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DEPARTMENT OF HEALTH

Compilation of Chapter 11-266
Hawaii Administrative Rules

SEP 2 1999.

SUMMARY

1. Chapter 11-266 is compiled.

HAWAII ADMINISTRATIVE RULES

TITLE 11

DEPARTMENT OF HEALTH

CHAPTER 266

HAZARDOUS WASTE MANAGEMENT

STANDARDS FOR THE MANAGEMENT OF SPECIFIC HAZARDOUS WASTES AND SPECIFIC TYPES OF HAZARDOUS WASTE MANAGEMENT FACILITIES

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SUBCHAPTER A

GENERAL PROVISIONS

§11-266-1 Construction. All references in tables and appendices to provisions of the code of federal regulations shall be construed to mean the State rule analogue of the referenced federal regulation (for example, 40 CFR 260.1 shall be construed to mean section 11-260-1 of the Hawaii Administrative Rules). [Eff 6/18/94; comp SEP 20 1999] (Auth: HRS §§342J-4, 342J-31, 342J-35) (Imp: None)

SUBCHAPTER B

[RESERVED]

SUBCHAPTER C

RECYCLABLE MATERIALS USED IN A MANNER CONSTITUTING DISPOSAL

§11-266-20 Applicability. (a) The rules of this subchapter apply to recyclable materials that are applied to or placed on the land:

(1) Without mixing with any other substance(s); or

(2) After mixing or combination with any other substance(s). These materials will be referred to throughout this subchapter as ''materials used in a manner that constitutes disposal.''

(b) Products produced for the general public's use that are used in a manner that constitutes disposal and that contain recyclable materials are not presently subject to regulation if the recyclable materials have undergone a chemical reaction in the course of producing the products so as to become inseparable by physical means and if such products meet the applicable treatment standards in subchapter D of chapter 11-268 (or applicable prohibition levels in section 11-268-32 or RCRA section 3004(d) (1984), where no treatment standards have been established) for each recyclable material (i.e., hazardous waste) that they contain. Commercial fertilizers that are produced for the general public's use that contain recyclable materials also are not presently subject to regulation provided they meet these same treatment standards or prohibition levels for each recyclable material that they contain. However, zinc-containing fertilizers using hazardous waste K061 that are produced for the general public's use are not presently subject to regulation.

(c) Anti-skid/deicing uses of slags, which are generated from high temperature metals recovery (HTMR) processing of hazardous waste K061, K062, and F006, in a manner constituting

disposal are not covered by the exemption in subsection (b) and remain subject to regulation. [Eff 6/18/94; am 3/13/99; comp SEP 20 1999] (Auth: HRS §§342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.20)

§11-266-21 Standards applicable to generators and transporters of materials used in a manner that constitute disposal. Generators and transporters of materials that are used in a manner that constitutes disposal are subject to the applicable requirements of chapters 11-262 and 11-263, and the notification requirement under HRS section 342J-6.5. [Eff 6/18/94; comp SEP 20 1999] (Auth: HRS §§342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.21)

§11-266-22 Standards applicable to storers of materials that are to be used in a manner that constitutes disposal who are not the ultimate users. Owners or operators of facilities that store recyclable materials that are to be used in a manner that constitutes disposal, but who are not the ultimate users of the materials, are regulated under all applicable provisions of subchapters A through L of chapters 11-264 and 11-265 and chapters 11-270 and 11-271 and the notification requirement under HRS section 342J-6.5. [Eff 6/18/94; comp SEP 20 1999] (Auth: HRS §§342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.22)

§11-266-23 Standards applicable to users of materials that are used in a manner that constitutes disposal. (a) Owners or operators of facilities that use recyclable materials in a manner that constitutes disposal are regulated under all applicable provisions of subchapters A through N of chapters 11-264 and 11-265, and chapters 11-268, 11-270 and 11-271 and the notification requirement under section 342J-6.5, HRS. (These requirements do not apply to products which contain these recyclable materials under the provisions of subsection 11-266-20(b).)

(b) The use of waste or used oil or other material, which is contaminated with dioxin or any other hazardous waste (other than a waste identified solely on the basis of ignitability), for dust suppression or road treatment is prohibited. [Eff 3/18/94; am 3/13/99; comp SEP 20 1999] (Auth: HRS §§342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.23)

SUBCHAPTERS D - E

[RESERVED]

SUBCHAPTER F

RECYCLABLE MATERIALS UTILIZED FOR PRECIOUS METAL RECOVERY

§11-266-70 Applicability and requirements. (a) The rules of this subchapter apply to recyclable materials that are reclaimed to recover economically significant amounts of gold, silver, platinum, paladium, irridium, osmium, rhodium, ruthenium, or any combination of these.

(b) Persons who generate, transport, or store recyclable materials that are regulated under this subchapter are subject to the following requirements:

(1) Notification requirements under section 342J-6.5, HRS;

(2) Subchapter B of chapter 11-262 (for generators), sections 11-263-20 and 11-263-21 (for transporters), and sections 11-265-71 and 11-265-72 (for persons who store); and

(3) For precious metals exported to or imported from designated Organization for Economic Cooperation and Development (OECD) member countries for recovery are subject to subchapter H of chapter 11-262 and section 11-265-12(a)(2). For precious metals exported to or imported from non-OECD countries for recovery, subchapters E and F of chapter 11-262.

(c) Persons who store recycled materials that are regulated under this subchapter must keep the following records to document that they are not accumulating these materials speculatively (as defined in subsection 11-261-1(c));

(1) Records showing the volume of these materials stored at the beginning of the calendar year;

(2) The amount of these materials generated or received during the calendar year; and

(3) The amount of materials remaining at the end of the calendar year.

(d) Recyclable materials that are regulated under this subchapter that are accumulated speculatively (as defined in subsection 11-261-1(c)) are subject to all applicable provisions of chapters 11-262 through 11-265, 11-270 and 11-271. [Eff 3/18/94; am 3/13/99; comp SEP 20 1999] (Auth: HRS §§342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.70)

SUBCHAPTER G

SPENT LEAD-ACID BATTERIES BEING RECLAIMED

§11-266-80 Applicability and requirements. (a) The rules of this subchapter apply to persons who reclaim (including regeneration) spent lead-acid batteries that are recyclable materials (''spent batteries''). Persons who generate, transport,

or collect spent batteries, who regenerate spent batteries, or who store spent batteries but do not reclaim them (other than spent batteries that are to be regenerated) are not subject to regulation under chapters 11-262 through 11-266 or chapter 11-270 or 11-271, and also are not subject to the requirements of section 342J-6.5, HRS.

(b) Owners or operators of facilities that store spent lead- acid batteries before reclaiming (other than spent batteries that are to be regenerated) them are subject to the following requirements.

(1) Notification requirements under section 342J-6.5, HRS.

(2) All applicable provisions in subchapters A, B (but not section 11-264-13 (waste analysis)), C, D, E (but not section 11-264-71 or section 11-264-72 (dealing with the use of the manifest and manifest discrepancies)), and F through L of chapter 11-264;

(3) All applicable provisions in subchapters A, B (but not section 11-265-13 (waste analysis)), C, D, E (but not sections 11-265-71 and 11-265-72 (dealing with use of the manifest and manifest discrepancies)), and F through L of chapter 11-265;

(4) All applicable provisions in chapters 11-270 and 11-271. [Eff 6/18/94; am 3/13/99; comp SEP 20 1999] (Auth: HRS §§342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.80)

SUBCHAPTER H

HAZARDOUS WASTE BURNED IN BOILERS AND INDUSTRIAL FURNACES

§11-266-100 Applicability. (a) The regulations of this subchapter apply to hazardous waste burned or processed in a boiler or industrial furnace (as defined in section 11-260-10) irrespective of the purpose of burning or processing, except as provided by subsections (b), (c), (d), and (f) of this section. In this subchapter, the term "burn" means burning for energy recovery or destruction, or processing for materials recovery or as an ingredient. The emissions standards of sections 11-266-104, 11-266-105, 11-266-106, and 11-266-107 apply to facilities operating under interim status or under a RCRA or hazardous waste management operating permit as specified in sections 11-266-102 and 11-266-103.

(b) The following hazardous wastes and facilities are not subject to regulation under this subchapter:

(1) Used oil burned for energy recovery that is also a hazardous waste solely because it exhibits a characteristic of hazardous waste identified in subchapter C of chapter 11-261. Such used oil is subject to regulation under chapter 11-279;

(2) Gas recovered from hazardous or solid waste landfills when such gas is burned for energy recovery;

(3) Hazardous wastes that are exempt from regulation under section 11-261-4 and clauses 11-261-6(a)(3)(iv) through (vi), and hazardous wastes that are subject to the special requirements for conditionally exempt small quantity generators under section 11-261-5; and

(4) Coke ovens, if the only hazardous waste burned is EPA Hazardous Waste No. K087, decanter tank tar sludge from coking operations.

(c) Owners and operators of smelting, melting, and refining furnaces (including pyrometallurgical devices such as cupolas, sintering machines, roasters, and foundry furnaces, but not including cement kilns, aggregate kilns, or halogen acid furnaces burning hazardous waste) that process hazardous waste solely for metal recovery are conditionally exempt from regulation under this subchapter, except for sections 11-266-101 and 11-266-112.

(1) To be exempt from sections 11-266-102 through 11-266-111, an owner or operator of a metal recovery furnace or mercury recovery furnace, must comply with the following requirements, except that an owner or operator of a lead or a nickel-chromium recovery furnace, or a metal recovery furnace that burns baghouse bags used to capture metallic dusts emitted by steel manufacturing, must comply with the requirements of paragraph (c)(3):

(i) Provide a one-time written notice to the director indicating the following:

(A) The owner or operator claims exemption under this subsection;

(B) The hazardous waste is burned solely for metal recovery consistent with the provisions of paragraph (c)(2);

(C) The hazardous waste contains recoverable levels of metals; and

(D) The owner or operator will comply with the sampling and analysis and recordkeeping requirements of this subsection;

(ii) Sample and analyze the hazardous waste and other feedstocks as necessary to comply with the requirements of this subsection under procedures specified by Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, incorporated by reference in section 11-260-11 or alternative methods that meet or exceed the SW-846 method performance capabilities. If SW-846 does not prescribe a method for a particular determination, the owner or operator shall use the best available method; and

(iii) Maintain at the facility for at least three years

records to document compliance with the provisions of this subsection including limits on levels of toxic organic constituents and Btu value of the waste, and levels of recoverable metals in the hazardous waste compared to normal nonhazardous waste feedstocks.

(2) A hazardous waste meeting either of the following criteria is not processed solely for metal recovery:

(i) The hazardous waste has a total concentration of organic compounds listed in chapter 11-261, appendix VIII, exceeding five-hundred ppm by weight, as-fired, and so is considered to be burned for destruction. The concentration of organic compounds in a waste as-generated may be reduced to the five-hundred ppm limit by bona fide treatment that removes or destroys organic constituents. Blending for dilution to meet the five-hundred ppm limit is prohibited and documentation that the waste has not been impermissibly diluted must be retained in the records required by subparagraph (c)(1)(iii); or

(ii) The hazardous waste has a heating value of five-thousand Btu/lb or more, as-fired, and so is considered to be burned as fuel. The heating value of a waste as-generated may be reduced to below the five-thousand Btu/lb limit by bona fide treatment that removes or destroys organic constituents. Blending for dilution to meet the five-thousand Btu/lb limit is prohibited and documentation that the waste has not been impermissibly diluted must be retained in the records required by subparagraph (c)(1)(iii).

(3) To be exempt from sections 11-266-102 through 11-266-111, an owner or operator of a lead or nickel-chromium or mercury recovery furnace, or a metal recovery furnace that burns baghouse bags used to capture metallic dusts emitted by steel manufacturing, must provide a one-time written notice to the director identifying each hazardous waste burned and specifying whether the owner or operator claims an exemption for each waste under this paragraph or paragraph (c)(1). The owner or operator must comply with the requirements of paragraph (c)(1) for those wastes claimed to be exempt under that paragraph and must comply with the requirements below for those wastes claimed to be exempt under this paragraph (c)(3).

(i) The hazardous wastes listed in appendices XI, XII, and XIII, chapter 11-266, and baghouse bags used to capture metallic dusts emitted by steel manufacturing are exempt from the requirements of

paragraph (c)(1), provided that:

(A) A waste listed in appendix IX must contain recoverable levels of lead, a waste listed in appendix XII must contain recoverable levels of nickel or chromium, a waste listed in appendix XIII must contain recoverable levels of mercury and contain less than 500 ppm of chapter 11-261, appendix VIII organic constituents, and baghouse bags used to capture metallic dusts emitted by steel manufacturing must contain recoverable levels of metal; and

(B) The waste does not exhibit the Toxicity Characteristic of section 11-261-24 for an organic constituent; and

(C) The waste is not a hazardous waste listed in subchapter D of chapter 11-261 because it is listed for an organic constituent as identified in appendix VII of chapter 11-261; and

(D) The owner or operator certifies in the one-time notice that hazardous waste is burned under the provisions of paragraph (c)(3) and that sampling and analysis will be conducted or other information will be obtained as necessary to ensure continued compliance with these requirements. Sampling and analysis shall be conducted according to subparagraph (c)(1)(ii) and records to document compliance with paragraph (c)(3) shall be kept for at least three years.

(ii) The director may decide on a case-by-case basis that the toxic organic constituents in a material listed in appendix XI, XII, or XIII that contains a total concentration of more than five-hundred ppm toxic organic compounds listed in appendix VIII, chapter 11-261, may pose a hazard to human health and the environment when burned in a metal recovery furnace exempt from the requirements of this subchapter. In that situation, after adequate notice and opportunity for comment, the metal recovery furnace will become subject to the requirements of this subchapter when burning that material. In making the hazard determination, the director will consider the following factors:

(A) The concentration and toxicity of organic constituents in the material; and

(B) The level of destruction of toxic organic constituents provided by the furnace; and

(C) Whether the acceptable ambient levels

established in appendices IV or V may be exceeded for any toxic organic compound that may be emitted based on dispersion modeling to predict the maximum annual average off-site ground level concentration.

(d) The standards for direct transfer operations under section 11-266-111 apply only to facilities subject to the permit standards of section 11-266-102 or the interim status standards of section 11-266-103.

(e) The management standards for residues under section 11-266-112 apply to any boiler or industrial furnace burning hazardous waste.

(f) Owners and operators of smelting, melting, and refining furnaces (including pyrometallurgical devices such as cupolas, sintering machines, roasters, and foundry furnaces) that process hazardous waste for recovery of economically significant amounts of the precious metals gold, silver, platinum, palladium, iridium, osmium, rhodium, or ruthenium, or any combination of these are conditionally exempt from regulation under this subchapter, except for section 11-266-112. To be exempt from sections 11-266-101 through 11-266-111, an owner or operator must:

(1) Provide a one-time written notice to the director indicating the following:

(i) The owner or operator claims exemption under this subsection;

(ii) The hazardous waste is burned for legitimate recovery of precious metal; and

(iii) The owner or operator will comply with the sampling and analysis and recordkeeping requirements of this paragraph; and

(2) Sample and analyze the hazardous waste as necessary to document that the waste is burned for recovery of economically significant amounts of precious metal using procedures specified by Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, incorporated by reference in section 11-260-11 or alternative methods that meet or exceed the SW-846 method performance capabilities. If SW-846 does not prescribe a method for a particular determination, the owner or operator shall use the best available method; and

(3) Maintain at the facility for at least three years records to document that all hazardous wastes burned are burned for recovery of economically significant amounts of precious metal. [Eff 6/18/94; am 3/13/99; comp SEP 20 1999] (Auth: HRS §§ 342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.100)

§11-266-101 Management prior to burning. (a) Generators. Generators of hazardous waste that is burned in a boiler or industrial furnace are subject to chapter 11-262.

(b) Transporters. Transporters of hazardous waste that is burned in a boiler or industrial furnace are subject to chapter 11-263.

(c) Storage facilities.

(1) Owners and operators of facilities that store hazardous waste that is burned in a boiler or industrial furnace are subject to the applicable provisions of chapters 11-264, 11-265, and 11-270, except as provided by paragraph (c)(2) of this section. These standards apply to storage by the burner as well as to storage facilities operated by intermediaries (processors, blenders, distributors, etc.) between generator and the burner.

(2) Owners and operators of facilities that burn, in an onsite boiler or industrial furnace exempt from regulation under the small quantity burner provisions of section 11-266-108, hazardous waste that they generate are exempt from the regulations of chapters 11-264, 11-265, and 11-270 applicable to storage units for those storage units that store mixtures of hazardous waste and the primary fuel to the boiler or industrial furnace in tanks that feed the fuel mixture directly to the burner. Storage of hazardous waste prior to mixing with the primary fuel is subject to regulation as prescribed in paragraph (c)(1) of this section. [Eff 6/18/94; comp SEP 20 1999] (Auth: HRS §§ 342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.101)

§11-266-102 Permit standards for burners.

(a) Applicability.

(1) General. Owners and operators of boilers and industrial furnaces burning hazardous waste and not operating under interim status must comply with the requirements of this section and sections 11-270-22 and 11-270-66, unless exempt under the small quantity burner exemption of section 11-266-108.

(2) Applicability of chapter 11-264 standards. Owners and operators of boilers and industrial furnaces that burn hazardous waste are subject to the following provisions of chapter 11-264, except as provided otherwise by this subchapter:

(i) In subchapter A (General), section 11-264-4;

(ii) In subchapter B (General facility standards), sections 11-264-11 through 11-264-18;

(iii) In subchapter C (Preparedness and prevention), sections 11-264-31 through 11-264-37;

(iv) In subchapter D (Contingency plan and emergency procedures), sections 11-264-51 through 11-264-56;

(v) In subchapter E (Manifest system, recordkeeping, and reporting), the applicable provisions of sections 11-264-71 through 11-264-77;

(vi) In subchapter F (Corrective Action), sections 11-264-90 and 11-264-101;

(vii) In subchapter G (Closure and post-closure), sections 11-264-111 through 11-264-115;

(viii) In subchapter H (Financial requirements), sections 11-264-141, 11-264-142, 11-264-143, and 11-264-147 through 11-264-151, except that the State and the federal government are exempt from the requirements of subchapter H; and

(ix) Subchapter BB (Air emission standards for equipment leaks), except subsection 11-264-1050(a).

