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Title 22@ Social Security

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Division 4.5@ Environmental Health Standards for the Management of Hazardous Waste

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Chapter 16@ Recyclable Materials (Recyclable Hazardous Wastes)

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Article 8@ Hazardous Waste Burned in Boilers and Industrial Furnaces

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Section 66266.112@ Regulation of Residues

66266.112 Regulation of Residues

A residue derived from the burning or processing of hazardous waste in a boiler or industrial furnace is not excluded from the definition of hazardous waste under Health and Safety Code Section 25143.1 unless the device and the owner or operator meet the following requirements:

(a)

The device meets the following criteria: (1) Boilers. Boilers shall burn at least 50% coal on a total heat input or mass input basis, whichever results in the greater mass feed rate of coal; (2) Ore or mineral furnaces. Industrial furnaces burning wastes which are exempt from regulation pursuant to Health and Safety Code, section 25143.1 shall process at least 50% by weight normal, nonhazardous raw materials; (3) Cement kilns. Cement kilns shall process at least 50% by weight normal cement-production raw materials;

(1)

Boilers. Boilers shall burn at least 50% coal on a total heat input or mass input basis, whichever results in the greater mass feed rate of coal;

(2)

Ore or mineral furnaces. Industrial furnaces burning wastes which are exempt from regulation pursuant to Health and Safety Code, section 25143.1 shall process at least 50% by weight normal, nonhazardous raw materials;

(3)

Cement kilns. Cement kilns shall process at least 50% by weight normal cement-production raw materials;

(b)

The owner or operator demonstrates that the hazardous waste does not significantly affect the residue by demonstrating conformance with either of the following criteria: (1) Comparison of waste-derived residue with normal residue. The waste-derived residue shall not contain appendix VIII, chapter 11 constituents (toxic constituents) that could reasonably be attributable to the hazardous waste at concentrations significantly higher than in residue generated without burning or processing of hazardous waste, using the following procedure. Toxic compounds that could reasonably be attributable to burning or processing the hazardous waste (constituents of concern) include toxic constituents in the hazardous waste, and the organic compounds listed in appendix VIII of this chapter that may be generated as products of incomplete combustion. Sampling and analyses shall be in conformance with procedures prescribed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, incorporated by reference in section 66260.11(a) of this division. (A) Normal residue. Concentrations of toxic constituents of concern in normal residue shall be determined based on analyses of a minimum of 10 samples representing a minimum of 10 days of operation. Composite samples may be used to develop a sample for analysis provided that the compositing period does not exceed 24 hours. The upper tolerance limit (at 95% confidence with a 95% proportion of the sample distribution) of the concentration in the normal residue shall be considered the statistically-derived concentration in the normal residue. If changes in raw materials or fuels reduce the statistically-derived concentrations of the toxic constituents of concern in the normal residue, the statistically-derived concentrations shall be revised or

statistically-derived concentrations of toxic constituents in normal residue shall be established for a new mode of operation with the new raw material or fuel. To determine the upper tolerance limit in the normal residue, the owner or operator shall use statistical procedures prescribed in "Statistical Methodology for Bevill Residue Determinations" in appendix IX of this chapter. (B) Waste-derived residue. Waste-derived residue shall be sampled and analyzed as often as necessary to determine whether the residue generated during each 24-hour period has concentrations of toxic constituents that are higher than the concentrations established for the normal residue under subsection (b)(1)(A) of this section. If so, hazardous waste burning has significantly affected the residue and the residue shall not be excluded from the definition of a hazardous waste. Concentrations of toxic constituents of concern in the waste-derived residue shall be determined based on analysis of one or more samples obtained over a 24-hour period. Multiple samples may be analyzed, and multiple samples may be taken to form a composite sample for analysis provided that the sampling period does not exceed 24 hours. If in more than one sample is analyzed to characterize waste-derived residues generated over a 24-hour period, the concentration of each toxic constituent shall be the arithmetic mean of the concentrations in the samples. No results may be disregarded; or (2) Comparison of waste-derived residue concentrations with health-based limits-(A) Nonmetal constituents. The concentration of each nonmetal toxic constituent of concern (specified in subsection (b)(1) of this section) in the waste-derived residue shall not exceed the health-based level specified in appendix VII of this chapter, or the level of detection (using analytical procedures prescribed in SW-846), whichever is higher. If a health-based limit for a constituent of concern is not listed in appendix VII of this chapter, then a limit of 0.002 micrograms per kilogram or the level of

