the next lowest table value. (Note: If your average stack height is less than 5 m, you must use the 5 m row.) Your affected source is considered low risk for noncarcinogenic effects if your toxicity-weighted noncarcinogen emission rate, determined using the methods specified in this appendix, does not exceed the values specified in Table 4 to this appendix.

(d) Low-risk demonstration. The EPA will approve your affected source as eligible for membership in the low-risk subcategory of PCWP affected sources if it determines that: (1) your affected source is low risk for both carcinogenic and noncarcinogenic effects using the look-up table analysis described in this section; and (2) you meet the criteria specified in section 11 of this appendix.

7. How Do I Conduct a Site-Specific Risk Assessment?

(a) Perform a site-specific risk assessment following the procedures specified in this section. You may use any scientifically-accepted peer-reviewed assessment methodology for your site-specific risk assessment. An example of one approach to performing a site-specific risk assessment for air toxics that may be appropriate for your affected source can be found in the "Air Toxics Risk Assessment Guidance Reference Library, Volume 2, Site-Specific Risk Assessment Technical Resource Document." You may obtain a copy of the "Air Toxics Risk Assessment Reference Library" through EPA's air toxics Web Site at <http://www.epa.gov/ttn/atw>.

(b) At a minimum, your site-specific risk assessment must:

- (1) Estimate the long-term inhalation exposures through the estimation of annual or multi-year average ambient concentrations for the chronic portion of the assessment.
- (2) Estimate the acute exposures for formaldehyde and acrolein through the estimation of maximum 1-hour average ambient concentrations for the acute portion of the assessment.
- (3) Estimate the inhalation exposure of the individual most exposed to the affected source's emissions.
- (4) Estimate the individual risks over a 70-year lifetime for the chronic cancer risk assessment.
- (5) Use site-specific, quality-assured data wherever possible.
- (6) Use health-protective default assumptions wherever site-specific data are not available.
- (7) Contain adequate documentation of the data and methods used for the assessment so that it is transparent and can be reproduced by an experienced risk assessor and emission measurement expert.

(c) Your site-specific risk assessment need not:

- (1) Assume any attenuation of exposure concentrations due to the penetration of outdoor pollutants into indoor exposure areas.
- (2) Assume any reaction or deposition of the emitted pollutants during transport from the emission point to the point of exposure.

(d) Your affected source is considered low risk for carcinogenic chronic inhalation effects if your site-specific risk assessment demonstrates that maximum off-site individual lifetime cancer risk at a location where people live is less than 1 in 1 million.

(e) Your affected source is considered low risk for noncarcinogenic chronic inhalation effects if your site-specific risk assessment demonstrates that every maximum off-site target-organ specific hazard index (TOSHI), or appropriate set of site-specific hazard indices based on similar or complementary mechanisms of action that are reasonably likely to be additive at low dose or dose-response data for mixtures, at a location where people live is less than or equal to 1.0.

(f) Your affected source is considered low risk for noncarcinogenic acute inhalation effects if your site-specific risk assessment demonstrates that the maximum off-site acute hazard quotients for both acrolein and formaldehyde are less than or equal to 1.0.

(g) The EPA will approve your affected source as eligible for membership in the low-risk subcategory of PCWP affected sources if it determines that: (1) your affected source is low risk for all of the applicable effects listed in paragraphs (d) through (f) of this section; and (2) you meet the criteria specified in section 11 of this appendix.

8. What Information Must I Submit for the Low-Risk Demonstration?

(a) Your low-risk demonstration must include at a minimum the information specified in paragraphs (a)(1) through (5) of this section and the information specified in either paragraph (b) or (c) of this section.

(1) Identification of each process unit at the affected source.

(2) Stack parameters for each emission point including, but not limited to, the parameters listed in paragraphs (a)(2)(i) through (iv) below:

(i) Emission release type.

(ii) Stack height, stack area, stack gas temperature, and stack gas exit velocity.

(iii) Plot plan showing all emission points, nearby residences, and fenceline.

(iv) Identification of any HAP control devices used to reduce emissions from each process unit.

(3) Emission test reports for each pollutant and process unit based on the test methods specified in Table 2 to this appendix, including a description of the process parameters identified as being worst case.

(4) Identification of the dose-response values used in your risk analysis (look-up table analysis or site-specific risk assessment), according to section 4(b) of this appendix.