(b) Hazardous waste analysis.

(1) The owner or operator must provide an analysis of the hazardous waste that quantifies the concentration of any constituent identified in appendix VIII of chapter 11-261 that may reasonably be expected to be in the waste. Such constituents must be identified and quantified if present, at levels detectable by analytical procedures prescribed by Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (incorporated by reference, see section 11-260-11). Alternative methods that meet or exceed the method performance capabilities of SW-846 methods may be used. If SW-846 does not prescribe a method for a particular determination, the owner or operator shall use the best available method. The appendix VIII, chapter 11-261 constituents excluded from this analysis must be identified and the basis for their exclusion explained. This analysis will be used to provide all information required by this subchapter and section 11-270-22 and section 11-270-66 and to enable the permit writer to prescribe such permit conditions as necessary to protect human health and the environment. Such analysis must be included as a portion of the Part B permit application, or, for facilities operating under the interim status standards of this subchapter, as a portion of the trial burn plan that may be submitted before the Part B application under provisions of subsection 11-270-66(g) as well as any other analysis required by the permit authority in preparing the permit. Owners and operators of boilers and industrial furnaces not operating under the interim status standards must provide the information required by section 11-270-22 or subsection 11-270-66(c) in the

Part B application to the greatest extent possible.

(2) Throughout normal operation, the owner or operator must conduct sampling and analysis as necessary to ensure that the hazardous waste, other fuels, and industrial furnace feedstocks fired into the boiler or industrial furnace are within the physical and chemical composition limits specified in the permit.

(c) Emissions standards. Owners and operators must comply with emissions standards provided by sections 11-266-104 through 11-266-107.

(d) Permits.

(1) The owner or operator may burn only hazardous wastes specified in the facility permit and only under the operating conditions specified under subsection (e), except in approved trial burns under the conditions specified in section 11-270-66.

(2) Hazardous wastes not specified in the permit may not be burned until operating conditions have been specified under a new permit or permit modification, as applicable. Operating requirements for new wastes may be based on either trial burn results or alternative data included with Part B of a permit application under section 11-270-22.

(3) Boilers and industrial furnaces operating under the interim status standards of section 11-266-103 are permitted under procedures provided by subsection 11-270-66(g).

(4) A permit for a new boiler or industrial furnace (those boilers and industrial furnaces not operating under the interim status standards) must establish appropriate conditions for each of the applicable requirements of this section, including but not limited to allowable hazardous waste firing rates and operating conditions necessary to meet the requirements of subsection (e), in order to comply with the following standards:

(i) For the period beginning with initial introduction of hazardous waste and ending with initiation of the trial burn, and only for the minimum time required to bring the device to a point of operational readiness to conduct a trial burn, not to exceed a duration of seven-hundred and twenty hours operating time when burning hazardous waste, the operating requirements must be those most likely to ensure compliance with the emission standards of sections 11-266-104 through 11-266-107, based on the director's engineering judgment. If the applicant is seeking a waiver from a trial burn to demonstrate conformance with a particular emission standard, the operating requirements during this initial period of operation shall

include those specified by the applicable provisions of sections 11-266-104, 11-266-105, 11-266-106, or section 11-266-107. The director may extend the duration of this period for up to seven-hundred and twenty additional hours when good cause for the extension is demonstrated by the applicant.

(ii) For the duration of the trial burn, the operating requirements must be sufficient to demonstrate compliance with the emissions standards of sections 11-266-104 through 11-266-107 and must be in accordance with the approved trial burn plan;

(iii) For the period immediately following completion of the trial burn, and only for the minimum period sufficient to allow sample analysis, data computation, submission of the trial burn results by the applicant, review of the trial burn results and modification of the facility permit by the director to reflect the trial burn results, the operating requirements must be those most likely to ensure compliance with the emission standards of sections 11-266-104 through 11-266-107 based on the director's engineering judgment.

(iv) For the remaining duration of the permit, the operating requirements must be those demonstrated in a trial burn or by alternative data specified in section 11-270-22, as sufficient to ensure compliance with the emissions standards of sections 11-266-104 through 11-266-107.

(e) Operating requirements --

(1) General. A boiler or industrial furnace burning hazardous waste must be operated in accordance with the operating requirements specified in the permit at all times where there is hazardous waste in the unit.

(2) Requirements to ensure compliance with the organic emissions standards--

(i) DRE standard. Operating conditions will be specified either on a case-by-case basis for each hazardous waste burned as those demonstrated (in a trial burn or by alternative data as specified in section 11-270-22) to be sufficient to comply with the destruction and removal efficiency (DRE) performance standard of subsection 11-266-104(a) or as those special operating requirements provided by paragraph 11-266-104(a)(4) for the waiver of the DRE trial burn. When the DRE trial burn is not waived under paragraph 11-266-104(a)(4), each set of operating requirements will specify the composition of the hazardous waste (including acceptable variations in the physical

and chemical properties of the hazardous waste which will not affect compliance with the DRE performance standard) to which the operating requirements apply. For each such hazardous waste, the permit will specify acceptable operating limits including, but not limited to, the following conditions as appropriate:

(A) Feed rate of hazardous waste and other fuels measured and specified as prescribed in paragraph (e)(6);

(B) Minimum and maximum device production rate when producing normal product expressed in appropriate units, measured and specified as prescribed in paragraph (e)(6);

(C) Appropriate controls of the hazardous waste firing system;

(D) Allowable variation in boiler and industrial furnace system design or operating procedures;

(E) Minimum combustion gas temperature measured at a location indicative of combustion chamber temperature, measured and specified as prescribed in paragraph (e)(6);

(F) An appropriate indicator of combustion gas velocity, measured and specified as prescribed in paragraph (e)(6), unless documentation is provided under section 11-270-66 demonstrating adequate combustion gas residence time; and

(G) Such other operating requirements as are necessary to ensure that the DRE performance standard of subsection 11-266-104(a) is met.

(ii) Carbon monoxide and hydrocarbon standards. The permit must incorporate a carbon monoxide (CO) limit and, as appropriate, a hydrocarbon (HC) limit as provided by subsections 11-266-104(b), 11-266-104(c), 11-266-104(d), 11-266-104(e) and 11-266-104(f). The permit limits will be specified as follows:

(A) When complying with the CO standard of paragraph 11-266-104(b)(1), the permit limit is one-hundred ppmv;

(B) When complying with the alternative CO standard under subsection 11-266-104(c), the permit limit for CO is based on the trial burn and is established as the average over all valid runs of the highest hourly rolling average CO level of each run, and the permit limit for HC is twenty ppmv (as defined in paragraph 11-266-104(c)(1)), except as

provided in subsection 11-266-104(f).

(C) When complying with the alternative HC limit for industrial furnaces under subsection 11-266-104(f), the permit limit for HC and CO is the baseline level when hazardous waste is not burned as specified by that subsection.

(iii) Start-up and shut-down. During start-up and shut-down of the boiler or industrial furnace, hazardous waste (except waste fed solely as an ingredient under the Tier I (or adjusted Tier I) feed rate screening limits for metals and chloride/chlorine, and except low risk waste exempt from the trial burn requirements under paragraph 11-266-104(a)(5), sections 11-266-105, 11-266-106, and 11-266-107) must not be fed into the device unless the device is operating within the conditions of operation specified in the permit.

(3) Requirements to ensure conformance with the particulate standard.

(i) Except as provided in subparagraphs (e)(3)(ii) and (e)(3)(iii), the permit shall specify the following operating requirements to ensure conformance with the particulate standard specified in section 11-266-105;

(A) Total ash feed rate to the device from hazardous waste, other fuels, and industrial furnace feedstocks, measured and specified as prescribed in paragraph (e)(6);

(B) Maximum device production rate when producing normal product expressed in appropriate units, and measured and specified as prescribed in paragraph (e)(6);

(C) Appropriate controls on operation and maintenance of the hazardous waste firing system and any air pollution control system;

(D) Allowable variation in boiler and industrial furnace system design including any air pollution control system or operating procedures; and

(E) Such other operating requirements as are necessary to ensure that the particulate standard in subsection 11-266-111(b) is met.

(ii) Permit conditions to ensure conformance with the particulate matter standard shall not be provided for facilities exempt from the particulate matter standard under subsection 11-266-105(b);

(iii) For cement kilns and light-weight aggregate kilns, permit conditions to ensure compliance with the particulate standard shall not limit the ash

content of hazardous waste or other feed materials.

(4) Requirements to ensure conformance with the metals emissions standard.

(i) For conformance with the Tier I (or adjusted Tier I) metals feed rate screening limits of subsection 11-266-106(b) or 11-266-106(e), the permit shall specify the following operating requirements:

(A) Total feed rate of each metal in hazardous waste, other fuels, and industrial furnace feedstocks measured and specified under provisions of paragraph (e)(6);

(B) Total feed rate of hazardous waste measured and specified as prescribed in paragraph (e)(6);

(C) A sampling and metals analysis program for the hazardous waste, other fuels, and industrial furnace feedstocks;

(ii) For conformance with the Tier II metals emission rate screening limits under subsection 11-266-106(c) and the Tier III metals controls under subsection 11-266-106(d), the permit shall specify the following operating requirements:

(A) Maximum emission rate for each metal specified as the average emission rate during the trial burn;

(B) Feed rate of total hazardous waste and pumpable hazardous waste, each measured and specified as prescribed in subparagraph (e)(6)(i);

(C) Feed rate of each metal in the following feedstreams, measured and specified as prescribed in paragraph (e)(6):

(1) Total feed streams;

(2) Total hazardous waste feed; and

(3) Total pumpable hazardous waste feed;

(D) Total feed rate of chlorine and chloride in total feed streams measured and specified as prescribed in paragraph (e)(6);

(E) Maximum combustion gas temperature measured at a location indicative of combustion chamber temperature, and measured and specified as prescribed in paragraph (e)(6);

(F) Maximum flue gas temperature at the inlet to the particulate matter air pollution control system measured and specified as prescribed in paragraph (e)(6);

(G) Maximum device production rate when producing normal product expressed in appropriate units and measured and specified as prescribed in

paragraph (e)(6);

(H) Appropriate controls on operation and maintenance of the hazardous waste firing system and any air pollution control system;

(I) Allowable variation in boiler and industrial furnace system design including any air pollution control system or operating procedures; and

(J) Such other operating requirements as are necessary to ensure that the metals standards under subsection 11-266-106(c) or 11-266-106(d) are met.

(iii) For conformance with an alternative implementation approach approved by the director under subsection 11-266-106(f), the permit will specify the following operating requirements:

(A) Maximum emission rate for each metal specified as the average emission rate during the trial burn;

(B) Feed rate of total hazardous waste and pumpable hazardous waste, each measured and specified as prescribed in subparagraph (e)(6)(i);

(C) Feed rate of each metal in the following feedstreams, measured and specified as prescribed in paragraph (e)(6):

(1) Total hazardous waste feed; and

(2) Total pumpable hazardous waste feed;

(D) Total feed rate of chlorine and chloride in total feed streams measured and specified as prescribed in paragraph (e)(6);

(E) Maximum combustion gas temperature measured at a location indicative of combustion chamber temperature, and measured and specified as prescribed in paragraph (e)(6);

(F) Maximum flue gas temperature at the inlet to the particulate matter air pollution control system measured and specified as prescribed in paragraph (e)(6);

(G) Maximum device production rate when producing normal product expressed in appropriate units and measured and specified as prescribed in paragraph (e)(6);

(H) Appropriate controls on operation and maintenance of the hazardous waste firing system and any air pollution control system;

(I) Allowable variation in boiler and industrial furnace system design including any air pollution control system or operating procedures; and

(J) Such other operating requirements as are necessary to ensure that the metals standards under subsection 11-266-106(c) or 11-266-106(d) are met.

(5) Requirements to ensure conformance with the hydrogen chloride and chlorine gas standards.

(i) For conformance with the Tier I total chloride and chlorine feed rate screening limits of paragraph 11-266-107(b)(1), the permit will specify the following operating requirements:

(A) Feed rate of total chloride and chlorine in hazardous waste, other fuels, and industrial furnace feedstocks measured and specified as prescribed in paragraph (e)(6);

(B) Feed rate of total hazardous waste measured and specified as prescribed in paragraph (e)(6);

(C) A sampling and analysis program for total chloride and chlorine for the hazardous waste, other fuels, and industrial furnace feedstocks;

(ii) For conformance with the Tier II HCl and Cl_2 emission rate screening limits under subsection 11-266-107(b)(2) and the Tier III HCl and Cl_2 controls under subsection 11-266-107(c), the permit will specify the following operating requirements:

(A) Maximum emission rate for HCI and for Cl_2 specified as the average emission rate during the trial burn;

(B) Feed rate of total hazardous waste measured and specified as prescribed in paragraph (e)(6);

(C) Total feed rate of chlorine and chloride in total feed streams, measured and specified as prescribed in paragraph (e)(6);

(D) Maximum device production rate when producing normal product expressed in appropriate units, measured and specified as prescribed in paragraph (e)(6);

(E) Appropriate controls on operation and maintenance of the hazardous waste firing system and any air pollution control system;

(F) Allowable variation in boiler and industrial furnace system design including any air pollution control system or operating procedures; and

(G) Such other operating requirements as are necessary to ensure that the HCI and Cl_2

standards under paragraph 11-266-107(b)(2) or subsection 11-266-107(c) are met.

(6) Measuring parameters and establishing limits based on trial burn data--

(i) General requirements. As specified in paragraphs (e)(2) through (e)(5), each operating parameter shall be measured, and permit limits on the parameter shall be established, according to either of the following procedures:

(A) Instantaneous limits. A parameter may be measured and recorded on an instantaneous basis (i.e., the value that occurs at any time) and the permit limit specified as the time-weighted average during all valid runs of the trial burn; or

(B) Hourly rolling average.

(1) The limit for a parameter may be established and continuously monitored on an hourly rolling average basis defined as follows:

(i) A continuous monitor is one which continuously samples the regulated parameter without interruption, and evaluates the detector response at least once each fifteen seconds, and computes and records the average value at least every sixty seconds.

(ii) An hourly rolling average is the arithmetic mean of the sixty most recent one-minute average values recorded by the continuous monitoring system.

(2) The permit limit for the parameter shall be established based on trial burn data as the average over all valid test runs of the highest hourly rolling average value for each run.

(ii) Rolling average limits for carcinogenic metals and lead. Feed rate limits for the carcinogenic metals (i.e., arsenic, beryllium, cadmium and chromium) and lead may be established either on an hourly rolling average basis as prescribed by subparagraph (e)(6)(i) or on (up to) a twenty-four hour rolling average basis. If the owner or operator elects to use an average period from two to twenty-four hours:

(A) The feed rate of each metal shall be limited at any time to ten times the feed rate that would be allowed on an hourly rolling average

basis;

(B) The continuous monitor shall meet the following specifications:

(1) A continuous monitor is one which continuously samples the regulated parameter without interruption, and evaluates the detector response at least once each fifteen seconds, and computes and records the average value at least every sixty seconds.

(2) The rolling average for the selected averaging period is defined as the arithmetic mean of one hour block averages for the averaging period. A one hour block average is the arithmetic mean of the one minute averages recorded during the sixty-minute period beginning at one minute after the beginning of preceding clock hour; and

(C) The permit limit for the feed rate of each metal shall be established based on trial burn data as the average over all valid test runs of the highest hourly rolling average feed rate for each run.

(iii) Feed rate limits for metals, total chloride and chlorine, and ash. Feed rate limits for metals, total chlorine and chloride, and ash are established and monitored by knowing the concentration of the substance (i.e., metals, chloride/chlorine, and ash) in each feedstream and the flow rate of the feedstream. To monitor the feed rate of these substances, the flow rate of each feedstream must be monitored under the continuous monitoring requirements of subparagraphs (e)(6)(i) and (e)(6)(ii).

(iv) Conduct of trial burn testing.

(A) If compliance with all applicable emissions standards of sections 11-266-104 through 11-266-107 is not demonstrated simultaneously during a set of test runs, the operating conditions of additional test runs required to demonstrate compliance with remaining emissions standards must be as close as possible to the original operating conditions.

(B) Prior to obtaining test data for purposes of demonstrating compliance with the emissions standards of sections 11-266-104 through 11-266-107 or establishing limits on operating parameters under this section, the facility

must operate under trial burn conditions for a sufficient period to reach steady-state operations. The director may determine, however, that industrial furnaces that recycle collected particulate matter back into the furnace and that comply with an alternative implementation approach for metals under subsection 11-266-106(f) need not reach steady state conditions with respect to the flow of metals in the system prior to beginning compliance testing for metals emissions.

(C) Trial burn data on the level of an operating parameter for which a limit must be established in the permit must be obtained during emissions sampling for the pollutant(s) (i.e., metals, PM, HCl/Cl_2, organic compounds) for which the parameter must be established as specified by subsection (e).

(7) General requirements--

(i) Fugitive emissions. Fugitive emissions must be controlled by:

(A) Keeping the combustion zone totally sealed against fugitive emissions; or

(B) Maintaining the combustion zone pressure lower than atmospheric pressure; or

(C) An alternate means of control demonstrated (with Part B of the permit application) to provide fugitive emissions control equivalent to maintenance of combustion zone pressure lower than atmospheric pressure.