detection (using analytical procedures prescribed in SW-846), whichever is higher, shall be used. The levels specified in appendix VII of this chapter (and the default level of 0.002 micrograms per kilogram or the level of detection for constituents as identified in Note 1 of appendix VII of this chapter) are administratively stayed under the condition, for those constituents specified in subsection (b)(1) of this section, that the owner or operator complies with alternative levels defined as the land disposal restriction limits specified in section 66268.43 of this division for F039 nonwastewaters. In complying with those alternative levels, if an owner or operator is unable to detect a constituent despite documenting use of best good-faith efforts as defined by applicable Department guidance or standards, the owner or operator is deemed to be in compliance for that constituent. Until new guidance or standards are developed, the owner or operator may demonstrate such good-faith efforts by achieving a detection limit for the constituent that does not exceed an order of magnitude above the level provided by section 66268.43 for F039 nonwastewaters; and (B) Metal constituents. The concentration of metals in an extract obtained using the Toxicity Characteristic Leaching Procedure of section 66261.24 of chapter 11 of this division shall not exceed the levels specified in appendix VII of this chapter; and (C) Sampling and analysis.

Waste-derived residue shall be sampled and analyzed as often as necessary to determine whether the residue generated during each 24-hour period has concentrations of toxic constituents that are higher than the health-based levels. Concentrations of toxic constituents of concern in the waste-derived residue shall be determined based on analysis of one or more samples obtained over a 24-hour period. Multiple samples may be analyzed and multiple samples may be taken to form a composite sample for analysis provided that the sampling period does not exceed 24 hours. If more than one sample is analyzed to characterize

waste-derived residues generated over a 24-hour period, the concentration of each toxic constituent shall be the arithmetic mean of the concentrations in the samples. No results may be disregarded; and

(1)

Comparison of waste-derived residue with normal residue. The waste-derived residue shall not contain appendix VIII, chapter 11 constituents (toxic constituents) that could reasonably be attributable to the hazardous waste at concentrations significantly higher than in residue generated without burning or processing of hazardous waste, using the following procedure. Toxic compounds that could reasonably be attributable to burning or processing the hazardous waste (constituents of concern) include toxic constituents in the hazardous waste, and the organic compounds listed in appendix VIII of this chapter that may be generated as products of incomplete combustion. Sampling and analyses shall be in conformance with procedures prescribed in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, incorporated by reference in section 66260.11(a) of this division. (A) Normal residue. Concentrations of toxic constituents of concern in normal residue shall be determined based on analyses of a minimum of 10 samples representing a minimum of 10 days of operation. Composite samples may be used to develop a sample for analysis provided that the compositing period does not exceed 24 hours. The upper tolerance limit (at 95% confidence with a 95% proportion of the sample distribution) of the concentration in the normal residue shall be considered the statistically-derived concentration in the normal residue. If changes in raw materials or fuels reduce the statistically-derived concentrations of the toxic constituents of concern in the normal residue, the statistically-derived concentrations shall be revised or statistically-derived concentrations of toxic constituents in normal residue shall be established for a new mode of operation with the new raw material or fuel. To determine the upper tolerance limit in the normal

residue, the owner or operator shall use statistical procedures prescribed in "Statistical Methodology for Bevill Residue Determinations" in appendix IX of this chapter. (B) Waste-derived residue. Waste-derived residue shall be sampled and analyzed as often as necessary to determine whether the residue generated during each 24-hour period has concentrations of toxic constituents that are higher than the concentrations established for the normal residue under subsection (b)(1)(A) of this section. If so, hazardous waste burning has significantly affected the residue and the residue shall not be excluded from the definition of a hazardous waste. Concentrations of toxic constituents of concern in the waste-derived residue shall be determined based on analysis of one or more samples obtained over a 24-hour period. Multiple samples may be analyzed, and multiple samples may be taken to form a composite sample for analysis provided that the sampling period does not exceed 24 hours. If in more than one sample is analyzed to characterize waste-derived residues generated over a 24-hour period, the concentration of each toxic constituent shall be the arithmetic mean of the concentrations in the samples. No results may be disregarded; or