(5) Identification of the controlling process factors (including, but not limited to, production rate, annual emission rate, type of control devices, process parameters documented as worst-case conditions during the emissions testing used for your low-risk demonstration) that will become Federally enforceable permit conditions used to show that your affected source remains in the low-risk subcategory.

(b) If you use the look-up table analysis in section 6 of this appendix to demonstrate that your affected source is low risk, your low-risk demonstration must contain at a minimum the information in paragraphs (a) and (b)(1) through (5) of this section.

(1) Identification of the stack heights for each emission point included in the calculation of average stack height.

(2) Identification of the emission point with the minimum distance to the property boundary.

(3) Calculations used to determine the toxicity-weighted carcinogen and noncarcinogen emission rates according to section 6(a) of this appendix.

(4) Comparison of the values in the look-up tables (Tables 3 and 4 to this appendix) to your toxicity-weighted emission rates for carcinogenic and noncarcinogenic HAP.

(c) If you use a site-specific risk assessment as described in section 7 of this appendix to demonstrate that your affected source is low risk (for carcinogenic and noncarcinogenic chronic inhalation and acute inhalation risks), your low-risk demonstration must contain at a minimum the information in paragraphs (a) and (c)(1) through (8) of this section.

(1) Identification of the risk assessment methodology used.

(2) Documentation of the fate and transport model used.

(3) Documentation of the fate and transport model inputs, including the information described in paragraphs (a)(1) through (4) of this section converted to the dimensions required for the model and all of the following that apply: meteorological data; building, land use, and terrain data; receptor locations and population data; and other facility-specific parameters input into the model.

(4) Documentation of the fate and transport model outputs.

(5) Documentation of exposure assessment and risk characterization calculations.

(6) Comparison of the maximum off-site individual lifetime cancer risk at a location where people live to 1 in 1 million, as required in section 7(d) of this appendix for carcinogenic chronic inhalation risk.

(7) Comparison of the maximum off-site TOSHI for respiratory effects and CNS effects at a location where people live to the limit of 1.0, as required in section 7(e) of this appendix for noncarcinogenic chronic inhalation risk.

(8) Comparison of the maximum off-site acute inhalation hazard quotient (HQ) for both acrolein and formaldehyde to the limit of 1.0, as required in section 7(f) of this appendix for noncarcinogenic acute inhalation effects.

(d) The EPA may request any additional information it determines is necessary or appropriate to evaluate an affected source's low-risk demonstration.

9. Where Do I Send My Low-Risk Demonstration?

You must submit your low-risk demonstration to the EPA for review and approval. Send your low-risk demonstration either via e-mail to REAG@EPA.GOV or via U.S. mail or other mail delivery service to U.S. EPA, Risk and Exposure Assessment Group, Emission Standards Division (C404-01), Attn: Group Leader, Research Triangle Park, NC 27711, and send a copy to your permitting authority. Your affected source is not part of the low-risk subcategory of PCWP facilities unless and until EPA notifies you that it has determined that you meet the requirements of section 11 of this appendix.

10. When Do I Submit My Low-Risk Demonstration?

(a) If you have an existing affected source, you must complete and submit for approval your low-risk demonstration no later than July 31, 2006.

(b) If you have an affected source that is an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP before September 28, 2004, then you must complete and submit for approval your low-risk demonstration no later than July 31, 2006. If you have an affected source that is an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP after September 28, 2004, then you must complete and submit for approval your low-risk demonstration no later than 12 months after you become a major source or after initial startup of your affected source as a major source, whichever is later.

(c) If you have a new or reconstructed affected source you must conduct the emission tests specified in section 5 of this appendix upon initial startup and use the results of these emissions tests to complete and submit your low-risk demonstration within 180 days following your initial startup date. If your new or reconstructed affected source starts up before September 28, 2004, for EPA to find that you are included in the low-risk subcategory, your low-risk demonstration must show that you were eligible to meet the criteria in section 11 of this appendix no later than September 28, 2004. If your new or reconstructed source starts up after September 28, 2004, for EPA to find that you are included in the low-risk subcategory, your low-risk demonstration must show that you were eligible to meet the criteria in section 11 of this appendix upon initial startup of your affected source. Affected sources that are not part of the low-risk subcategory by October 1, 2007, must comply with the requirements of 40 CFR part 63, subpart DDDD. Affected sources may not request compliance extensions from the permitting authority if they fail to demonstrate they are part of the low-risk subcategory or to request additional time to install controls to become part of the low-risk subcategory.