(ii) Automatic waste feed cutoff. A boiler or industrial furnace must be operated with a functioning system that automatically cuts off the hazardous waste feed when operating conditions deviate from those established under this section. The director may limit the number of cutoffs per an operating period on a case-by-case basis. In addition:

(A) The permit limit for (the indicator of) minimum combustion chamber temperature must be maintained while hazardous waste or hazardous waste residues remain in the combustion chamber,

(B) Exhaust gases must be ducted to the air pollution control system operated in accordance with the permit requirements while hazardous waste or hazardous waste residues

remain in the combustion chamber; and

(C) Operating parameters for which permit limits are established must continue to be monitored during the cutoff, and the hazardous waste feed shall not be restarted until the levels of those parameters comply with the permit limits. For parameters that may be monitored on an instantaneous basis, the director will establish a minimum period of time after a waste feed cutoff during which the parameter must not exceed the permit limit before the hazardous waste feed may be restarted.

(iii) Changes. A boiler or industrial furnace must cease burning hazardous waste when changes in combustion properties, or feed rates of the hazardous waste, other fuels, or industrial furnace feedstocks, or changes in the boiler or industrial furnace design or operating conditions deviate from the limits as specified in the permit.

(8) Monitoring and Inspections.

(i) The owner or operator must monitor and record the following, at a minimum, while burning hazardous waste:

(A) If specified by the permit, feed rates and composition of hazardous waste, other fuels, and industrial furnace feedstocks, and feed rates of ash, metals, and total chloride and chlorine;

(B) If specified by the permit, carbon monoxide (CO), hydrocarbons (HC), and oxygen on a continuous basis at a common point in the boiler or industrial furnace downstream of the combustion zone and prior to release of stack gases to the atmosphere in accordance with operating requirements specified in subparagraph (e)(2)(ii). CO, HC, and oxygen monitors must be installed, operated, and maintained in accordance with methods specified in appendix IX.

(C) Upon the request of the director, sampling and analysis of the hazardous waste (and other fuels and industrial furnace feedstocks as appropriate), residues, and exhaust emissions must be conducted to verify that the operating requirements established in the permit achieve the applicable standards of sections 11-266-104, 11-266-105, 11-266-106, and 11-266-107.

(ii) All monitors shall record data in units

corresponding to the permit limit unless otherwise specified in the permit.

(iii) The boiler or industrial furnace and associated equipment (pumps, valves, pipes, fuel storage tanks, etc.) must be subjected to thorough visual inspection when it contains hazardous waste, at least daily for leaks, spills, fugitive emissions, and signs of tampering.

(iv) The automatic hazardous waste feed cutoff system and associated alarms must be tested at least once every seven days when hazardous waste is burned to verify operability, unless the applicant demonstrates to the director that weekly inspections will unduly restrict or upset operations and that less frequent inspections will be adequate. At a minimum, operational testing must be conducted at least once every thirty days.

(v) These monitoring and inspection data must be recorded and the records must be placed in the operating record required by section 11-264-73.

(9) Direct transfer to the burner. If hazardous waste is directly transferred from a transport vehicle to a boiler or industrial furnace without the use of a storage unit, the owner and operator must comply with section 11-266-111.

(10) Recordkeeping. The owner or operator must keep in the operating record of the facility all information and data required by this section until closure of the facility.

(11) Closure. At closure, the owner or operator must remove all hazardous waste and hazardous waste residues (including, but not limited to, ash, scrubber waters, and scrubber sludges) from the boiler or industrial furnace. [Eff 6/18/94; comp SEP 20 1999] (Auth: HRS §§ 342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.102)

§11-266-103 <u>Interim status standards for burners</u>.

(a) Purpose, scope, applicability.--

(1) General.

(i) The purpose of this section is to establish minimum State standards for owners and operators of "existing" boilers and industrial furnaces that have achieved RCRA interim status on the effective date of this chapter and burn hazardous waste, where such standards define the acceptable management of hazardous waste during the period of interim status. The standards of this section apply to owners and operators of existing facilities that have achieved RCRA interim status

on the effective date of this chapter until either a permit is issued under subsection 11-266-102(d) or until closure responsibilities identified in this section are fulfilled.

(ii) Existing or in existence means a boiler or industrial furnace that on or before August 21, 1991 is either in operation burning or processing hazardous waste or for which construction (including the ancillary facilities to burn or to process the hazardous waste) has commenced. A facility has commenced construction if the owner or operator has obtained the Federal, State, and county approvals or permits necessary to begin physical construction; and either:

(A) A continuous on-site, physical construction program has begun; or

(B) The owner or operator has entered into contractual obligations -- which cannot be canceled or modified without substantial loss -- for physical construction of the facility to be completed within a reasonable time.

(iii) If a boiler or industrial furnace is located at a facility that already has a permit or interim status, then the facility must comply with the applicable rules dealing with permit modifications in section 11-270-42 or changes in interim status in section 11-270-72.

(2) Exemptions. The requirements of this section do not apply to hazardous waste and facilities exempt under subsection 11-266-100(b), or section 11-266-108.

(3) Prohibition on burning dioxin-listed wastes. The following hazardous waste listed for dioxin and hazardous waste derived from any of these wastes may not be burned in a boiler or industrial furnace operating under interim status: F020, F021, F022, F023, F026, and F027.

(4) Applicability of chapter 11-265 standards. Owners and operators of boilers and industrial furnaces that burn hazardous waste and are operating under interim status are subject to the following provisions of chapter 11-265, except as provided otherwise by this section:

(i) In subchapter A (General), section 11-265-4;

(ii) In subchapter B (General facility standards), sections 11-265-11 through 11-265-17;

(iii) In subchapter C (Preparedness and prevention), sections 11-265-31 through 11-265-37;

(iv) In subchapter D (Contingency plan and emergency procedures), sections 11-265-51 through 11-265-56;

(v) In subchapter E (Manifest system, recordkeeping, and reporting), sections 11-265-71 through 11-265-

77, except that sections 11-265-71, 11-265-72, and 11-265-76 do not apply to owners and operators of on-site facilities that do not receive any hazardous waste from off-site sources;

(vi) In subchapter G (Closure and post-closure), sections 11-265-111 through 11-265-115;

(vii) In subchapter H (Financial requirements), sections 11-265-141, 11-265-142, 11-265-143, and 11-265-147 through 11-265-151, except that the State and the federal government are exempt from the requirements of subchapter H; and

(viii) Subchapter BB (Air emission standards for equipment leaks), except subsection 11-265-1050(a).

(5) Special requirements for furnaces. The following controls apply during interim status to industrial furnaces (e.g., kilns, cupolas) that feed hazardous waste for a purpose other than solely as an ingredient (see subparagraph 11-266-103(a)(5)(ii)) at any location other than the hot end where products are normally discharged or where fuels are normally fired:

(i) Controls.

(A) The hazardous waste shall be fed at a location where combustion gas temperatures are at least one-thousand eight hundred degrees fahrenheit;

(B) The owner or operator must determine that adequate oxygen is present in combustion gases to combust organic constituents in the waste and retain documentation of such determination in the facility record;

(C) For cement kiln systems, the hazardous waste shall be fed into the kiln; and

(D) The hydrocarbon controls of subsection 11-266-104(c) or paragraph (c)(5) of this section apply upon certification of compliance under paragraph (c) of this section irrespective of the CO level achieved during the compliance test.

(ii) Burning hazardous waste solely as an ingredient. A hazardous waste is burned for a purpose other than solely as an ingredient if it meets either of these criteria:

(A) The hazardous waste has a total concentration of nonmetal compounds listed in chapter 11-261, appendix VIII, exceeding five-hundred ppm by weight, as-fired, and so is considered to be burned for destruction. The concentration of nonmetal compounds in a waste as-generated may be reduced to the

five-hundred ppm limit by bona fide treatment that removes or destroys nonmetal constituents. Blending for dilution to meet the five-hundred ppm limit is prohibited and documentation that the waste has not been impermissibly diluted must be retained in the facility record; or

(B) The hazardous waste has a heating value of five-thousand Btu/lb or more, as-fired, and so is considered to be burned as fuel. The heating value of a waste as-generated may be reduced to below the five-thousand Btu/lb limit by bona fide treatment that removes or destroys organic constituents. Blending to augment the heating value to meet the five-thousand Btu/lb limit is prohibited and documentation that the waste has not been impermissibly blended must be retained in the facility record.

(6) Restrictions on burning hazardous waste that is not a fuel. Prior to certification of compliance under subsection (c), owners and operators shall not feed hazardous waste that has a heating value less than five-thousand Btu/lb, as-generated, (except that the heating value of a waste as-generated may be increased to above the five-thousand Btu/lb limit by bona fide treatment; however, blending to augment the heating value to meet the five-thousand Btu/lb limit is prohibited and records must be kept to document that impermissible blending has not occurred) in a boiler or industrial furnace, except that:

(i) Hazardous waste may be burned solely as an ingredient; or

(ii) Hazardous waste may be burned for purposes of compliance testing (or testing prior to compliance testing) for a total period of time not to exceed seven-hundred and twenty hours; or

(iii) Such waste may be burned if the director has documentation to show that, prior to August 21, 1991:

(A) The boiler or industrial furnace is operating under the interim status standards for incinerators provided by subchapter O of chapter 11-265 or subpart O of 40 C.F.R. Part 265, or the interim status standards for thermal treatment units provided by subchapter P of chapter 11-265 or subpart P of 40 C.F.R. Part 265; and

(B) The boiler or industrial furnace met the interim status eligibility requirements under

section 11-270-70 or 40 C.F.R 270.70 for subchapter O or subchapter P of chapter 11-265, or subpart O or subpart P of 40 C.F.R Part 265; and

(C) Hazardous waste with a heating value less than five-thousand Btu/lb was burned prior to that date; or

(iv) Such waste may be burned in a halogen acid furnace if the waste was burned as an excluded ingredient under subsection 11-261-2(e) or 40 C.F.R 261.2(e) prior to February 21, 1991 and documentation is kept on file supporting this claim.

(7) Direct transfer to the burner. If hazardous waste is directly transferred from a transport vehicle to a boiler or industrial furnace without the use of a storage unit, the owner and operator must comply with section 11-266-111.

(b) Certification of precompliance:

(1) General. The owner or operator must provide complete and accurate information specified in paragraph (b)(2) to the director and must establish limits for the operating parameters specified in paragraph (b)(3). Such information is termed a "certification of precompliance" and constitutes a certification that the owner or operator has determined that, when the facility is operated within the limits specified in paragraph (b)(3), the owner or operator believes that, using best engineering judgment, emissions of particulate matter, metals, and HCl and Cl_2 are not likely to exceed the limits provided by sections 11-266-105, 11-266-106 and 11-266-107. The facility may burn hazardous waste only under the operating conditions that the owner or operator establishes under paragraph (b)(3) until the owner or operator submits a revised certification of precompliance under paragraph (b)(8) or a certification of compliance under subsection (c), or until a permit is issued.

(2) Information required. The following information must be submitted with the certification of precompliance to support the determination that the limits established for the operating parameters identified in paragraph (b)(3) are not likely to result in an exceedance of the allowable emission rates for particulate matter, metals, and HCl and Cl_2:

(i) General facility information:

(A) EPA facility identification number;

(B) Facility name, contact person, telephone number, and address;

(C) Description of boilers and industrial

furnaces burning hazardous waste, including type and capacity of device;

(D) A scaled plot plan showing the entire facility and location of the boilers and industrial furnaces burning hazardous waste; and

(E) A description of the air pollution control system on each device burning hazardous waste, including the temperature of the flue gas at the inlet to the particulate matter control system.

(ii) Except for facilities complying with the Tier I or Adjusted Tier I feed rate screening limits for metals or total chlorine and chloride provided by subsection 11-266-106(b) or (e) and paragraph 11-266-107(b)(1) or subsection 11-266-107(e), respectively, the estimated uncontrolled (at the inlet to the air pollution control system) emissions of particulate matter, each metal controlled by section 11-266-106, and hydrogen chloride and chlorine, and the following information to support such determinations:

(A) The feed rate (lb/hr) of ash, chlorine, antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium in each feedstream (hazardous waste, other fuels, industrial furnace feedstocks);

(B) The estimated partitioning factor to the combustion gas for the materials identified in clause (b)(2)(ii)(A) and the basis for the estimate and an estimate of the partitioning to HCl and Cl_2 of total chloride and chlorine in feed materials. To estimate the partitioning factor, the owner or operator must use either best engineering judgment or the procedures specified in appendix IX.

(C) For industrial furnaces that recycle collected particulate matter (PM) back into the furnace and that will certify compliance with the metals emissions standards under clause (c)(3)(ii)(A), the estimated enrichment factor for each metal. To estimate the enrichment factor, the owner or operator must use either best engineering judgment or the procedures specified in "Alternative Methodology for Implementing Metals Controls" in appendix IX.

(D) If best engineering judgment is used to estimate partitioning factors or enrichment

factors under clause (b)(2)(ii)(B) or (b)(2)(ii)(C) respectively, the basis for the judgment. When best engineering judgment is used to develop or evaluate data or information and make determinations under this section, the determinations must be made by a qualified, registered professional engineer and a certification of his/her determinations in accordance with subsection 11-270-11(d) must be provided in the certification of precompliance.

(iii) For facilities complying with the Tier I or Adjusted Tier I feed rate screening limits for metals or total chlorine and chloride provided by subsection 11-266-106(b) or (e) and paragraph 11-266-107(b)(1) or subsection 11-266-107(e), the feed rate (lb/hr) of total chloride and chlorine, antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium in each feed stream (hazardous waste, other fuels, industrial furnace feedstocks).

(iv) For facilities complying with the Tier II or Tier III emission limits for metals or HCl and Cl_2 (under subsection 11-266-106(c) or 11-266-106(d) or paragraph 11-266-107(b)(2) or subsection 11-266-107(c)), the estimated controlled (outlet of the air pollution control system) emissions rates of particulate matter, each metal controlled by section 11-266-106, and HCl and Cl_2, and the following information to support such determinations:

(A) The estimated air pollution control system (APCS) removal efficiency for particulate matter, HCl, Cl_2, antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium.

(B) To estimate APCS removal efficiency, the owner or operator must use either best engineering judgment or the procedures prescribed in appendix IX.

(C) If best engineering judgment is used to estimate APCS removal efficiency, the basis for the judgment. Use of best engineering judgment must be in conformance with provisions of clause (b)(2)(ii)(D).

(v) Determination of allowable emissions rates for HCl, Cl_2, antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium, and the following information to

support such determinations:

(A) For all facilities:

(1) Physical stack height;

(2) Good engineering practice stack height as defined by 40 CFR 51.100(ii);

(3) Maximum flue gas flow rate;

(4) Maximum flue gas temperature;

(5) Attach a US Geological Service topographic map (or equivalent) showing the facility location and surrounding land within five km of the facility;

(6) Identify terrain type: complex or noncomplex; and

(7) Identify land use: urban or rural.

(B) For owners and operators using Tier III site specific dispersion modeling to determine allowable levels under subsection 11-266-106(d) or 11-266-107(c), or adjusted Tier I feed rate screening limits under subsection 11-266-106(e) or 11-266-107(e):

(1) Dispersion model and version used;

(2) Source of meteorological data;

(3) The dilution factor in micrograms per cubic meter per gram per second of emissions for the maximum annual average off-site (unless on-site is required) ground level concentration (MEI location); and

(4) Indicate the MEI location on the map required under subclause (b)(2)(v)(A)(5);

(vi) For facilities complying with the Tier II or III emissions rate controls for metals or HCl and Cl_2, a comparison of the estimated controlled emissions rates determined under subparagraph (b)(2)(iv) with the allowable emission rates determined under subparagraph (b)(2)(v);

(vii) For facilities complying with the Tier I (or adjusted Tier I) feed rate screening limits for metals or total chloride and chlorine, a comparison of actual feed rates of each metal and total chlorine and chloride determined under subparagraph (b)(2)(iii) to the Tier I allowable feed rates; and

(viii) For industrial furnaces that feed hazardous waste for any purpose other than solely as an ingredient (as defined by subparagraph (a)(5)(ii)) at any location other than the product discharge end of the device, documentation of compliance with the

requirements of clauses (a)(5)(i)(A), (a)(5)(i)(B), and (a)(5)(i)(C).

(ix) For industrial furnaces that recycle collected particulate matter (PM) back into the furnace and that will certify compliance with the metals emissions standards under clause (c)(3)(ii)(A):

(A) The applicable particulate matter standard in lb/hr; and

(B) The precompliance limit on the concentration of each metal in collected PM.

(3) Limits on operating conditions. The owner and operator shall establish limits on the following parameters consistent with the determinations made under paragraph (b)(2) and certify (under provisions of paragraph (b)(9)) to the director that the facility will operate within the limits during interim status when there is hazardous waste in the unit until revised certification of precompliance under paragraph (b)(8) or certification of compliance under subsection (c):

(i) Feed rate of total hazardous waste and (unless complying with the Tier I or adjusted Tier I metals feed rate screening limits under subsection 11-266-106(b) or 11-266-106(e)) pumpable hazardous waste;

(ii) Feed rate of each metal in the following feed streams:

(A) Total feed streams, except that industrial furnaces that comply with the alternative metals implementation approach under paragraph (b)(4) must specify limits on the concentration of each metal in collected particulate matter in lieu of feed rate limits for total feedstreams;

(B) Total hazardous waste feed, unless complying with the Tier I or Adjusted Tier I metals feed rate screening limits under subsection 11-266-106(b) or (e); and

(C) Total pumpable hazardous waste feed, unless complying with the Tier I or adjusted Tier I metals feed rate screening limits under subsection 11-266-106(b) or 11-266-106(e);

(iii) Total feed rate of chlorine and chloride in total feed streams;

(iv) Total feed rate of ash in total feed streams, except that the ash feed rate for cement kilns and light-weight aggregate kilns is not limited; and

(v) Maximum production rate of the device in appropriate units when producing normal product, unless complying with the Tier I or Adjusted Tier I feed rate screening limits for chlorine under

paragraph 11-266-107(b)(1) or subsection 11-266-107(e) and for all metals under subsection 11-266-106(b) or (e), and the uncontrolled particulate emissions do not exceed the standard under section 11-266-105.