(A)

Normal residue. Concentrations of toxic constituents of concern in normal residue shall be determined based on analyses of a minimum of 10 samples representing a minimum of 10 days of operation. Composite samples may be used to develop a sample for analysis provided that the compositing period does not exceed 24 hours. The upper tolerance limit (at 95% confidence with a 95% proportion of the sample distribution) of the concentration in the normal residue shall be considered the statistically-derived concentration in the normal residue. If changes in raw materials or fuels reduce the statistically-derived concentrations of the toxic constituents of concern in the normal residue, the statistically-derived concentrations shall be revised or statistically-derived concentrations of toxic constituents in normal residue shall be established for a new mode of operation with the new raw material or

fuel. To determine the upper tolerance limit in the normal residue, the owner or operator shall use statistical procedures prescribed in "Statistical Methodology for Bevill Residue Determinations" in appendix IX of this chapter.

(B)

Waste-derived residue. Waste-derived residue shall be sampled and analyzed as often as necessary to determine whether the residue generated during each 24-hour period has concentrations of toxic constituents that are higher than the concentrations established for the normal residue under subsection (b)(1)(A) of this section. If so, hazardous waste burning has significantly affected the residue and the residue shall not be excluded from the definition of a hazardous waste. Concentrations of toxic constituents of concern in the waste-derived residue shall be determined based on analysis of one or more samples obtained over a 24-hour period. Multiple samples may be analyzed, and multiple samples may be taken to form a composite sample for analysis provided that the sampling period does not exceed 24 hours. If in more than one sample is analyzed to characterize waste-derived residues generated over a 24-hour period, the concentration of each toxic constituent shall be the arithmetic mean of the concentrations in the samples. No results may be disregarded; or

(2)

Comparison of waste-derived residue concentrations with health-based limits-(A) Nonmetal constituents. The concentration of each nonmetal toxic constituent of concern (specified in subsection (b)(1) of this section) in the waste-derived residue shall not exceed the health-based level specified in appendix VII of this chapter, or the level of detection (using analytical procedures prescribed in SW-846), whichever is higher. If a health-based limit for a constituent of concern is not listed in appendix VII of this chapter, then a limit of 0.002 micrograms per kilogram or the level of detection (using analytical procedures prescribed in SW-846), whichever is higher, shall be used.

The levels specified in appendix VII of this chapter (and the default level of 0.002 micrograms per kilogram or the level of detection for constituents as identified in Note 1 of appendix VII of this chapter) are administratively stayed under the condition, for those constituents specified in subsection (b)(1) of this section, that the owner or operator complies with alternative levels defined as the land disposal restriction limits specified in section 66268.43 of this division for F039 nonwastewaters. In complying with those alternative levels, if an owner or operator is unable to detect a constituent despite documenting use of best good-faith efforts as defined by applicable Department guidance or standards, the owner or operator is deemed to be in compliance for that constituent. Until new guidance or standards are developed, the owner or operator may demonstrate such good-faith efforts by achieving a detection limit for the constituent that does not exceed an order of magnitude above the level provided by section 66268.43 for F039 nonwastewaters; and (B) Metal constituents. The concentration of metals in an extract obtained using the Toxicity Characteristic Leaching Procedure of section 66261.24 of chapter 11 of this division shall not exceed the levels specified in appendix VII of this chapter; and (C) Sampling and analysis. Waste-derived residue shall be sampled and analyzed as often as necessary to determine whether the residue generated during each 24-hour period has concentrations of toxic constituents that are higher than the health-based levels. Concentrations of toxic constituents of concern in the waste-derived residue shall be determined based on analysis of one or more samples obtained over a 24-hour period. Multiple samples may be analyzed and multiple samples may be taken to form a composite sample for analysis provided that the sampling period does not exceed 24 hours. If more than one sample is analyzed to characterize waste-derived residues generated over a 24-hour period, the concentration of each toxic constituent shall be the arithmetic mean of the concentrations in the samples. No results may be

disregarded; and

(A)