11. How Does My Affected Source Become Part of the Low-Risk Subcategory of PCWP Facilities?

To be included in the low-risk subcategory, EPA must find that you meet the criteria in paragraphs (a) and (b) of this section. Unless and until EPA finds that you meet these criteria, your affected source is subject to the applicable compliance options, operating requirements, and work practice requirements in 40 CFR part 63, subpart DDDD.

(a) Your demonstration of low risk must be approved by EPA.

(b) Following EPA approval, the parameters that defined your affected source as part of the low-risk subcategory (including, but not limited to, production rate, annual emission rate, type of control devices, process parameters reflecting the emissions rates used for your low-risk demonstration) must be incorporated as federally enforceable terms and conditions into your title V permit. You must submit an application for a significant permit modification to reopen your title V permit to incorporate such terms and conditions according to the procedures and schedules of 40 CFR part 71 or the EPA-approved program in effect under 40 CFR part 70, as applicable.

12. What Must I Do To Ensure My Affected Source Remains in the Low-Risk Subcategory of PCWP Facilities?

You must meet the requirements in Table 2 to 40 CFR part 63, subpart DDDD, for each HAP control device used at the time when you completed your low-risk demonstration. You must monitor and collect data according to Sec. 63.2270 of subpart DDDD to show continuous compliance with your control device operating requirements. You must demonstrate continuous compliance with the control device operating requirements that apply to you by collecting and recording the monitoring system data listed in Table 2 to 40 CFR part 63, subpart DDDD for the process unit according to Sec. 63.2269(a), (b), and (d) of subpart DDDD; and reducing the monitoring system data to the specified averages in units of the applicable requirement according to calculations in Sec. 63.2270 of subpart DDDD; and maintaining the average operating parameter at or above the minimum, at or below the maximum, or within the range (whichever applies) established according to section 5(e) of this appendix.

13. What Happens If the Criteria Used in the Risk Determination Change?

(a) You must certify with each annual title V permit compliance certification that the basis for your affected source's low-risk determination has not changed. You must submit this certification to the permitting authority. You must consider the changes in paragraphs (a)(1) through (5) of this section.

(1) Process changes that increase HAP emissions, including, but not limited to, a production rate increase, an annual emission rate increase, a change in type of control device, changes in process parameters reflecting emissions rates used for your approved low-risk demonstration.

(2) Population shifts, such as if people move to a different location such that their risks from the affected source increase.

(3) Unit risk estimate increases posted on the EPA website (<http://www.epa.gov/ttn/atw/toxsource/summary.html>) for the pollutants included in Table 1 to this appendix.

(4) Reference concentration changes posted on the EPA website (<http://www.epa.gov/ttn/atw/toxsource/summary.html>) for the pollutants included in Table 1 to this appendix.

(5) Acute dose-response value for formaldehyde or acrolein changes.

(b) If your affected source commences operating outside of the low-risk subcategory, it is no longer part of the low-risk subcategory. You must be in compliance with 40 CFR part 63, subpart DDDD as specified in paragraphs (b)(1) through (3) of this section. Operating outside of the low-risk subcategory means that one of the changes listed in paragraphs (a)(1) through (5) of this section has occurred and that the change is inconsistent with your affected source's title V permit terms and conditions reflecting EPA's approval of the parameters used in your low risk demonstration.

(1) You must notify the permitting authority as soon as you know, or could have reasonably known, that your affected source is or will be operating outside of the low-risk subcategory.

(2) You must be in compliance with the requirements of 40 CFR part 63, subpart DDDD as specified in paragraph (b)(2)(i) or (ii) of this section, whichever applies.

(i) If you are operating outside of the low-risk subcategory due to a change described in paragraph (a)(1) of this section, then you must comply with 40 CFR part 63, subpart DDDD beginning on the date when your affected source commences operating outside the low-risk subcategory.

(ii) If you are operating outside of the low-risk subcategory due to a change described in paragraphs (a)(2) through (5) of this section, then you must comply with 40 CFR part 63, subpart DDDD no later than three years from the date your affected source commences operating outside the low-risk subcategory.