(4) Operating requirements for furnaces that recycle PM. Owners and operators of furnaces that recycle collected particulate matter (PM) back into the furnace and that will certify compliance with the metals emissions controls under clause (c)(3)(ii)(A) must comply with the special operating requirements provided in "Alternative Methodology for Implementing Metals Controls" in Appendix IX.

(5) Measurement of feed rates and production rate.

(i) General requirements. Limits on each of the parameters specified in paragraph (b)(3) (except for limits on metals concentrations in collected particulate matter (PM) for industrial furnaces that recycle collected PM) shall be established and continuously monitored under either of the following methods:

(A) Instantaneous limits. A limit for a parameter may be established and continuously monitored and recorded on an instantaneous basis (i.e., the value that occurs at any time) not to be exceeded at any time; or

(B) Hourly rolling average limits. A limit for a parameter may be established and continuously monitored on an hourly rolling average basis defined as follows:

(1) A continuous monitor is one which continuously samples the regulated parameter without interruption, and evaluates the detector response at least once each fifteen seconds, and computes and records the average value at least every sixty seconds.

(2) An hourly rolling average is the arithmetic mean of the sixty most recent 1-minute average values recorded by the continuous monitoring system.

(ii) Rolling average limits for carcinogenic metals and lead. Feed rate limits for the carcinogenic metals (arsenic, beryllium, cadmium, and chromium) and lead may be established either on an hourly rolling average basis as prescribed by clause (b)(5)(i)(B) or on (up to) a twenty-four hour rolling average basis. If the owner or operator elects to use an averaging period from two to twenty-four hours:

(A) The feed rate of each metal shall be limited at any time to ten times the feed rate that would be allowed on a hourly rolling average basis;

(B) The continuous monitor shall meet the following specifications:

(1) A continuous monitor is one which continuously samples the regulated parameter without interruption, and evaluates the detector response at least once each fifteen seconds, and computes and records the average value at least every sixty seconds.

(2) The rolling average for the selected averaging period is defined as the arithmetic mean of one hour block averages for the averaging period. A one hour block average is the arithmetic mean of the one minute averages recorded during the sixty-minute period beginning at one minute after the beginning of the preceding clock hour.

(iii) Feed rate limits for metals, total chloride and chlorine, and ash. Feed rate limits for metals, total chlorine and chloride, and ash are established and monitored by knowing the concentration of the substance (i.e., metals, chloride/chlorine, and ash) in each feedstream and the flow rate of the feedstream. To monitor the feed rate of these substances, the flow rate of each feedstream must be monitored under the continuous monitoring requirements of subparagraphs (b)(5)(i) and (b)(5)(ii).

(6) [Reserved]

(7) Monitoring other operating parameters. When the monitoring systems for the operating parameters listed in subparagraphs (c)(1)(v) through (c)(1)(xiii) are installed and operating in conformance with vendor specifications or (for CO, HC, and oxygen) specifications provided by appendix IX, as appropriate, the parameters shall be continuously monitored and records shall be maintained in the operating record.

(8) Revised certification of precompliance. The owner or operator may revise at any time the information and operating conditions documented under paragraphs (b)(2) and (b)(3) in the certification of precompliance by submitting a revised certification of precompliance under procedures provided by those paragraphs.

(i) The public notice requirements of paragraph (b)(6) do not apply to recertifications.

(ii) The owner and operator must operate the facility within the limits established for the operating parameters under paragraph (b)(3) until a revised certification is submitted under this paragraph or a certification of compliance is submitted under subsection (c).

(9) Certification of precompliance statement. The owner or operator must include the following signed statement with the certification of precompliance submitted to the director:

"I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information and supporting documentation. Copies of all emissions tests, dispersion modeling results and other information used to determine conformance with the requirements of subsection 11-266-103(b) of the Hawaii Administrative Rules are available at the facility and can be obtained from the facility contact person listed above. Based on my inquiry of the person or persons who manages the facility, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I also acknowledge that the operating limits established in this certification pursuant to paragraphs 11-266-103(b)(3) and 11-266-103(b)(4) of the Hawaii Administrative Rules are enforceable limits at which the facility can legally operate during interim status until: (1) A revised certification of precompliance is submitted, (2) a certification of compliance is submitted, or (3) an operating permit is issued."

(c) Certification of compliance. The owner or operator shall conduct emissions testing to document compliance with the emissions standards of subsections 11-266-104(b) through 11-266-104(e); sections 11-266-105, 11-266-106, 11-266-107, and clause (a)(5)(i)(D) of this section, under the procedures prescribed by this subsection, except under extensions of time provided by paragraph (c)(7). Based on the compliance test, the owner or operator shall submit to the director a complete and accurate "certification of compliance" (under paragraph (c)(4)) with those emission standards establishing limits on the operating parameters specified in paragraph (c)(1).

(1) Limits on operating conditions. The owner or operator shall establish limits on the following parameters

based on operations during the compliance test (under procedures prescribed in paragraph (c)(4)(iv) of this section) or as otherwise specified and include these limits with the certification of compliance. The boiler or industrial furnace must be operated in accordance with these operating limits and the applicable emissions standards of subsections 11-266-104(b) through (e), sections 11-266-105, 11-266-106, and 11-266-107, and clause 11-266-103(a)(5)(i)(D) at all times when there is hazardous waste in the unit.

(i) Feed rate of total hazardous waste and (unless complying with the Tier I or adjusted Tier I metals feed rate screening limits under subsection 11-266-106(b) or (e) and the total chlorine and chloride feed rates screening limits under section 11-266-107(b) or (e)), pumpable hazardous waste;

(ii) Feed rate of each metal in the following feedstreams:

(A) Total feedstreams, except that:

(1) Facilities that comply with Tier I or Adjusted Tier I metals feed rate screening limits may set their operating limits at the metals feed rate screening limits determined under subsection 11-266-106(b) or (e); and

(2) Industrial furnaces that must comply with the alternative metals implementation approach under paragraph (c)(3)(ii) of this section must specify limits on the concentration of each metal in the collected particulate matter in lieu of feed rate limits for total feed steams;

(B) Total hazardous waste feed (unless complying with the Tier I or Adjusted Tier I metals feed rate screening limits under subsection 11-266-106(b) or (e)); and

(C) Total pumpable hazardous waste feed (unless complying with the Tier I or Adjusted Tier I metals feed rate screening limits under subsection 11-266-106(b) or (e));

(iii) Total feed rate of chlorine and chloride in total feed streams, except that facilities that comply with Tier I or Adjusted Tier I feed rate screening limits may set their operating limits at the total chlorine and chloride feed rate screening limits determined under paragraph 11-266-107(b)(1) or subsection 11-266-107(e);

(iv) Total feed rate of ash in total feed streams, except that the ash feed rate for cement kilns and

light-weight aggregate kilns is not limited;

(v) Carbon monoxide concentration, and where required, hydrocarbon concentration in stack gas. When complying with the CO controls of subsection 11-266-104(b), the CO limit is 100 ppmv, and when complying with the HC controls of subsection 11-266-104(c), the HC limit is 20 ppmv. When complying with the CO controls of subsection 11-266-104(c), the CO limit is established based on the compliance test;

(vi) Maximum production rate of the device in appropriate units when producing normal product, unless complying with the Tier I or Adjusted Tier I feed rate screening limits for chlorine under paragraph 11-266-107(b)(1) or subsection 11-266-107(e) and for all metals under subsection 11-266-106(b) or (e), and the uncontrolled particulate emissions do not exceed the standard under section 11-266-105;

(vii) Maximum combustion chamber temperature where the temperature measurement is as close to the combustion zone as possible and is upstream of any quench water injection (unless complying with the Tier I or Adjusted Tier I metals feed rate screening limits under subsection 11-266-106(b) or (e));

(viii) Maximum flue gas temperature entering a particulate matter control device (unless complying with Tier I or Adjusted Tier I metals feed rate screening limits under subsection 11-266-106(b) or (e) and the total chlorine and chloride feed rate screening limits under subsection 11-266-107(b) or (e));

(ix) For systems using wet scrubbers, including wet ionizing scrubbers (unless complying with Tier I or Adjusted Tier I metals feed rate screening limits under section 11-266-106(b)(1) or (e)):

(A) Minimum liquid to flue gas ration;

(B) Minimum scrubber blowdown from the system or maximum suspended solids content of scrubber water; and

(C) Minimum pH level of the scrubber water;

(x) For systems using venturi scrubbers, the minimum differential gas pressure across the venturi (unless complying with the Tier I or Adjusted Tier I metals feed rate screening limits under subsection 11-266-106(b) or (e) and the total chlorine and chloride feed rate screening limits under paragraph 11-266-107(b)(1) or subsection 11-266-107(e));

(xi) For systems using dry scrubbers (unless complying with the Tier I or Adjusted Tier I metals feed rate screening limits under subsection 11-266-106(b) or (e) and the total chlorine and chloride feed rate screening limits under paragraph 11-266-107(b)(1) or subsection 11-266-107(e)):
(A) Minimum caustic feed rate; and
(B) Maximum flue gas flow rate;

(xii) For systems using wet ionizing scrubbers or electrostatic precipitators (unless complying with the Tier I or Adjusted Tier I metals feed rate screening limits under subsection 11-266-106(b) or (e) and the total chlorine and chloride feed rate screening limits under paragraph 11-266-107(b)(1) or subsection 11-266-107(e)):
(A) Minimum electrical power in kilovolt amperes (kVA) to the precipitator plates; and
(B) Maximum flue gas flow rate;

(xiii) For systems using fabric filters (baghouses), the minimum pressure drop (unless complying with the Tier I or Adjusted Tier I metal feed rate screening limits under subsection 11-266-106(b) or (e) and the total chlorine and chloride feed rate screening limits under paragraph 11-266-107(b)(1) or subsection 11-266-107(e)).

(2) Prior notice of compliance testing. At least thirty days prior to the compliance testing required by paragraph (c)(3), the owner or operator shall notify the director and submit the following information:

(i) General facility information including:
(A) EPA facility identification number;
(B) Facility name, contact person, telephone number, and address;
(C) Person responsible for conducting compliance test, including company name, address, and telephone number, and a statement of qualifications;
(D) Planned date of the compliance test;

(ii) Specific information on each device to be tested including:
(A) Description of boiler or industrial furnace;
(B) A scaled plot plan showing the entire facility and location of the boiler or industrial furnace;
(C) A description of the air pollution control system;
(D) Identification of the continuous emission monitors that are installed, including:
(1) Carbon monoxide monitor;
(2) Oxygen monitor;

(3) Hydrocarbon monitor, specifying the minimum temperature of the system and, if the temperature is less than one-hundred and fifty degrees Celsius, an explanation of why a heated system is not used (see paragraph (c)(5)) and a brief description of the sample gas conditioning system;

(E) Indication of whether the stack is shared with another device that will be in operation during the compliance test;

(F) Other information useful to an understanding of the system design or operation.

(iii) Information on the testing planned, including a complete copy of the test protocol and Quality Assurance/Quality Control (QA/QC) plan, and a summary description for each test providing the following information at a minimum:

(A) Purpose of the test (e.g., demonstrate compliance with emissions of particulate matter); and

(B) Planned operating conditions, including levels for each pertinent parameter specified in paragraph (c)(1).

(3) Compliance testing.-

(i) General. Compliance testing must be conducted under conditions for which the owner or operator has submitted a certification of precompliance under subsection (b) of this section and under conditions established in the notification of compliance testing required by paragraph (c)(2) of this section. The owner or operator may seek approval on a case-by-case basis to use compliance test data from one unit in lieu of testing a similar onsite unit. To support the request, the owner or operator must provide a comparison of the hazardous waste burned and other feedstreams, and the design, operation, and maintenance of both the tested unit and the similar unit. The director shall provide a written approval to use compliance test data in lieu of testing a similar unit if he or she finds that the hazardous wastes, the devices, and the operating conditions are sufficiently similar, and the data from the other compliance test is adequate to meet the requirements of subsection 11-266-103(c).

(ii) Special requirements for industrial furnaces that recycle collected PM. Owners and operators of industrial furnaces that recycle back into the furnace particulate matter (PM) from the air

pollution control system must comply with one of the following procedures for testing to determine compliance with the metals standards of subsection 11-266-106(c) or (d):

(A) The special testing requirements prescribed in "Alternative Method for Implementing Metals Controls" in appendix IX of this chapter; or

(B) Stack emissions testing for a minimum of 6 hours each day while hazardous waste is burned during interim status. The testing must be conducted when burning normal hazardous waste for that day at normal feed rates for that day and when the air pollution control system is operated under normal conditions. During interim status, hazardous waste analysis for metals content must be sufficient for the owner or operator to determine if changes in metals content may affect the ability of the facility to meet the metals emissions standards established under subsection 11-266-106(c) or (d). Under this option, operating limits (under paragraph (c)(1) of this section) must be established during compliance testing under paragraph (c)(3) of this section only on the following parameters:

(1) Feed rate of total hazardous waste;

(2) Total feed rate of chlorine and chloride in total feed streams;

(3) Total feed rate of ash in total feed streams, except that the ash feed rate for cement kilns and light-weight aggregate kilns is not limited;

(4) Carbon monoxide concentration, and where required, hydrocarbon concentration in stack gas;

(5) Maximum production rate of the device in appropriate units when producing normal product; or

(C) Conduct compliance testing to determine compliance with the metals standards to establish limits on the operating parameters of paragraph (c)(1) of this section only after the kiln system has been conditioned to enable it to reach equilibrium with respect to metals fed into the system and metals emissions. During conditioning, hazardous waste and raw materials having the same metals content as will be fed during the

compliance test must be fed at the feed rates that will be fed during the compliance test.

(iii) Conduct of compliance testing.

(A) If compliance with all applicable emissions standards of sections 11-266-104 through 11-266-107 is not demonstrated simultaneously during a set of test runs, the operating conditions of additional test runs required to demonstrate compliance with remaining emissions standards must be as close as possible to the original operating conditions.

(B) Prior to obtaining test data for purposes of demonstrating compliance with the applicable emissions standards of sections 11-266-104 through 11-266-107 or establishing limits on operating parameters under this section, the facility must operate under compliance test conditions for a sufficient period to reach steady-state operations. Industrial furnaces that recycle collected particulate matter back into the furnace and that comply with paragraph (c)(3)(ii)(A) or (B) of this section, however, need not reach steady-state conditions with respect to the flow of metals in the system prior to beginning compliance testing for metals.

(C) Compliance test data on the level of an operating parameter for which a limit must be established in the certification of compliance must be obtained during emissions sampling for the pollutant(s) (i.e., metals, PM, HCl/Cl_2, organic compounds) for which the parameter must be established as specified by paragraph (c)(1) of this section.

(4) Certification of compliance. Within ninety days of completing compliance testing, the owner or operator must certify to the director compliance with the emissions standards of subsections 11-266-104(b), 11-266-104(c), and 11-266-104(e), sections 11-266-105, 11-266-106, 11-266-107, and clause (a)(5)(i)(D) of this section. The certification of compliance must include the following information:

(i) General facility and testing information including:

(A) EPA facility identification number;

(B) Facility name, contact person, telephone number, and address;

(C) Person responsible for conducting compliance

testing, including company name, address, and telephone number, and a statement of qualifications;

(D) Date(s) of each compliance test;

(E) Description of boiler or industrial furnace tested;

(F) Person responsible for quality assurance/quality control (QA/QC), title, and telephone number, and statement that the procedures prescribed in the QA/QC plan submitted under subparagraph (c)(2)(iii) have been followed, or a description of any changes and an explanation of why changes were necessary;

(G) Description of any changes in the unit configuration prior to or during testing that would alter any of the information submitted in the prior notice of compliance testing under paragraph (c)(2), and an explanation of why the changes were necessary;

(H) Description of any changes in the planned test conditions prior to or during the testing that alter any of the information submitted in the prior notice of compliance testing under paragraph (c)(2), and an explanation of why the changes were necessary; and

(I) The complete report on results of emissions testing.

(ii) Specific information on each test including:

(A) Purpose(s) of test (e.g., demonstrate conformance with the emissions limits for particulate matter, metals, HCl, Cl_2, and CO)

(B) Summary of test results for each run and for each test including the following information:

(1) Date of run;

(2) Duration of run;

(3) Time-weighted average and highest hourly rolling average CO level for each run and for the test;

(4) Highest hourly rolling average HC level, if HC monitoring is required for each run and for the test;

(5) If dioxin and furan testing is required under subsection 11-266-104(e), time-weighted average emissions for each run and for the test of chlorinated dioxin and furan emissions, and the predicted

maximum annual average ground level concentration of the toxicity equivalency factor;

(6) Time-weighted average particulate matter emissions for each run and for the test;

(7) Time-weighted average HCl and Cl_2 emissions for each run and for the test;

(8) Time-weighted average emissions for the metals subject to regulation under section 11-266-106 for each run and for the test; and

(9) QA/QC results.

(iii) Comparison of the actual emissions during each test with the emissions limits prescribed by subsections 11-266-104(b), 11-266-104(c), and 11-266-104(e), sections 11-266-105, 11-266-106 and 11-266-107 and established for the facility in the certification of precompliance under subsection (b).

(iv) Determination of operating limits based on all valid runs of the compliance test for each applicable parameter listed in paragraph (c)(1) using either of the following procedures:

(A) Instantaneous limits. A parameter may be measured and recorded on an instantaneous basis (i.e., the value that occurs at any time) and the operating limit specified as the time-weighted average during all runs of the compliance test; or

(B) Hourly rolling average basis.

(1) The limit for a parameter may be established and continuously monitored on an hourly rolling average basis defined as follows:

(i) A continuous monitor is one which continuously samples the regulated parameter without interruption, and evaluates the detector response at least once each fifteen seconds, and computes and records the average value at least every sixty seconds.

(ii) An hourly rolling average is the arithmetic mean of the sixty most recent one-minute average values recorded by the continuous monitoring system.

(2) The operating limit for the parameter shall be established based on compliance

test data as the average over all test runs of the highest hourly rolling average value for each run.