Nonmetal constituents. The concentration of each nonmetal toxic constituent of concern (specified in subsection (b)(1) of this section) in the waste-derived residue shall not exceed the health-based level specified in appendix VII of this chapter, or the level of detection (using analytical procedures prescribed in SW-846), whichever is higher. If a health-based limit for a constituent of concern is not listed in appendix VII of this chapter, then a limit of 0.002 micrograms per kilogram or the level of detection (using analytical procedures prescribed in SW-846), whichever is higher, shall be used. The levels specified in appendix VII of this chapter (and the default level of 0.002 micrograms per kilogram or the level of detection for constituents as identified in Note 1 of appendix VII of this chapter) are administratively stayed under the condition, for those constituents specified in subsection (b)(1) of this section, that the owner or operator complies with alternative levels defined as the land disposal restriction limits specified in section 66268.43 of this division for F039 nonwastewaters. In complying with those alternative levels, if an owner or operator is unable to detect a constituent despite documenting use of best good-faith efforts as defined by applicable Department guidance or standards, the owner or operator is deemed to be in compliance for that constituent. Until new guidance or standards are developed, the owner or operator may demonstrate such good-faith efforts by achieving a detection limit for the constituent that does not exceed an order of magnitude above the level provided by section 66268.43 for F039 nonwastewaters; and

(B)

Metal constituents. The concentration of metals in an extract obtained using the Toxicity Characteristic Leaching Procedure of section 66261.24 of chapter 11 of this division shall not exceed the levels specified in appendix VII of this chapter; and

(C)

Sampling and analysis. Waste-derived residue shall be sampled and analyzed as often as necessary to determine whether the residue generated during each 24-hour period has concentrations of toxic constituents that are higher than the health-based levels.

Concentrations of toxic constituents of concern in the waste-derived residue shall be determined based on analysis of one or more samples obtained over a 24-hour period.

Multiple samples may be analyzed and multiple samples may be taken to form a composite sample for analysis provided that the sampling period does not exceed 24 hours. If more than one sample is analyzed to characterize waste-derived residues generated over a 24-hour period, the concentration of each toxic constituent shall be the arithmetic mean of the concentrations in the samples. No results may be disregarded; and

(c)

Records sufficient to document compliance with the provisions of this section shall be retained until closure of the boiler or industrial furnace unit. At a minimum, the following shall be recorded. (1) Levels of constituents in appendix VIII, chapter 11, that are present in waste-derived residues; (2) If the waste-derived residue is compared with normal residue under subsection (b)(1) of this section: (A) The levels of constituents in appendix VIII, chapter 11, that are present in normal residues; and (B) Data and information, including analyses of samples as necessary, obtained to determine if changes in raw materials or fuels would reduce the concentration of toxic constituents of concern in the normal residue.

(1)

Levels of constituents in appendix VIII, chapter 11, that are present in waste-derived residues;

(2)

If the waste-derived residue is compared with normal residue under subsection (b)(1) of this section: (A) The levels of constituents in appendix VIII, chapter 11, that are

present in normal residues; and (B) Data and information, including analyses of samples as necessary, obtained to determine if changes in raw materials or fuels would reduce the concentration of toxic constituents of concern in the normal residue.

(A)

The levels of constituents in appendix VIII, chapter 11, that are present in normal residues; and

(B)

Data and information, including analyses of samples as necessary, obtained to determine if changes in raw materials or fuels would reduce the concentration of toxic constituents of concern in the normal residue.