(3) (i) You must conduct performance tests no later than 180 calendar days after the applicable date specified in paragraph (b)(2) of this section.

(ii) You must conduct initial compliance demonstrations that do not require performance tests 30 calendar days after the applicable date specified in paragraph (b)(2) of this section.

(iii) For the purposes of affected sources affected by this section, you must refer to the requirements in paragraph (b) of this section instead of the requirements of Sec. 63.2233 when complying with 40 CFR part 63, subpart DDDD.

14. What Records Must I Keep?

(a) You must keep records of the information used in developing the low-risk demonstration for your affected source, including all of the information specified in section 8 of this appendix.

(b) You must keep records demonstrating continuous compliance with the operating requirements for control devices.

(c) For each THC CEMS, you must keep the records specified in Sec. 63.2282(c) of 40 CFR part 63, subpart DDDD.

15. Definitions

The definitions in Sec. 63.2292 of 40 CFR part 63, subpart DDDD, apply to this appendix. Additional definitions applicable for this appendix are as follows:

Direct-fired process unit means a process unit that is heated by the passing of combustion exhaust directly through the process unit such that the process material is contacted by the combustion exhaust.

Emission point means an individual stack or vent from a process unit that emits HAP required for inclusion in the low-risk demonstration specified in this appendix. Process units may have multiple emission points.

Hazard Index (HI) means the sum of more than one hazard quotient for multiple substances and/or multiple exposure pathways.

Hazard Quotient (HQ) means the ratio of the predicted media concentration of a pollutant to the media concentration at which no adverse effects are expected. For inhalation exposures, the HQ is calculated as the air concentration divided by the reference concentration (RfC).

Look-up table analysis means a risk screening analysis based on comparing the toxicity-weighted HAP emission rate from the affected source to the maximum allowable toxicity-weighted HAP emission rates specified in Tables 3 and 4 to this appendix.

Reference Concentration (RfC) means an estimate (with uncertainty spanning perhaps an order of magnitude) of a continuous inhalation exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime. It can be derived from various types of human or animal data, with uncertainty factors generally applied to reflect limitations of the data used.

Target organ specific hazard index (TOSHI) means the sum of hazard quotients for individual chemicals that affect the same organ or organ system (e.g., respiratory system, central nervous system).

Unit Risk Estimate (URE) means the upper-bound excess lifetime cancer risk estimated to result from continuous exposure to an agent at a concentration of 1 microgram per cubic meter ($\mu\text{g}/\text{m}^3$) in air.

Worst-case operating conditions means operation of a process unit during emissions testing under the conditions that result in the highest HAP emissions or that result in the emissions stream composition (including HAP and non-HAP) that is most challenging for the control device if a control device is used. For example, worst case conditions could include operation of the process unit at maximum throughput, at its highest temperature, with the wood species mix likely to produce the most HAP, and/or with the resin formulation containing the greatest HAP.

Table 1.--to Appendix B to Subpart DDDD of 40 CFR Part 63.--HAP That Must Be Included in the Demonstration of Eligibility for the Low-Risk PCWP Subcategory

For your analysis of the following effects	You must include the following HAP
(1) Chronic inhalation carcinogenic effects	Acetaldehyde, benzene, arsenic, beryllium, cadmium, chromium, lead, nickel, and formaldehyde.
(2) Chronic inhalation noncarcinogenic respiratory effects	Acetaldehyde, acrolein, cadmium, formaldehyde, and methylene diphenyl diisocyanate (MDI).
(3) Chronic inhalation noncarcinogenic CNS effects	Manganese, lead, and phenol.
(4) Acute inhalation	Acrolein and formaldehyde.