(C) Rolling average limits for carcinogenic metals and lead. Feed rate limits for the carcinogenic metals (i.e., arsenic, beryllium, cadmium, and chromium) and lead may be established either on an hourly rolling average basis as prescribed by clause (c)(4)(iv)(B) or on (up to) a twenty four hour rolling average basis. If the owner or operator elects to use an averaging period from two to twenty four hours:

(1) The feed rate of each metal shall be limited at any time to ten times the feed rate that would be allowed on a hourly rolling average basis;

(2) The continuous monitor shall meet the following specifications:

(i) A continuous monitor is one which continuously samples the regulated parameter without interruption, and evaluates the detector response at least once each fifteen seconds, and computes and records the average value at least every sixty seconds.

(ii) The rolling average for the selected averaging period is defined as the arithmetic mean of one hour block averages for the averaging period. A one hour block average is the arithmetic mean of the one minute averages recorded during the sixty-minute period beginning at one minute after the beginning of the preceding clock hour; and

(3) The operating limit for the feed rate of each metal shall be established based on compliance test data as the average over all test runs of the highest hourly rolling average feed rate for each run.

(D) Feed rate limits for metals, total chloride and chlorine, and ash. Feed rate limits for metals, total chlorine and chloride, and ash are established and monitored by knowing the concentration of the substance (i.e., metals, chloride/chlorine, and ash) in each feedstream and the flow rate of the

feedstream. To monitor the feed rate of these substances, the flow rate of each feedstream must be monitored under the continuous monitoring requirements of clauses (c)(4)(iv)(A) through (c)(4)(iv)(C).

(v) Certification of compliance statement. The following statement shall accompany the certification of compliance:

"I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information and supporting documentation. Copies of all emissions tests, dispersion modeling results and other information used to determine conformance with the requirements of subsection 11-266-103(c) of the Hawaii Administrative Rules are available at the facility and can be obtained from the facility contact person listed above. Based on my inquiry of the person or persons who manages the facility, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I also acknowledge that the operating conditions established in this certification pursuant to subparagraph 11-266-103(c)(4)(iv) of the Hawaii Administrative Rules are enforceable limits at which the facility can legally operate during interim status until a revised certification of compliance is submitted."

(5) Special requirements for HC monitoring systems. When an owner or operator is required to comply with the hydrocarbon (HC) controls provided by subsection 11-266-104(c) or paragraph (a)(5)(i)(D) of this section, a conditioned gas monitoring system may be used in conformance with specifications provided in appendix IX of this chapter provided that the owner or operator submits a certification of compliance without using extensions of time provided by paragraph (c)(7) of this section.

(6) Special operating requirements for industrial furnaces that recycle collected PM. Owners and operators of industrial furnaces that recycle back into the furnace particulate matter (PM) from the air pollution control

system must:

(i) When complying with the requirements of clause (c)(3)(ii)(A), comply with the operating requirements prescribed in "Alternative Method to Implement the Metals Controls" in appendix IX; and

(ii) When complying with the requirements of clause (c)(3)(ii)(B), comply with the operating requirements prescribed by that clause.

(7) Extensions of time.

(i) If the owner or operator does not submit a complete certification of compliance for all of the applicable emissions standards of sections 11-266-104, 11-266-105, 11-266-106, and 11-266-107, he/she must either:

(A) Stop burning hazardous waste and begin closure activities under subsection (l) for the hazardous waste portion of the facility; or

(B) [Reserved]; or

(C) Obtain a case-by-case extension of time under subparagraph (c)(7)(ii).

(ii) The owner or operator may request a case-by-case extension of time to extend any time limit provided by subsection (c) if compliance with the time limit is not practicable for reasons beyond the control of the owner or operator.

(A) In granting an extension, the director may apply conditions as the facts warrant to ensure timely compliance with the requirements of this section and that the facility operates in a manner that does not pose a hazard to human health and the environment;

(B) When an owner or operator requests an extension of time to enable the facility to comply with the alternative hydrocarbon provisions of subsection 11-266-104(f) and obtain a hazardous waste management permit because the facility cannot meet the HC limit of subsection 11-266-104(c):

(1) The director shall, in considering whether to grant the extension:

(i) Determine whether the owner and operator have submitted in a timely manner a complete Part B permit application that includes information required under subsection 11-270-22(b); and

(ii) Consider whether the owner and operator have made a good faith

effort to certify compliance with all other emission controls, including the controls on dioxins and furans of subsection 11-266-104(e) and the controls on PM, metals, and HCl/Cl_2.

(2) If an extension is granted, the director shall, as a condition of the extension, require the facility to operate under flue gas concentration limits on CO and HC that, based on available information, including information in the Part B permit application, are baseline CO and HC levels as defined by paragraph 11-266-104(f)(1).

(8) Revised certification of compliance. The owner or operator may submit at any time a revised certification of compliance (recertification of compliance) under the following procedures:

(i) Prior to submittal of a revised certification of compliance, hazardous waste may not be burned for more than a total of seven-hundred and twenty hours under operating conditions that exceed those established under a current certification of compliance, and such burning may be conducted only for purposes of determining whether the facility can operate under revised conditions and continue to meet the applicable emissions standards of sections 11-266-104, 11-266-105, 11-266-106, and 11-266-107;

(ii) At least thirty days prior to first burning hazardous waste under operating conditions that exceed those established under a current certification of compliance, the owner or operator shall notify the director and submit the following information:

(A) EPA facility identification number, and facility name, contact person, telephone number, and address;

(B) Operating conditions that the owner or operator is seeking to revise and description of the changes in facility design or operation that prompted the need to seek to revise the operating conditions;

(C) A determination that when operating under the revised operating conditions, the applicable emissions standards of sections 11-266-104, 11-266-105, 11-266-106, and 11-266-107 are not likely to be exceeded. To document this

determination, the owner or operator shall submit the applicable information required under paragraph (b)(2); and

(D) Complete emissions testing protocol for any pretesting and for a new compliance test to determine compliance with the applicable emissions standards of sections 11-266-104, 11-266-105, 11-266-106, and 11-266-107 when operating under revised operating conditions. The protocol shall include a schedule of pre-testing and compliance testing. If the owner and operator revises the scheduled date for the compliance test, he/she shall notify the director in writing at least thirty days prior to the revised date of the compliance test;

(iii) Conduct a compliance test under the revised operating conditions and the protocol submitted to the director to determine compliance with the applicable emissions standards of sections 11-266-104, 11-266-105, 11-266-106, and 11-266-107; and

(iv) Submit a revised certification of compliance under paragraph (c)(4).

(d) Periodic recertifications. The owner or operator must conduct compliance testing and submit to the director a recertification of compliance under provisions of subsection (c) within three years from submitting the previous certification or recertification. If the owner or operator seeks to recertify compliance under new operating conditions, he/she must comply with the requirements of paragraph (c)(8).

(e) Noncompliance with certification schedule. If the owner or operator does not comply with the interim status compliance schedule provided by subsections (b), (c), and (d), hazardous waste burning must terminate on the date that the deadline is missed, closure activities must begin under subsection (l), and hazardous waste burning may not resume except under an operating permit issued under section 11-270-66. For purposes of compliance with the closure provisions of subsection (l) and paragraph 1-265-112(d)(2) and section 11-265-113 the boiler or industrial furnace has received "the known final volume of hazardous waste" on the date that the deadline is missed.

(f) Start-up and shut-down. Hazardous waste (except waste fed solely as an ingredient under the Tier I (or adjusted Tier I) feed rate screening limits for metals and chloride/chlorine) must not be fed into the device during start-up and shut-down of the boiler or industrial furnace, unless the device is operating within the conditions of operation specified in the certification of compliance.

(g) Automatic waste feed cutoff. During the compliance test required by paragraph (c)(3), and upon certification of

compliance under subsection (c), a boiler or industrial furnace must be operated with a functioning system that automatically cuts off the hazardous waste feed when the applicable operating conditions specified in subparagraphs (c)(1)(i) and (c)(1)(v) through (c)(1)(xiii) deviate from those established in the certification of compliance. In addition:

(1) To minimize emissions of organic compounds, the minimum combustion chamber temperature (or the indicator of combustion chamber temperature) that occurred during the compliance test must be maintained while hazardous waste or hazardous waste residues remain in the combustion chamber, with the minimum temperature during the compliance test defined as either:

(i) If compliance with the combustion chamber temperature limit is based on a hourly rolling average, the minimum temperature during the compliance test is considered to be the average over all runs of the lowest hourly rolling average for each run; or

(ii) If compliance with the combustion chamber temperature limit is based on an instantaneous temperature measurement, the minimum temperature during the compliance test is considered to be the time-weighted average temperature during all runs of the test; and

(2) Operating parameters limited by the certification of compliance must continue to be monitored during the cutoff, and the hazardous waste feed shall not be restarted until the levels of those parameters comply with the limits established in the certification of compliance.

(h) Fugitive emissions. Fugitive emissions must be controlled by:

(1) Keeping the combustion zone totally sealed against fugitive emissions; or

(2) Maintaining the combustion zone pressure lower than atmospheric pressure; or

(3) An alternate means of control that the owner or operator can demonstrate provide fugitive emissions control equivalent to maintenance of combustion zone pressure lower than atmospheric pressure. Support for such demonstration shall be included in the operating record.

(i) Changes. A boiler or industrial furnace must cease burning hazardous waste when changes in combustion properties, or feed rates of the hazardous waste, other fuels, or industrial furnace feedstocks, or changes in the boiler or industrial furnace design or operating conditions deviate from the limits specified in the certification of compliance.

(j) Monitoring and Inspections.

(1) The owner or operator must monitor and record the following, at a minimum, while burning hazardous waste:

(i) Feed rates and composition of hazardous waste, other fuels, and industrial furnace feed stocks, and feed rates of ash, metals, and total chloride and chlorine as necessary to ensure conformance with the certification of precompliance or certification of compliance;

(ii) Carbon monoxide (CO), oxygen, and if applicable, hydrocarbons (HC), on a continuous basis at a common point in the boiler or industrial furnace downstream of the combustion zone and prior to release of stack gases to the atmosphere in accordance with the operating limits specified in the certification of compliance. CO, HC, and oxygen monitors must be installed, operated, and maintained in accordance with the methods specified in Appendix IX.

(iii) Upon the request of the director, sampling and analysis of the hazardous waste (and other fuels and industrial furnace feed stocks as appropriate) and the stack gas emissions must be conducted to verify that the operating conditions established in the certification of precompliance or certification of compliance achieve the applicable standards of sections 11-266-104, 11-266-105, 11-266-106, and 11-266-107.

(2) The boiler or industrial furnace and associated equipment (pumps, valves, pipes, fuel storage tanks, etc.) must be subjected to thorough visual inspection when they contain hazardous waste, at least daily for leaks, spills, fugitive emissions, and signs of tampering.

(3) The automatic hazardous waste feed cutoff system and associated alarms must be tested at least once every seven days when hazardous waste is burned to verify operability, unless the owner or operator can demonstrate that weekly inspections will unduly restrict or upset operations and that less frequent inspections will be adequate. Support for such demonstration shall be included in the operating record. At a minimum, operational testing must be conducted at least once every thirty days.

(4) These monitoring and inspection data must be recorded and the records must be placed in the operating log.

(k) Recordkeeping. The owner or operator must keep in the operating record of the facility all information and data required by this section until closure of the boiler or industrial furnace unit.

(l) Closure. At closure, the owner or operator must remove

all hazardous waste and hazardous waste residues (including, but not limited to, ash, scrubber waters, and scrubber sludges) from the boiler or industrial furnace and must comply with sections 11-265-111 through 11-265-115. [Eff 6/18/94; am 3/13/99; comp SEP 20 1999] (Auth: HRS §§ 342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.103)

§11-266-104 Standards to control organic emissions.

(a) DRE standard.

(1) General. Except as provided in paragraph (a)(3), a boiler or industrial furnace burning hazardous waste must achieve a destruction and removal efficiency (DRE) of 99.99 percent for all organic hazardous constituents in the waste feed. To demonstrate conformance with this requirement, 99.99 percent DRE must be demonstrated during a trial burn for each principal organic hazardous constituent (POHC) designated (under paragraph (a)(2)) in its permit for each waste feed. DRE is determined for each POHC from the following equation:

$$DRE = \left(1 - \frac{W_{out}}{W_{in}}\right) \times 100$$

where:

W_{in} = Mass feed rate of one principal organic hazardous constituent (POHC) in the hazardous waste fired to the boiler or industrial furnace; and

W_{out} = Mass emission rate of the same POHC present in stack gas prior to release to the atmosphere.

(2) Designation of POHCs. Principal organic hazardous constituents (POHCs) are those compounds for which compliance with the DRE requirements of this section shall be demonstrated in a trial burn in conformance with procedures prescribed in section 11-270-66. One or more POHCs shall be designated by the director for each waste feed to be burned. POHCs shall be designated based on the degree of difficulty of destruction of the organic constituents in the waste and on their concentrations or mass in the waste feed considering the results of waste analyses submitted with Part B of the permit application. POHCs are most likely to be selected from among those compounds listed in chapter 11-261, appendix VIII that are also present in the normal waste feed. However, if the applicant demonstrates to the director's satisfaction that a

compound not listed in appendix VIII or not present in the normal waste feed is a suitable indicator of compliance with the DRE requirements of this section, that compound may be designated as a POHC. Such POHCs need not be toxic or organic compounds.

(3) Dioxin-listed waste. A boiler or industrial furnace burning hazardous waste containing (or derived from) EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, or F027 must achieve a destruction and removal efficiency (DRE) of 99.9999 percent for each POHC designated (under paragraph (a)(2)) in its permit. This performance must be demonstrated on POHCs that are more difficult to burn than tetra-, penta-, and hexachlorodibenzo-p-dioxins and dibenzofurans. DRE is determined for each POHC from the equation in paragraph (a)(1). In addition, the owner or operator of the boiler or industrial furnace must notify the director of intent to burn EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, or F027.

(4) Automatic waiver of DRE trial burn. Owners and operators of boilers operated under the special operating requirements provided by section 11-266-110 are considered to be in compliance with the DRE standard of paragraph (a)(1) and are exempt from the DRE trial burn.

(5) Low risk waste. Owners and operators of boilers or industrial furnaces that burn hazardous waste in compliance with the requirements of subsection 11-266-109(a) are considered to be in compliance with the DRE standard of paragraph (a)(1) and are exempt from the DRE trial burn.

(b) Carbon monoxide standard.

(1) Except as provided in subsection (c), the stack gas concentration of carbon monoxide (CO) from a boiler or industrial furnace burning hazardous waste cannot exceed one-hundred ppmv on an hourly rolling average basis (i.e., over any sixty minute period), continuously corrected to seven percent oxygen, dry gas basis.

(2) CO and oxygen shall be continuously monitored in conformance with "Performance Specifications for Continuous Emission Monitoring of Carbon Monoxide and Oxygen for Incinerators, Boilers, and Industrial Furnaces Burning Hazardous Waste" in appendix IX.

(3) Compliance with the one-hundred ppmv CO limit must be demonstrated during the trial burn (for new facilities or an interim status facility applying for a permit) or the compliance test (for interim status facilities). To demonstrate compliance, the highest hourly rolling average CO level during any valid run of the trial burn

or compliance test must not exceed one-hundred ppmv.

(c) Alternative carbon monoxide standard.

(1) The stack gas concentration of carbon monoxide (CO) from a boiler or industrial furnace burning hazardous waste may exceed the one-hundred ppmv limit provided that stack gas concentrations of hydrocarbons (HC) do not exceed twenty ppmv, except as provided by subsection (f) for certain industrial furnaces.

(2) HC limits must be established under this section on an hourly rolling average basis (i.e., over any sixty minute period), reported as propane, and continuously corrected to seven percent oxygen, dry gas basis.

(3) HC shall be continuously monitored in conformance with "Performance Specifications for Continuous Emission Monitoring of Hydrocarbons for Incinerators, Boilers, and Industrial Furnaces Burning Hazardous Waste" in appendix IX. CO and oxygen shall be continuously monitored in conformance with paragraph (b)(2).

(4) The alternative CO standard is established based on CO data during the trial burn (for a new facility) and the compliance test (for an interim status facility). The alternative CO standard is the average over all valid runs of the highest hourly average CO level for each run. The CO limit is implemented on an hourly rolling average basis, and continuously corrected to seven percent oxygen, dry gas basis.

(d) Special requirements for furnaces. Owners and operators of industrial furnaces (e.g., kilns, cupolas) that feed hazardous waste for a purpose other than solely as an ingredient (see subparagraph 11-266-103(a)(5)(ii)) at any location other than the end where products are normally discharged and where fuels are normally fired must comply with the hydrocarbon limits provided by subsection (c) or (f) irrespective of whether stack gas CO concentrations meet the one-hundred ppmv limit of subsection (b).

(e) Controls for dioxins and furans. Owners and operators of boilers and industrial furnaces that are equipped with a dry particulate matter control device that operates within the temperature range of four-hundred and fifty to seven-hundred and fifty degrees Fahrenheit, and industrial furnaces operating under an alternative hydrocarbon limit established under subsection (f) must conduct a site-specific risk assessment as follows to demonstrate that emissions of chlorinated dibenzo-p-dioxins and dibenzofurans do not result in an increased lifetime cancer risk to the hypothetical maximum exposed individual (MEI) exceeding one in one-hundred-thousand:

(1) During the trial burn (for new facilities or an interim status facility applying for a permit) or compliance test (for interim status facilities), determine emission rates of the tetra-octa congeners of

chlorinated dibenzo-p-dioxins and dibenzofurans (CDDs/CDFs) using Method 0023A, Sampling Method for Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans Emissions from Stationary Sources, EPA Publication SW-846, as incorporated by reference in section 11-260-11.

(2) Estimate the 2,3,7,8-TCDD toxicity equivalence of the tetra-octa CDDs/CDFs congeners using "Procedures for Estimating the Toxicity Equivalence of Chlorinated Dibenzo-p-Dioxin and Dibenzofuran Congeners" in appendix IX. Multiply the emission rates of CDD/CDF congeners with a toxicity equivalence greater than zero (see the procedure) by the calculated toxicity equivalence factor to estimate the equivalent emission rate of 2,3,7,8-TCDD;

(3) Conduct dispersion modeling using methods recommended in appendix W of 40 CFR Part 51 ("Guideline on Air Quality Models (Revised)" (1986) and its supplements), the "Hazardous Waste Combustion Air Quality Screening Procedure", provided in appendix IX of this chapter, or in Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised (incorporated by reference in section 11-260-11) to predict the maximum annual average off-site ground level concentration of 2,3,7,8-TCDD equivalents determined under paragraph (e)(2) of this section. The maximum annual average concentration must be used when a person resides on-site; and

(4) The ratio of the predicted maximum annual average ground level concentration of 2,3,7,8-TCDD equivalents to the risk-specific dose for 2,3,7,8-TCDD provided in appendix V (2.2×10^{-7}) shall not exceed 1.0.

(f) Monitoring CO and HC in the by-pass duct of a cement kiln. Cement kilns may comply with the carbon monoxide and hydrocarbon limits provided by subsections (b), (c), and (d) by monitoring in the by-pass duct provided that:

(1) Hazardous waste is fired only into the kiln and not at any location downstream from the kiln exit relative to the direction of gas flow; and

(2) The by-pass duct diverts a minimum of ten percent of kiln off-gas into the duct.

(g) Use of emissions test data to demonstrate compliance and establish operating limits. Compliance with the requirements of this section must be demonstrated simultaneously by emissions testing or during separate runs under identical operating conditions. Further, data to demonstrate compliance with the CO and HC limits of this section or to establish alternative CO or HC limits under this section must be obtained during the time that DRE testing, and where applicable, CDD/CDF testing under

subsection (e) and comprehensive organic emissions testing under subsection (f) is conducted.

(h) Enforcement. For the purposes of permit enforcement, compliance with the operating requirements specified in the permit (under section 11-266-102) will be regarded as compliance with this section. However, evidence that compliance with those permit conditions is insufficient to ensure compliance with the requirements of this section may be "information" justifying modification or revocation and re-issuance of a permit under section 11-270-41. [Eff 6/18/94; am 3/13/99; comp SEP 20 1999] (Auth: HRS §§342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.104)

§11-266-105 Standards to control particulate matter. (a) A boiler or industrial furnace burning hazardous waste may not emit particulate matter in excess of one-hundred and eighty milligrams per dry standard cubic meter (0.08 grains per dry standard cubic foot) after correction to a stack gas concentration of seven percent oxygen, using procedures prescribed in 40 CFR Part 60, appendix A, methods 1 through 5, and appendix IX of this chapter.

(b) An owner or operator meeting the requirements of subsection 11-266-109(b) for the low risk waste exemption is exempt from the particulate matter standard.

(c) For the purposes of permit enforcement, compliance with the operating requirements specified in the permit (under section 11-266-102) will be regarded as compliance with this section. However, evidence that compliance with those permit conditions is insufficient to ensure compliance with the requirements of this section may be "information" justifying modification or revocation and re-issuance of a permit under section 11-270-41. [Eff 6/18/94; comp SEP 20 1999] (Auth: HRS §§ 342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.105)

§11-266-106 Standards to control metals emissions.

(a) General. The owner or operator must comply with the metals standards provided by subsection (b), (c), (d), (e), or (f) for each metal listed in subsection (b) that is present in the hazardous waste at detectable levels using analytical procedures specified in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846), incorporated by reference in section 11-260-11.

(b) Tier I feed rate screening limits. Feed rate screening limits for metals are specified in appendix I as a function of terrain-adjusted effective stack height and terrain and land use in the vicinity of the facility. Criteria for facilities that are not eligible to comply with the screening limits are provided

in paragraph (b)(7).

(1) Noncarcinogenic metals. The feed rates of antimony, barium, lead, mercury, thallium, and silver in all feed streams, including hazardous waste, fuels, and industrial furnace feed stocks shall not exceed the screening limits specified in appendix I.

(i) The feed rate screening limits for antimony, barium, mercury, thallium, and silver are based on either:

(A) An hourly rolling average as defined in clause 11-266-102(e)(6)(i)(B); or

(B) An instantaneous limit not to be exceeded at any time.

(ii) The feed rate screening limit for lead is based on one of the following:

(A) An hourly rolling average as defined in clause 11-266-102(e)(6)(i)(B);

(B) An averaging period of two to twenty four hours as defined in subparagraph 11-266-102(e)(6)(ii) with an instantaneous feed rate limit not to exceed ten times the feed rate that would be allowed on an hourly rolling average basis; or

(C) An instantaneous limit not to be exceeded at any time.

(2) Carcinogenic metals.

(i) The feed rates of arsenic, cadmium, beryllium, and chromium in all feed streams, including hazardous waste, fuels, and industrial furnace feed stocks shall not exceed values derived from the screening limits specified in appendix I. The feed rate of each of these metals is limited to a level such that the sum of the ratios of the actual feed rate to the feed rate screening limit specified in appendix I shall not exceed 1.0, as provided by the following equation:

$$\sum_{i=1}^{n} \frac{AFR_{(i)}}{FRSL_{(i)}} \leq 1.0$$

where:

n = number of carcinogenic metals

AFR = actual feed rate to the device for metal "i"

FRSL = feed rate screening limit provided by Appendix I for metal "i".

(ii) The feed rate screening limits for the carcinogenic metals are based on either:

(A) An hourly rolling average; or
(B) An averaging period of two to twenty four hours as defined in clause 11-266-102(e)(6)(ii) with an instantaneous feed rate limit not to exceed ten times the feed rate that would be allowed on an hourly rolling average basis.

(3) TESH.

(i) The terrain-adjusted effective stack height is determined according to the following equation:

$$TESH = Ha + H1 - Tr$$

where:

Ha = Actual physical stack height
H1 = Plume rise as determined from appendix VI as a function of stack flow rate and stack gas exhaust temperature.
Tr = Terrain rise within five kilometers of the stack.

(ii) The stack height (Ha) may not exceed good engineering practice as specified in 40 CFR 51.100(ii).

(iii) If the TESH for a particular facility is not listed in the table in the appendices, the nearest lower TESH listed in the table shall be used. If the TESH is four meters or less, a value of four meters shall be used.

(4) Terrain type. The screening limits are a function of whether the facility is located in noncomplex or complex terrain. A device located where any part of the surrounding terrain within five kilometers of the stack equals or exceeds the elevation of the physical stack height (Ha) is considered to be in complex terrain and the screening limits for complex terrain apply. Terrain measurements are to be made from U.S. Geological Survey 7.5-minute topographic maps of the area surrounding the facility.

(5) Land use. The screening limits are a function of whether the facility is located in an area where the land use is urban or rural. To determine whether land use in the vicinity of the facility is urban or rural, procedures provided in appendices IX or X shall be used.

(6) Multiple stacks. Owners and operators of facilities with more than one on-site stack from a boiler, industrial furnace, incinerator, or other thermal treatment unit subject to controls of metals emissions under a hazardous waste management operating permit or interim status controls must comply with the screening

limits for all such units assuming all hazardous waste is fed into the device with the worst-case stack based on dispersion characteristics. The worst-case stack is determined from the following equation as applied to each stack:

$$K = HVT$$

where:

K = a parameter accounting for relative influence of stack height and plume rise;
H = physical stack height (meters);
V = stack gas flow rate (m^3/second); and
T = exhaust temperature (°K).

The stack with the lowest value of K is the worst-case stack.

(7) Criteria for facilities not eligible for screening limits. If any criteria below are met, the Tier I and Tier II screening limits do not apply. Owners and operators of such facilities must comply with either the Tier III standards provided by subsection (d) of this section or with the adjusted Tier I feed rate screening limits provided by subsection (e) of this section.

(i) The device is located in a narrow valley less than one kilometer wide;

(ii) The device has a stack taller than twenty meters and is located such that the terrain rises to the physical height within one kilometer of the facility;

(iii) The device has a stack taller than twenty meters and is located within five kilometers of a shoreline of a large body of water such as an ocean or large lake;

(iv) The physical stack height of any stack is less than 2.5 times the height of any building within five building heights or five projected building widths of the stack and the distance from the stack to the closest boundary is within five building heights or five projected building widths of the associated building; or

(v) The director determines that standards based on site-specific dispersion modeling are required.

(8) Implementation. The feed rate of metals in each feedstream must be monitored to ensure that the feed rate screening limits are not exceeded.

(c) Tier II emission rate screening limits. Emission rate screening limits are specified in Appendix I as a function of terrain-adjusted effective stack height and terrain and land use

in the vicinity of the facility. Criteria for facilities that are not eligible to comply with the screening limits are provided in paragraph (b)(7).

(1) Noncarcinogenic metals. The emission rates of antimony, barium, lead, mercury, thallium, and silver shall not exceed the screening limits specified in Appendix I.

(2) Carcinogenic metals. The emission rates of arsenic, cadmium, beryllium, and chromium shall not exceed values derived from the screening limits specified in Appendix I. The emission rate of each of these metals is limited to a level such that the sum of the ratios of the actual emission rate to the emission rate screening limit specified in Appendix I shall not exceed 1.0, as provided by the following equation:

$$\sum_{i=1}^{n} \frac{AER_{(i)}}{ERSL_{(i)}} \leq 1.0$$

where:

n = number of carcinogenic metals
AER = actual emission rate for metal "i"
ERSL = emission rate screening limit provided by appendix I of this chapter for metal "i".

(3) Implementation. The emission rate limits must be implemented by limiting feed rates of the individual metals to levels during the trial burn (for new facilities or an interim status facility applying for a permit) or the compliance test (for interim status facilities). The feed rate averaging periods are the same as provided by subparagraphs (b)(1)(i) and (b)(1)(ii) and (b)(2)(ii). The feed rate of metals in each feedstream must be monitored to ensure that the feed rate limits for the feedstreams specified under section 11-266-102 or 11-266-103 are not exceeded.

(4) Definitions and limitations. The definitions and limitations provided by subsection (b) for the following terms also apply to the Tier II emission rate screening limits provided by subsection (c): terrain-adjusted effective stack height, good engineering practice stack height, terrain type, land use, and criteria for facilities not eligible to use the screening limits.

(5) Multiple stacks.

(i) Owners and operators of facilities with more than one onsite stack from a boiler, industrial furnace, incinerator, or other thermal treatment unit subject to controls on metals emissions under

a hazardous waste management permit or interim status controls must comply with the emissions screening limits for any such stacks assuming all hazardous waste is fed into the device with the worst-case stack based on dispersion characteristics.

(ii) The worst-case stack is determined by procedures provided in paragraph (b)(6).

(iii) For each metal, the total emissions of the metal from those stacks shall not exceed the screening limit for the worst-case stack.

(d) Tier III and Adjusted Tier I site-specific risk assessment. The requirements of this subsection apply to facilities complying with either the Tier III or Adjusted Tier I controls, except where specified otherwise.

(1) General. Conformance with the Tier III metals controls must be demonstrated by emissions testing to determine the emission rate for each metal. In addition, conformance with either the Tier III or Adjusted Tier I metals controls must be demonstrated by air dispersion modeling to predict the maximum annual average off-site ground level concentration for each dispersion modeling to predict the maximum annual average off-site ground level concentration for each metal, and a demonstration that acceptable ambient levels are not exceeded.

(2) Acceptable ambient levels. Appendices IV and V of this chapter list the acceptable ambient levels for purposes of this rule. Reference air concentrations (RACs) are listed for the noncarcinogenic metals and 10^{-5} risk-specific doses (RSDs) are listed for the carcinogenic metals. The RSD for a metal is the acceptable ambient level for that metal provided that only one of the four carcinogenic metals is emitted. If more than one carcinogenic metal is emitted, the acceptable ambient level for the carcinogenic metals is a fraction of the RSD as described in paragraph (d)(3).

(3) Carcinogenic metals. For the carcinogenic metals, arsenic, cadmium, beryllium, and chromium, the sum of the ratios of the predicted maximum annual average off-site ground level concentrations (except that on-site concentrations must be considered if a person resides on site) to the risk-specific dose (RSD) for all carcinogenic metals emitted shall not exceed 1.0 as determined by the following equation:

$$\sum_{i=1}^{n} \frac{\text{Predicted Ambient Concentration}_{(i)}}{\text{Risk-Specific Dose}_{(i)}} \leq 1.0$$

where: n = number of carcinogenic metals

(4) Noncarcinogenic metals. For the noncarcinogenic metals, the predicted maximum annual average off-site ground level concentration for each metal shall not exceed the reference air concentration (RAC).

(5) Multiple stacks. Owners and operators of facilities with more than one on-site stack from a boiler, industrial furnace, incinerator, or other thermal treatment unit subject to controls on metals emissions under a hazardous waste management permit or interim status controls must conduct emissions testing (except that facilities complying with Adjusted Tier I controls need not conduct emissions testing) and dispersion modeling to demonstrate that the aggregate emissions from all such on-site stacks do not result in an exceedance of the acceptable ambient levels.

(6) Implementation. Under Tier III, the metals controls must be implemented by limiting feed rates of the individual metals to levels during the trial burn (for new facilities or an interim status facility applying for a permit) or the compliance test (for interim status facilities). The feed rate averaging periods are the same as provided by subparagraphs (b)(1)(i) and (ii) and (b)(2)(ii). The feed rate of metals in each feedstream must be monitored to ensure that the feed rate limits for the feedstreams specified under section 11-266-102 or 11-266-103 are not exceeded.

(e) Adjusted Tier I feed rate screening limits. The owner or operator may adjust the feed rate screening limits provided by appendix I to account for site-specific dispersion modeling. Under this approach, the adjusted feed rate screening limit for a metal is determined by back-calculating from the acceptable ambient level provided by appendices IV and V using dispersion modeling to determine the maximum allowable emission rate. This emission rate becomes the adjusted Tier I feed rate screening limit. The feed rate screening limits for carcinogenic metals are implemented as prescribed in paragraph (b)(2).

(f) Alternative implementation approaches.

(1) The director may approve on a case-by-case basis approaches to implement the Tier II or Tier III metals emission limits provided by subsection (c) or (d) alternative to monitoring the feed rate of metals in each feedstream.

(2) The emission limits provided by subsection (d) must be determined as follows:

(i) For each noncarcinogenic metal, by back-calculating from the RAC provided in appendix IV of this chapter to determine the allowable emission rate for each metal using the dilution

factor for the maximum annual average ground level concentration predicted by dispersion modeling in conformance with subsection (h); and

(ii) For each carcinogenic metal by:

(A) Back-calculating from the RSD provided in appendix V to determine the allowable emission rate for each metal if that metal were the only carcinogenic metal emitted using the dilution factor for the maximum annual average ground level concentration predicted by dispersion modeling in conformance with subsection (h); and

(B) If more than one carcinogenic metal is emitted, selecting an emission limit for each carcinogenic metal not to exceed the emission rate determined by clause (f)(2)(ii)(A) such that the sum for all carcinogenic metals of the ratios of the selected emission limit to the emission rate determined by that clause does not exceed 1.0.

(g) Emission testing ---

(1) General. Emission testing for metals shall be conducted using Method 0060, Determinations of Metals in Stack Emissions, EPA Publication SW-846, as incorporated by reference in section 11-260-11.

(2) Hexavalent chromium. Emissions of chromium are assumed to be hexavalent chromium unless the owner or operator conducts emissions testing to determine hexavalent chromium emissions using procedures prescribed in Method 0061, Determination of Hexavalent Chromium Emissions from Stationary Sources, EPA Publication SW-846, as incorporated by reference in section 11-260-11.

(h) Dispersion modeling. Dispersion modeling required under this section shall be conducted according to methods recommended in appendix W of 40 CFR Part 51 ("Guideline on Air Quality Models (Revised)" (1986) and its supplements), the "Hazardous Waste Combustion Air Quality Screening Procedure", provided in appendix IX, or in Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised (incorporated by reference in section 11-260-11) to predict the maximum annual average off-site ground level concentration. However, on-site concentrations must be considered when a person resides on-site.

(i) Enforcement. For the purposes of permit enforcement, compliance with the operating requirements specified in the permit (under section 11-266-102) will be regarded as compliance with this section. However, evidence that compliance with those permit conditions is insufficient to ensure compliance with the requirements of this section may be "information" justifying modification or revocation and re-issuance of a permit under section 11-270-41. [Eff 6/18/94; am 3/13/99; comp

SEP 20 1999] (Auth: HRS §§ 342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.106)

§11-266-107 Standards to control hydrogen chloride (HCl) and chlorine gas (Cl_2) emissions.

(a) General. The owner or operator must comply with the hydrogen chloride (HCl) and chlorine (Cl_2) controls provided by subsection (b), (c), or (e).

(b) Screening limits ---

(1) Tier I feed rate screening limits. Feed rate screening limits are specified for total chlorine in Appendix II as a function of terrain-adjusted effective stack height and terrain and land use in the vicinity of the facility. The feed rate of total chlorine and chloride, both organic and inorganic, in all feed streams, including hazardous waste, fuels, and industrial furnace feed stocks shall not exceed the levels specified.

(2) Tier II emission rate screening limits. Emission rate screening limits for HCl and Cl_2 are specified in Appendix III as a function of terrain-adjusted effective stack height and terrain and land use in the vicinity of the facility. The stack emission rates of HCl and Cl_2 shall not exceed the levels specified.

(3) Definitions and limitations. The definitions and limitations provided by subsection 11-266-106(b) for the following terms also apply to the screening limits provided by this subsection: terrain-adjusted effective stack height, good engineering practice stack height, terrain type, land use, and criteria for facilities not eligible to use the screening limits.

(4) Multiple stacks. Owners and operators of facilities with more than one on-site stack from a boiler, industrial furnace, incinerator, or other thermal treatment unit subject to controls on HCl or Cl_2 emissions under a hazardous waste management permit or interim status controls must comply with the Tier I and Tier II screening limits for those stacks assuming all hazardous waste is fed into the device with the worst-case stack based on dispersion characteristics.