Table 2 to Appendix B to Subpart DDDD of 40 CFR Part 63.--Emission Test Methods

For	You must	Using
(1) Each process unit	Select sampling ports' location and the number of traverse points.	Method 1 or 1A of 40 CFR part 60, appendix A (as appropriate).
(2) Each process unit	Determine velocity and volumetric flow rate;	Method 2 in addition to Method 2A, 2C, 2D, 2F, or 2G in appendix A to 40 CFR part 60 (as appropriate).
(3) Each process unit	Conduct gas molecular weight analysis	Method 3, 3A, or 3B in appendix A to 40 CFR part 60.
(4) Each process unit	Measure moisture content of the stack gas	Method 4 in appendix A to 40 CFR part 60.
(5) Each process unit	Measure emissions of the following HAP: acetaldehyde, acrolein, formaldehyde, and phenol.	NCASI Method IM/CAN/WP-99.02 (IBR, see 40 CFR 63.14(f)); OR Method 320 in appendix A to 40 CFR part 63; OR ASTM D6348-03 (IBR, see 40 CFR 63.14(b)) provided that percent R as determined in Annex A5 of ASTM D6348-03 is equal or greater than 70 percent and less than or equal to 130 percent.
(6) Each process unit	Measure emissions of benzene ¹	Method 320 in appendix A to 40 CFR part 63; OR ASTM D6348-03 (IBR, see 40 CFR 63.14(b)) provided that percent R as determined in Annex A5 of ASTM D6348-03 is equal or greater than 70 percent and less than or equal to 130 percent.
(7) Each press that processes board containing MDI resin.	Measure emissions of MDI	Method 320 in appendix A to 40 CFR part 63; OR Conditional Test Method (CTM) 031 which is posted on http://www.epa.gov/ttn/emc/ctm.html
(8) Each direct-fired process unit	Measure emissions of the following HAP metals: arsenic, beryllium, cadmium, chromium, lead, manganese, and nickel.	Method 29 in appendix A to 40 CFR part 60.
(9) Each reconstituted wood product press or reconstituted wood product board cooler with a HAP control device.	Meet the design specifications included in the definition of wood products enclosure in § 63.2292 of subpart DDDD of 40 CFR part 63. Or Determine the percent capture efficiency of the enclosure directing emissions to an add-on control device.	Methods 204 and 204A through 204F of 40 CFR part 51, appendix M to determine capture efficiency (except for wood products enclosures as defined in § 63.2292). Enclosures that meet the definition of wood products enclosure or that meet Method 204 requirements for a PTE are assumed to have a capture efficiency of 100 percent. Enclosures that do not meet either the PTE requirements or design criteria for a wood products enclosure must determine the capture efficiency by constructing a TTE according to the requirements of Method 204 and applying Methods 204A through 204F (as appropriate). As an alternative to Methods 204 and 204A through 204F, you may use the tracer gas method contained in appendix A to subpart DDDD.
(10) Each reconstituted wood product press or reconstituted wood product board cooler.	Determine the percent capture efficiency	A TTE and Methods 204 and 204A through 204F (as appropriate) of 40 CFR part 51, appendix M. As an alternative to installing a TTE and using Methods 204 and 204A through 204F, you may use the tracer gas method contained in appendix A to subpart DDDD.
(11) Each process unit with a HAP control device.	Establish the site-specific operating requirements (including the parameter limits or THC concentration limits) in Table 2 to subpart DDDD.	Data from the parameter monitoring system or THC CEMS and the applicable performance test method(s).

¹ If EPA approves that your process unit will not emit detectable amounts of benzene or acrolein, that unit may be excluded from the benzene and/or acrolein (as applicable) testing requirement in this table.

Table 3 to Appendix B to Subpart DDDD of 40 CFR part 63.--Maximum Allowable Toxicity-Weighted Carcinogen Emission Rate (lb/hr)/([μg/m³])