(i) The worst-case stack is determined by procedures provided in paragraph 11-266-106(b)(6).

(ii) Under Tier I, the total feed rate of chlorine and chloride to all subject devices shall not exceed the screening limit for the worst-case stack.

(iii) Under Tier II, the total emissions of HCl and Cl_2 from all subject stacks shall not exceed the screening limit for the worst-case stack.

(c) Tier III site-specific risk assessments ---

(1) General. Conformance with the Tier III controls must be demonstrated by emissions testing to determine the emission rate for HCl and Cl_2, air dispersion modeling to predict the maximum annual average off-site ground level concentration for each compound, and a demonstration that acceptable ambient levels are not exceeded.

(2) Acceptable ambient levels. Appendix IV lists the reference air concentrations (RACs) for HCl (7 micrograms per cubic meter) and Cl_2 (0.4 micrograms per cubic meter).

(3) Multiple stacks. Owners and operators of facilities with more than one on-site stack from a boiler, industrial furnace, incinerator, or other thermal treatment unit subject to controls on HCl or Cl_2 emissions under a hazardous waste management permit or interim status controls must conduct emissions testing and dispersion modeling to demonstrate that the aggregate emissions from all such on-site stacks do not result in an exceedance of the acceptable ambient levels for HCl and Cl_2.

(d) Averaging periods. The HCl and Cl_2 controls are implemented by limiting the feed rate of total chlorine and chloride in all feedstreams, including hazardous waste, fuels, and industrial furnace feed stocks. Under Tier I, the feed rate of total chloride and chlorine is limited to the Tier I Screening Limits. Under Tier II and Tier III, the feed rate of total chloride and chlorine is limited to the feed rates during the trial burn (for new facilities or an interim status facility applying for a permit) or the compliance test (for interim status facilities). The feed rate limits are based on either:

(1) An hourly rolling average as defined in paragraph 11-266-102(e)(6); or

(2) An instantaneous basis not to be exceeded at any time.

(e) Adjusted Tier I feed rate screening limits. The owner or operator may adjust the feed rate screening limit provided by Appendix II to account for site-specific dispersion modeling. Under this approach, the adjusted feed rate screening limit is determined by back-calculating from the acceptable ambient level for Cl_2 provided by Appendix IV of this chapter using dispersion modeling to determine the maximum allowable emission rate. This emission rate becomes the adjusted Tier I feed rate screening limit.

(f) Emissions testing. Emissions testing for HCl and Cl_2 shall be conducted using the procedures described in Methods 0050 or 0051, EPA Publication SW-846, as incorporated by reference in section 11-260-11.

(g) Dispersion modeling. Dispersion modeling shall be

conducted according to the provisions of subsection 11-266-106(h).

(h) Enforcement. For the purposes of permit enforcement, compliance with the operating requirements specified in the permit (under section 11-266-102) will be regarded as compliance with this section. However, evidence that compliance with those permit conditions is insufficient to ensure compliance with the requirements of this section may be "information" justifying modification or revocation and re-issuance of a permit under section 11-270-41. [Eff 6/18/94; am 3/13/99; comp SEP 20 1999] (Auth: HRS §§ 342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.107)

§11-266-108 Small quantity on-site burner exemption. (a) Exempt quantities. Owners and operators of facilities that burn hazardous waste in an on-site boiler or industrial furnace are exempt from the requirements of this subchapter provided that:

(1) The quantity of hazardous waste burned in a device for a calendar month does not exceed the limits provided in the following table based on the terrain-adjusted effective stack height as defined in paragraph 11-266-106(b)(3):

Exempt Quantities for Small Quantity Burner Exemption

Terrain-adjusted effective stack height of device (meters)	Allowable hazardous waste burning rate (gallons/month)	Terrain-adjusted effective stack height of device (meters)	Allowable hazardous waste burning rate (Gallons/month)
0 to 3.9	0	40.0 to 44.9	210
4.0 to 5.9	13	45.0 to 49.9	260
6.0 to 7.9	18	50.0 to 54.9	330
8.0 to 9.9	27	55.0 to 59.9	400
10.0 to 11.9	40	60.0 to 64.9	490
12.0 to 13.9	48	65.0 to 69.9	610
14.0 to 15.9	59	70.0 to 74.9	680
16.0 to 17.9	69	75.0 to 79.9	760
18.0 to 19.9	76	80.0 to 84.9	850
20.0 to 21.9	84	85.0 to 89.9	960
22.0 to 23.9	93	90.0 to 94.9	1,100
24.0 to 25.9	100	95.0 to 99.9	1,200
26.0 to 27.9	110	100.0 to 104.9	1,300
28.0 to 29.9	130	105.0 to 109.9	1,500
30.0 to 34.9	140	110.0 to 114.9	1,700
35.0 to 39.9	170	115.0 or greater	1,900

(2) The maximum hazardous waste firing rate does not exceed at any time one percent of the total fuel requirements for the device (hazardous waste plus other fuel) on a total heat input or mass input basis, whichever results in the lower mass feed rate of hazardous waste.

(3) The hazardous waste has a minimum heating value of five-thousand Btu/lb, as generated; and

(4) The hazardous waste fuel does not contain (and is not derived from) EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, or F027.

(b) Mixing with nonhazardous fuels. If hazardous waste fuel is mixed with a nonhazardous fuel, the quantity of hazardous waste before such mixing is used to comply with subsection (a).

(c) Multiple stacks. If an owner or operator burns hazardous waste in more than one on-site boiler or industrial furnace exempt under this section, the quantity limits provided by paragraph (a)(1) are implemented according to the following equation:

$$\sum_{i=1}^{n} \frac{\text{Actual Quantity Burned}_{(i)}}{\text{Allowable Quantity Burned}_{(i)}} \leq 1.0$$

where:

"n" means the number of stacks;
"Actual Quantity Burned" means the waste quantity burned per month in device "i";
"Allowable Quantity Burned" means the maximum allowable exempt quantity for stack "i" from the table in (a)(1) above.

(d) Notification requirements. The owner or operator of facilities qualifying for the small quantity burner exemption under this section must provide a one-time signed, written notice to the department indicating the following:

(1) The combustion unit is operating as a small quantity burner of hazardous waste;

(2) The owner and operator are in compliance with the requirements of this section; and

(3) The maximum quantity of hazardous waste that the facility may burn per month as provided by paragraph (a)(1).

(e) Recordkeeping requirements. The owner or operator must maintain at the facility for at least three years sufficient records documenting compliance with the hazardous waste quantity, firing rate, and heating value limits of this section. At a minimum, these records must indicate the quantity of hazardous

waste and other fuel burned in each unit per calendar month, and the heating value of the hazardous waste. [Eff 6/18/94; comp SEP 20 1999] (Auth: HRS §§342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.108)

§11-266-109 Low risk waste exemption. (a) Waiver of DRE standard. The DRE standard of subsection 11-266-104(a) does not apply if the boiler or industrial furnace is operated in conformance with paragraph (a)(1) of this section and the owner or operator demonstrates by procedures prescribed in paragraph (a)(2) of this section that the burning will not result in unacceptable adverse health effects.

(1) The device shall be operated as follows:

(i) A minimum of fifty percent of fuel fired to the device shall be fossil fuel, fuels derived from fossil fuel, tall oil, or, if approved by the director on a case-by-case basis, other nonhazardous fuel with combustion characteristics comparable to fossil fuel. Such fuels are termed "primary fuel" for purposes of this section. (Tall oil is a fuel derived from vegetable and rosin fatty acids.) The fifty percent primary fuel firing rate shall be determined on a total heat or mass input basis, whichever results in the greater mass feed rate of primary fuel fired;

(ii) Primary fuels and hazardous waste fuels shall have a minimum as-fired heating value of eight thousand Btu/lb;

(iii) The hazardous waste is fired directly into the primary fuel flame zone of the combustion chamber; and

(iv) The device operates in conformance with the carbon monoxide controls provided by paragraph 11-266-104(b)(1). Devices subject to the exemption provided by this section are not eligible for the alternative carbon monoxide controls provided by subsection 11-266-104(c).

(2) Procedures to demonstrate that the hazardous waste burning will not pose unacceptable adverse public health effects are as follows:

(i) Identify and quantify those nonmetal compounds listed in appendix VIII of chapter 11-261 that could reasonably be expected to be present in the hazardous waste. The constituents excluded from analysis must be identified and the basis for their exclusion explained;

(ii) Calculate reasonable, worst case emission rates for each constituent identified in subparagraph (a)(2)(i) by assuming the device achieves 99.9

percent destruction and removal efficiency. That is, assume that 0.1 percent of the mass weight of each constituent fed to the device is emitted.

(iii) For each constituent identified in subparagraph (a)(2)(i), use emissions dispersion modeling to predict the maximum annual average ground level concentration of the constituent.

(A) Dispersion modeling shall be conducted using methods specified in subsection 11-266-106(h).

(B) Owners and operators of facilities with more than one on-site stack from a boiler or industrial furnace that is exempt under this section must conduct dispersion modeling of emissions from all stacks exempt under this section to predict ambient levels prescribed by this subsection.

(iv) Ground level concentrations of constituents predicted under subparagraph (a)(2)(iii) must not exceed the following levels:

(A) For the noncarcinogenic compounds listed in appendix IV of this chapter, the levels established in appendix IV;

(B) For the carcinogenic compounds listed in appendix V of this chapter, the sum for all constituents of the ratios of the actual ground level concentration to the level established in appendix V cannot exceed 1.0; and

(C) For constituents not listed in appendix IV or V, 0.1 micrograms per cubic meter.

(b) Waiver of particulate matter standard. The particulate matter standard of section 11-266-105 does not apply if:

(1) The DRE standard is waived under subsection (a) of this section; and

(2) The owner or operator complies with the Tier I or adjusted Tier I metals feed rate screening limits provided by subsection 11-266-106(b) or 11-266-106(e).

[Eff 6/18/94; comp SEP 20 1999 (Auth: HRS §§ 342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.109)

§11-266-110 Waiver of DRE trial burn for boilers. Boilers that operate under the special requirements of this section, and that do not burn hazardous waste containing (or derived from) EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, or F027, are considered to be in conformance with the DRE standard of subsection 11-266-104(a), and a trial burn to demonstrate DRE is waived. When burning hazardous waste:

(a) A minimum of fifty percent of fuel fired to the device

shall be fossil fuel, fuels derived from fossil fuel, tall oil, or, if approved by the director on a case-by-case basis, other nonhazardous fuel with combustion characteristics comparable to fossil fuel. Such fuels are termed "primary fuel" for purposes of this section. (Tall oil is a fuel derived from vegetable and rosin fatty acids.) The fifty percent primary fuel firing rate shall be determined on a total heat or mass input basis, whichever results in the greater mass feed rate of primary fuel fired;

(b) Boiler load shall not be less than forty percent. Boiler load is the ratio at any time of the total heat input to the maximum design heat input;

(c) Primary fuels and hazardous waste fuels shall have a minimum as-fired heating value of eight thousand Btu/lb, and each material fired in a burner where hazardous waste is fired must have a heating value of at least eight thousand Btu/lb, as-fired;

(d) The device shall operate in conformance with the carbon monoxide standard provided by paragraph 11-266-104(b)(1). Boilers subject to the waiver of the DRE trial burn provided by this section are not eligible for the alternative carbon monoxide standard provided by subsection 11-266-104(c);

(e) The boiler must be a watertube type boiler that does not feed fuel using a stoker or stoker type mechanism; and

(f) The hazardous waste shall be fired directly into the primary fuel flame zone of the combustion chamber with an air or steam atomization firing system, mechanical atomization system, or a rotary cup atomization system under the following conditions:

(1) Viscosity. The viscosity of the hazardous waste fuel as-fired shall not exceed three-hundred SSU;

(2) Particle size. When a high pressure air or steam atomizer, low pressure atomizer, or mechanical atomizer is used, seventy percent of the hazardous waste fuel must pass through a two-hundred mesh (seventy-four micron) screen, and when a rotary cup atomizer is used, seventy percent of the hazardous waste must pass through a one-hundred mesh (one-hundred and fifty micron) screen;

(3) Mechanical atomization systems. Fuel pressure within a mechanical atomization system and fuel flow rate shall be maintained within the design range taking into account the viscosity and volatility of the fuel;

(4) Rotary cup atomization systems. Fuel flow rate through a rotary cup atomization system must be maintained within the design range taking into account the viscosity and volatility of the fuel. [Eff 6/18/94; comp SEP 20 1999 (Auth: HRS §§ 342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.110)

§11-266-111 <u>Standards for direct transfer.</u>

(a) Applicability. The regulations in this section apply to owners and operators of boilers and industrial furnaces subject to section 11-266-102 or 11-266-103 if hazardous waste is directly transferred from a transport vehicle to a boiler or industrial furnace without the use of a storage unit.

(b) Definitions.

(1) When used in this section, the following terms have the meanings given below:

"Direct transfer equipment" means any device (including but not limited to, such devices as piping, fittings, flanges, valves, and pumps) that is used to distribute, meter, or control the flow of hazardous waste between a container (i.e., transport vehicle) and a boiler or industrial furnace.

"Container" means any portable device in which hazardous waste is transported, stored, treated, or otherwise handled, and includes transport vehicles that are containers themselves (e.g., tank trucks, tanker-trailers, and rail tank cars), and containers placed on or in a transport vehicle.

(2) This section references several requirements provided in subchapters I and J of chapters 11-264 and 11-265. For purposes of this section, the term "tank systems" in those referenced requirements means direct transfer equipment as defined in paragraph (b)(1) of this section.

(c) General operating requirements.

(1) No direct transfer of a pumpable hazardous waste shall be conducted from an open-top container to a boiler or industrial furnace.

(2) Direct transfer equipment used for pumpable hazardous waste shall always be closed, except when necessary to add or remove the waste, and shall not be opened, handled, or stored in a manner that may cause any rupture or leak.

(3) The direct transfer of hazardous waste to a boiler or industrial furnace shall be conducted so that it does not:

(i) Generate extreme heat or pressure, fire, explosion, or violent reaction;

(ii) Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health;

(iii) Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;

(iv) Damage the structural integrity of the container or direct transfer equipment containing the waste;

(v) Adversely affect the capability of the boiler or industrial furnace to meet the standards provided

by sections 11-266-104 through 11-266-107; or

(vi) Threaten human health or the environment.

(4) Hazardous waste shall not be placed in direct transfer equipment, if it could cause the equipment or its secondary containment system to rupture, leak, corrode, or otherwise fail.

(5) The owner or operator of the facility shall use appropriate controls and practices to prevent spills and overflows from the direct transfer equipment or its secondary containment systems. These include at a minimum:

(i) Spill prevention controls (e.g., check valves, dry discount couplings); and

(ii) Automatic waste feed cutoff to use if a leak or spill occurs from the direct transfer equipment.

(d) Areas where direct transfer vehicles (containers) are located. Applying the definition of container under this section, owners and operators must comply with the following requirements:

(1) The containment requirements of section 11-264-175;

(2) The use and management requirements of subchapter I, chapter 11-265, except for sections 11-265-170 and 11-265-174, and except that in lieu of the special requirements of section 11-265-176 for ignitable or reactive waste, the owner or operator may comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjacent property line that can be built upon as required in Tables 2-1 through 2-6 of the National Fire Protection Association's (NFPA) "Flammable and Combustible Liquids Code," (1977 or 1981), (incorporated by reference, see section 11-260-11). The owner or operator must obtain and keep on file at the facility a written certification by the local Fire Marshall that the installation meets the subject NFPA codes; and

(3) The closure requirements of section 11-264-178.

(e) Direct transfer equipment. Direct transfer equipment must meet the following requirements:

(1) Secondary containment. Owners and operators shall comply with the secondary containment requirements of section 11-265-193, except for subsections 11-265-193(a), (d), (e), and (i) as follows:

(i) For all new direct transfer equipment, prior to their being put into service; and

(ii) For existing direct transfer equipment, by the effective date of this chapter.

(2) Requirements prior to meeting secondary containment requirements.

(i) For existing direct transfer equipment that does not have secondary containment, the owner or

operator shall determine whether the equipment is leaking or is unfit for use. The owner or operator shall obtain and keep on file at the facility a written assessment reviewed and certified by a qualified, registered professional engineer in accordance with subsection 11-270-11(d) that attests to the equipment's integrity.

(ii) This assessment shall determine whether the direct transfer equipment is adequately designed and has sufficient structural strength and compatibility with the waste(s) to be transferred to ensure that it will not collapse, rupture, or fail. At a minimum, this assessment shall consider the following:

(A) Design standard(s), if available, according to which the direct transfer equipment was constructed;

(B) Hazardous characteristics of the waste(s) that have been or will be handled;

(C) Existing corrosion protection measures;

(D) Documented age of the equipment, if available, (otherwise, an estimate of the age); and

(E) Results of a leak test or other integrity examination such that the effects of temperature variations, vapor pockets, cracks, leaks, corrosion, and erosion are accounted for.

(iii) If, as a result of the assessment specified above, the direct transfer equipment is found to be leaking or unfit for use, the owner or operator shall comply with the requirements of subsections 11-265-196(a) and (b).

(3) Inspections and recordkeeping.

(i) The owner or operator must inspect at least once each operating hour when hazardous waste is being transferred from the transport vehicle (container) to the boiler or industrial furnace:

(A) Overfill/spill control equipment (e.g., waste-feed cutoff systems, bypass systems, and drainage systems) to ensure that it is in good working order;

(B) The above ground portions of the direct transfer equipment to detect corrosion, erosion, or releases of waste (e.g., wet spots, dead vegetation); and

(C) Data gathered from monitoring equipment and leak-detection equipment, (e.g., pressure and temperature gauges) to ensure that the direct transfer equipment is being operated

according to its design.

(ii) The owner or operator must inspect cathodic protection systems, if used, to ensure that they are functioning properly according to the schedule provided by subsection 11-265-195(b).

(iii) Records of inspections made under this paragraph shall be maintained in the operating record at the facility, and available for inspection for at least three years from the date of the inspection.

(4) Design and installation of new ancillary equipment. Owners and operators must comply with the requirements of section 11-265-192.

(5) Response to leaks or spills. Owners and operators must comply with the requirements of section 11-265-196.

(6) Closure. Owners and operators must comply with the requirements of section 11-265-197, except for paragraphs 11-265-197(c)(2) through (c)(4). [Eff 6/18/94; comp SEP 20 1999] (Auth: HRS §§ 342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.111)

§11-266-112 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 a hazardous waste under paragraph 11-261-4(b)(4), (7), or (8) unless the device and the owner or operator meet the following requirements:

(a) The device meets the following criteria:

(1) Boilers. Boilers must burn at least fifty percent 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 subject to paragraph 11-261-4(b)(7) must process at least fifty percent by weight normal, nonhazardous raw materials;

(3) Cement kilns. Cement kilns must process at least fifty percent 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 must not contain appendix VIII, chapter 11-261 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 subsection 11-260-11(a).

(i) Normal residue. Concentrations of toxic constituents of concern in normal residue shall be determined based on analyses of a minimum of ten samples representing a minimum of ten days of operation. Composite samples may be used to develop a sample for analysis provided that the compositing period does not exceed twenty four hours. The upper tolerance limit (at ninety-five percent confidence with a ninety-five percent 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 must be revised or statistically-derived concentrations of toxic constituents in normal residue must 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.

(ii) Waste-derived residue. Waste-derived residue shall be sampled and analyzed as often as necessary to determine whether the residue generated during each twenty-four-hour period has concentrations of toxic constituents that are higher than the concentrations established for the normal residue under subparagraph (b)(1)(i). 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 twenty-four-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 twenty four hours. If more than one sample is analyzed to

characterize waste-derived residues generated over a twenty-four-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 ---

(i) Nonmetal constituents. The concentration of each nonmetal toxic constituent of concern (specified in paragraph (b)(1) of this section) in the waste-derived residue must 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 (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 paragraph (b)(1), that the owner or operator complies with alternative levels defined as the land disposal restriction limits specified in section 11-268-43 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 departmental 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 11-268-43 for F039 nonwastewaters. The stay will remain in effect until this paragraph is further amended; and

(ii) Metal constituents. The concentration of metals in an extract obtained using the Toxicity Characteristic Leaching Procedure of section 11-261-24 must not exceed the levels specified in appendix VII; and

(iii) Sampling and analysis. Waste-derived residue shall be sampled and analyzed as often as necessary to

determine whether the residue generated during each twenty-four-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 twenty-four-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 twenty-four hours. If more than one sample is analyzed to characterize waste-derived residues generated over a twenty-four-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 11-261, that are present in waste-derived residues;

(2) If the waste-derived residue is compared with normal residue under paragraph (b)(1) of this section:

(i) The levels of constituents in appendix VIII, chapter 11-261, that are present in normal residues; and

(ii) 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. [Eff 3/18/94; am 3/13/99; comp SEP 20 1999] (Auth: HRS §§ 342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.112)

SUBCHAPTERS I - L

[RESERVED]

SUBCHAPTER M

MILITARY MUNITIONS

§11-266-200 Applicability. (a) The regulations in this subchapter identify when military munitions become a solid waste, and, if these wastes are also hazardous under this subchapter or chapter 11-261, the management standards that apply to these

wastes.

(b) Unless otherwise specified in this subchapter, all applicable requirements in chapters 11-260 through 11-270 apply to waste military munitions. [Eff 3/13/99; comp SEP 20 1999] (Auth: HRS §§342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.200)

§11-266-201 Definitions. In addition to the definitions in section 11-260-10, the following definitions apply to this subchapter:

"Active range" means a military range that is currently in service and is being regularly used for range activities.

"Chemical agents and munitions" are defined as in 50 U.S.C. section 1521(j)(1).

"Director" is as defined in section 11-270-2.

"Explosives or munitions emergency response specialist" is as defined in section 11-260-10.

"Explosives or munitions emergency" is as defined in section 11-260-10.

"Explosives or munitions emergency response" is as defined in section 11-260-10.

"Inactive range" means a military range that is not currently being used, but that is still under military control and considered by the military to be a potential range area, and that has not been put to a new use that is incompatible with range activities.

"Military" means the U.S. Department of Defense (DOD), the U.S. Armed Services, U.S. Coast Guard, National Guards, U.S. Department of Energy (DOE), or other parties under contract or acting as an agent for the foregoing, who handle military munitions.

"Military munitions" is as defined in section 11-260-10.

"Military range" means designated land and water areas set aside, managed, and used to conduct research on, develop, test, and evaluate military munitions and explosives, other ordnance, or weapon systems, or to train military personnel in their use and handling. Ranges include firing lines and positions, maneuver areas, firing lanes, test pads, detonation pads, impact areas, and buffer zones with restricted access and exclusionary areas.

"Unexploded ordnance (UXO)" means military munitions that have been primed, fused, armed, or otherwise prepared for action, and have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installation, personnel, or material and remain unexploded either by malfunction, design, or any other cause. [Eff 3/13/99; comp SEP 20 1999] (Auth: HRS §§342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.201)

§11-266-202 Definition of solid waste. (a) A military munition is not a solid waste when:

(1) Used for its intended purpose, including:

(i) Use in training military personnel or explosives and munitions emergency response specialists (including training in proper destruction of unused propellant or other munitions); or

(ii) Use in research, development, testing, and evaluation of military munitions, weapons, or weapon systems; or

(iii) Recovery, collection, and on-range destruction of unexploded ordnance and munitions fragments during range clearance activities at active or inactive ranges. However, "use for intended purpose" does not include the on-range disposal or burial of unexploded ordnance and contaminants when the burial is not a result of product use.

(2) An unused munition, or component thereof, is being repaired, reused, recycled, reclaimed, disassembled, reconfigured, or otherwise subjected to materials recovery activities, unless such activities involve use constituting disposal as defined in section 11-261-2(c)(1), or burning for energy recovery as defined in section 11-261-2(c)(2).

(b) An unused military munition is a solid waste when any of the following occurs:

(1) The munition is abandoned by being disposed of, burned, detonated (except during intended use as specified in subsection (a)), incinerated, or treated prior to disposal; or

(2) The munition is removed from storage in a military magazine or other storage area for the purpose of being disposed of, burned, or incinerated, or treated prior to disposal, or

(3) The munition is deteriorated or damaged (e.g., the integrity of the munition is compromised by cracks, leaks, or other damage) to the point that it cannot be put into serviceable condition, and cannot reasonably be recycled or used for other purposes; or

(4) The munition has been declared a solid waste by an authorized military official.

(c) A used or fired military munition is a solid waste:

(1) When transported off range or from the site of use, where the site of use is not a range, for the purposes of storage, reclamation, treatment, disposal, or treatment prior to disposal; or

(2) If recovered, collected, and then disposed of by burial, or landfilling either on or off a range.

(d) For purposes of section 342J-2, HRS, a used or fired military munition is a solid waste, and, therefore, is

potentially subject to corrective action authorities under section 342J-36, HRS, or imminent and substantial endangerment authorities under section 342J-8, HRS, if the munition lands off-range and is not promptly rendered safe and/or retrieved. Any imminent and substantial threats associated with any remaining material must be addressed. If remedial action is infeasible, the operator of the range must maintain a record of the event for as long as any threat remains. The record must include the type of munition and its location (to the extent the location is known). [Eff 3/13/99; comp SEP 20 1998 (Auth: HRS §§342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.202)

§11-266-203 Standards applicable to the transportation of solid waste military munitions. (a) Criteria for hazardous waste regulation of waste non-chemical military munitions in transportation.

(1) Waste military munitions that are being transported and that exhibit a hazardous waste characteristic or are listed as hazardous waste under chapter 11-261, are listed or identified as a hazardous waste (and thus are subject to regulation under chapters 11-260 through 11-270), unless all the following conditions are met:

(i) The waste military munitions are not chemical agents or chemical munitions;

(ii) The waste military munitions must be transported in accordance with the U.S. Department of Defense shipping controls applicable to the transport of military munitions;

(iii) The waste military munitions must be transported from a military owned or operated installation to a military owned or operated treatment, storage, or disposal facility; and

(iv) The transporter of the waste must provide oral notice to the director within 24 hours from the time the transporter becomes aware of any loss or theft of the waste military munitions, or any failure to meet a condition of paragraph (a)(1) that may endanger health or the environment. In addition, a written submission describing the circumstances shall be provided within 5 days from the time the transporter becomes aware of any loss or theft of the waste military munitions or any failure to meet a condition of paragraph (a)(1).

(2) If any waste military munitions shipped under paragraph (a)(1) are not received by the receiving facility within 45 days of the day the waste was shipped, the owner or operator of the receiving facility must report this non-receipt to the director within 5 days.

(3) The exemption in paragraph (a)(1) from regulation as

hazardous waste shall apply only to the transportation of non-chemical waste military munitions. It does not affect the regulatory status of waste military munitions as hazardous wastes with regard to storage, treatment or disposal.

(4) The conditional exemption in paragraph (a)(1) applies only so long as all of the conditions in paragraph (a)(1) are met.

(b) Reinstatement of exemption. If any waste military munition loses its exemption under paragraph (a)(1), an application may be filed with the director for reinstatement of the exemption from hazardous waste transportation regulation with respect to such munition as soon as the munition is returned to compliance with the conditions of paragraph (a)(1). If the director finds that reinstatement of the exemption is appropriate based on factors such as the transporter's provision of a satisfactory explanation of the circumstances of the violation, or a demonstration that the violations are not likely to recur, the director may reinstate the exemption under paragraph (a)(1). If the director does not take action on the reinstatement application within 60 days after receipt of the application, then reinstatement shall be deemed granted, retroactive to the date of the application. However, the director may terminate a conditional exemption reinstated by default in the preceding sentence if the director finds that reinstatement is inappropriate based on factors such as the transporter's failure to provide a satisfactory explanation of the circumstances of the violation, or failure to demonstrate that the violations are not likely to recur. In reinstating the exemption under paragraph (a)(1), the director may specify additional conditions as are necessary to ensure and document proper transportation to protect human health and the environment.

(c) Amendments to DOD shipping controls. The U.S. Department of Defense shipping controls applicable to the transport of military munitions referenced in subparagraph (a)(1)(ii) are Government Bill of Lading (GBL) (GSA Standard Form 1109), requisition tracking form DD Form 1348, the Signature and Talley Record (DD Form 1907), Special Instructions for Motor Vehicle Drivers (DD Form 836), and the Motor Vehicle Inspection Report (DD Form 626) in effect on November 8, 1995, except as provided in the following sentence. Any amendments to the U.S. Department of Defense shipping controls shall become effective for purposes of paragraph (a)(1) on the date the U.S. Department of Defense publishes notice in the Federal Register that the shipping controls referenced in subparagraph (a)(1)(ii) have been amended. [Eff 3/13/99; comp SEP 20 1999] (Auth: HRS §§342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.203)

§11-266-204 <u>Standards applicable to emergency responses.</u>

Explosives and munitions emergencies involving military munitions or explosives are subject to sections 11-262-10(i), 11-263-10(e), 11-264-1(g)(8), 11-265-1(c)(11), and 11-270-1(c)(3), or alternatively to section 11-270-61. [Eff 3/13/99; comp SEP 20 1999] (Auth: HRS §§342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.204)

§11-266-205 Standards applicable to the storage of solid waste military munitions. (a) Criteria for hazardous waste regulation of waste non-chemical military munitions in storage.

(1) Waste military munitions in storage that exhibit a hazardous waste characteristic or are listed as hazardous waste under chapter 11-261, are listed or identified as a hazardous waste (and thus are subject to regulation under chapters 11-260 through 11-279), unless all the following conditions are met:

(i) The waste military munitions are not chemical agents or chemical munitions.

(ii) The waste military munitions must be subject to the jurisdiction of the U.S. Department of Defense Explosives Safety Board (DDESB).

(iii) The waste military munitions must be stored in accordance with the DDESB storage standards applicable to waste military munitions.

(iv) Within 90 days of when a storage unit is first used to store waste military munitions, the owner or operator must notify the director of the location of any waste storage unit used to store waste military munitions for which the conditional exemption in paragraph (a)(1) is claimed.

(v) The owner or operator must provide oral notice to the director within 24 hours from the time the owner or operator becomes aware of any loss or theft of the waste military munitions, or any failure to meet a condition of paragraph (a)(1) that may endanger health or the environment. In addition, a written submission describing the circumstances shall be provided within 5 days from the time the owner or operator becomes aware of any loss or theft of the waste military munitions or any failure to meet a condition of paragraph (a)(1).

(vi) The owner or operator must inventory the waste military munitions at least annually, must inspect the waste military munitions at least quarterly for compliance with the conditions of paragraph (a)(1), and must maintain records of the findings of these inventories and inspections for at least

three years.

(vii) Access to the stored waste military munitions must be limited to appropriately trained and authorized personnel.

(2) The conditional exemption in paragraph (a)(1) from regulation as hazardous waste shall apply only to the storage of non-chemical waste military munitions. It does not affect the regulatory status of waste military munitions as hazardous wastes with regard to transportation, treatment or disposal.

(3) The conditional exemption in paragraph (a)(1) applies only so long as all of the conditions in paragraph (a)(1) are met.

(b) Notice of termination of waste storage. The owner or operator must notify the director when a storage unit identified in subparagraph (a)(1)(iv) will no longer be used to store waste military munitions.

(c) Reinstatement of conditional exemption. If any waste military munition loses its conditional exemption under paragraph (a)(1), an application may be filed with the director for reinstatement of the conditional exemption from hazardous waste storage regulation with respect to such munition as soon as the munition is returned to compliance with the conditions of paragraph (a)(1). If the director finds that reinstatement of the conditional exemption is appropriate based on factors such as the owner's or operator's provision of a satisfactory explanation of the circumstances of the violation, or a demonstration that the violations are not likely to recur, the director may reinstate the conditional exemption under paragraph (a)(1). If the director does not take action on the reinstatement application within 60 days after receipt of the application, then reinstatement shall be deemed granted, retroactive to the date of the application. However, the director may terminate a conditional exemption reinstated by default in the preceding sentence if he/she finds that reinstatement is inappropriate based on factors such as the owner's or operator's failure to provide a satisfactory explanation of the circumstances of the violation, or failure to demonstrate that the violations are not likely to recur. In reinstating the conditional exemption under paragraph (a)(1), the director may specify additional conditions as are necessary to ensure and document proper storage to protect human health and the environment.

(d) Waste chemical munitions. (1) Waste military munitions that are chemical agents or chemical munitions and that exhibit a hazardous waste characteristic or are listed as hazardous waste under chapter 11-261, are listed or identified as a hazardous waste and shall be subject to the applicable regulatory requirements of chapter 342J, HRS.

(2) Waste military munitions that are chemical agents or chemical munitions and that exhibit a hazardous waste

characteristic or are listed as hazardous waste under chapter 11-261, are not subject to the storage prohibition in section 11-268-50.

(e) Amendments to DDESB storage standards. The DDESB storage standards applicable to waste military munitions, referenced in subparagraph (a)(1)(iii), are DOD 6055.9-STD ("DOD Ammunition and Explosive Safety Standards"), in effect on November 8, 1995, except as provided in the following sentence. Any amendments to the DDESB storage standards shall become effective for purposes of paragraph (a)(1) on the date the U.S. Department of Defense publishes notice in the Federal Register that the DDESB standards referenced in paragraph (a)(1) have been amended. [Eff 3/13/99; comp SEP 20 1999 (Auth: HRS §§342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.205)

§11-266-206 Standards applicable to the treatment and disposal of waste military munitions. The treatment and disposal of hazardous waste military munitions are subject to the applicable permitting, procedural, and technical standards in chapters 11-260 through 11-270. [Eff 3/13/99; comp SEP 20 1999] (Auth: HRS §§342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §266.206)

SUBCHAPTER N

APPENDICES

§11-266-300 Appendices. Appendices I through XII to 40 CFR Part 266, revised as of May 25, 1998, are made a part of this chapter. These Appendices are entitled:

Appendix I - Tier I and Tier II Feed Rate and Emissions Screening Limits for Metals
Appendix II - Tier I Feed Rate Screening Limits For Total Chlorine
Appendix III - Tier II Emission Rate Screening Limits for Free Chlorine and Hydrogen Chloride
Appendix IV - Reference Air Concentrations
Appendix V - Risk Specific Doses (10^{-5})
Appendix VI - Stack Plume Rise
Appendix VII - Health-Based Limits for Exclusion of Waste-Derived Residues
Appendix VIII - Potential PICs for Determination of Exclusion of Waste-Derived Residues
Appendix IX - Methods Manual for Compliance With the BIF Regulations
Appendix X - [Reserved]
Appendix XI - Lead-Bearing Materials that May Be Processed in

Exempt Lead Smelters

Appendix XII - Nickel or Chromium-Bearing Materials that May Be Processed in Exempt Nickel-Chromium Recovery Furnaces

Appendix XIII - Mercury Bearing Wastes May Be Processed in Exempt Mercury Recovery Units

[Eff 3/13/99; comp SEP 20 1999] (Auth: HRS §§342J-4, 342J-31, 342J-35) (Imp: None)

DEPARTMENT OF HEALTH

The compilation of chapter 11-266, Hawaii Administrative Rules, on the Summary page dated SEP 2 1999, was adopted on SEP 2 1999. No public notice was provided and no public hearing was conducted.

This compilation shall take effect ten days after filing with the Office of the Lieutenant Governor.

BRUCE S. ANDERSON, Ph.D., M.P.H.
Director of Health

APPROVED AS TO FORM:

Adina L.K. Cunningham
Deputy Attorney General

BENJAMIN J. CAYETANO
Governor
State of Hawaii

Date: 9/8/99

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Filed

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