Stack height (m)	Distance to nearest residence (m)											
	0	50	100	150	200	250	500	1000	1500	2000	3000	5000
5	8.72E-07	8.72E-07	8.72E-07	9.63E-07	1.25E-06	1.51E-06	2.66E-06	4.25E-06	4.39E-06	4.39E-06	4.39E-06	5.00E-06
10	2.47E-06	2.47E-06	2.47E-06	2.47E-06	2.47E-06	2.61E-06	3.58E-06	5.03E-06	5.89E-06	5.89E-06	5.89E-06	6.16E-06
20	5.81E-06	5.81E-06	5.81E-06	5.81E-06	5.81E-06	5.81E-06	5.90E-06	7.39E-06	8.9E-06	9.97E-06	9.97E-06	1.12E-05
30	7.74E-06	7.74E-06	7.74E-06	7.74E-06	7.74E-06	7.74E-06	8.28E-06	9.49E-06	1.17E-05	1.35E-05	1.55E-05	1.61E-05
40	9.20E-06	9.20E-06	9.20E-06	9.20E-06	9.20E-06	9.20E-06	9.24E-06	1.17E-05	1.34E-05	1.51E-05	1.98E-05	2.22E-05
50	1.02E-05	1.02E-05	1.02E-05	1.02E-05	1.02E-05	1.02E-05	1.02E-05	1.36E-05	1.53E-05	1.66E-05	2.37E-05	2.95E-05
60	1.13E-05	1.13E-05	1.13E-05	1.13E-05	1.13E-05	1.13E-05	1.13E-05	1.53E-05	1.76E-05	1.85E-05	2.51E-05	3.45E-05
70	1.23E-05	1.23E-05	1.23E-05	1.23E-05	1.23E-05	1.23E-05	1.23E-05	1.72E-05	2.04E-05	2.06E-05	2.66E-05	4.07E-05
80	1.34E-05	1.34E-05	1.34E-05	1.34E-05	1.34E-05	1.34E-05	1.34E-05	1.92E-05	2.15E-05	2.31E-05	2.82E-05	4.34E-05
100	1.52E-05	1.52E-05	1.52E-05	1.52E-05	1.52E-05	1.52E-05	1.52E-05	1.97E-05	2.4E-05	2.79E-05	3.17E-05	4.49E-05
200	1.76E-05	1.76E-05	1.76E-05	1.76E-05	1.76E-05	1.76E-05	1.76E-05	2.06E-05	2.94E-05	3.24E-05	4.03E-05	5.04E-05

Emission rates in table expressed as equivalents normalized to theoretical HAP with URE = 1([μg/m³)]-1

Table 4 to Appendix B to Subpart DDDD of 40 CFR Part 63.--Maximum Allowable Toxicity-Weighted Noncarcinogen Emission Rate ((lb/hr)/[μg/m³])

Stack height (m)	Distance to Property Boundary (m)											
	0	50	100	150	200	250	500	1000	1500	2000	3000	5000
5	2.51E-01	2.51E-01	3.16E-01	3.16E-01	3.16E-01	3.16E-01	3.16E-01	3.46E-01	4.66E-01	6.21E-01	9.82E-01	1.8E+00
10	5.62E-01	5.62E-01	5.62E-01	5.62E-01	5.62E-01	5.62E-01	5.62E-01	5.7E-01	6.33E-01	7.71E-01	1.13E+00	1.97E+00
20	1.43E+00	1.43E+00	1.43E+00	1.43E+00	1.43E+00	1.43E+00	1.43E+00	1.43E+00 1.43E+000	1.68E+00	1.83E+00	2.26E+00	3.51E+00
30	2.36E+00	2.36E+00	2.36E+00	2.36E+00	2.36E+00	2.36E+00	2.53E+00	3.04E+00	3.04E+00	3.33E+00	4.45E+00	5.81E+00
40	3.11E+00	3.11E+00	3.11E+00	3.11E+00	3.11E+00	3.11E+00	3.42E+00	4.04E+00	5.07E+00	5.51E+00	6.39E+00	9.63E+00
50	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	4.49E+00	4.92E+00	6.95E+00	7.35E+00	8.99E+00	1.25E+01
60	4.83E+00	4.83E+00	4.83E+00	4.83E+00	4.83E+00	4.83E+00	5.56E+00	6.13E+00	7.8E+00	1.01E+01	1.1E+01	1.63E+01
70	5.77E+00	5.77E+00	5.77E+00	5.77E+00	5.77E+00	5.77E+00	6.45E+00	7.71E+00	8.83E+00	1.18E+01	1.36E+01	1.86E+01
80	6.74E+00	6.74E+00	6.74E+00	6.74E+00	6.74E+00	6.74E+00	7.12E+00	9.5E+00	1.01E+01	1.29E+01	1.72E+01	2.13E+01
100	8.87E+00	8.87E+00	8.87E+00	8.87E+00	8.87E+00	8.87E+00	8.88E+00	1.19E+01	1.37E+01	1.55E+01	2.38E+01	2.89E+01
200	1.7E+01	1.7E+01	1.7E+01	1.7E+01	1.7E+01	1.7E+01	1.7E+01	2.05E+01	2.93E+01	3.06E+01	4.02E+01	4.93E+01

Emission rates in table expressed in lbs/hr as equivalents normalized to theoretical HAP with RfC = 1.0 [μg/m³].