

Michigan Department of Environmental Quality

Waste Characterization

Reference Book

**Resources for characterizing hazardous waste
and liquid industrial waste**



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Waste Regulations

PART 111 Rules of Act 451

R 299.9202 "Waste" explained.

(1) A waste is any discarded material that is not excluded by R 299.9204 or that is not excluded by a variance granted under R 299.9202(6) and (7). A discarded material is any material that is any of the following:

- (a) A material that is abandoned by being disposed of; burned or incinerated; or accumulated, stored, or treated before or instead of being abandoned by being disposed of, burned, or incinerated.
- (b) A material which is recycled, or accumulated, stored, or treated before recycling, and which meets 1 of the following criteria:
 - (i) It is a material listed in subrule (2) of this rule and is used in a manner constituting disposal by being either of the following:
 - (A) Applied to or placed on the land in a manner that constitutes disposal.
 - (B) Used to produce products that are applied to or are placed on the land or are otherwise contained in products that are applied to or placed on the land, in which cases the product itself remains a waste. A commercial chemical product listed in R 299.9214 is not a waste if it is applied to the land and that is its ordinary manner of use.
 - (ii) It is a material listed in subrule (2) of this rule and it is burned to recover energy, is used to produce a fuel, or is otherwise contained in fuels, in which cases the fuel itself remains a waste. A commercial chemical product listed in R 299.9214 is not a waste if it is itself a fuel.
 - (iii) It is a material listed in subrule (2)(a), (b), or (c) of this rule and it undergoes reclamation, except as provided for in R 299.9204(1)(v).
 - (iv) It is a material listed in subrule (2)(a), (b), (c), or (d) of this rule and it undergoes speculative accumulation.
 - (v) It is an inherently waste-like material, having a hazardous waste number of F020, F021, F022, F023, F026, or F028, or is another waste determined by the administrator based on both of the following criteria:
 - (A) The materials are ordinarily disposed of, burned, or incinerated or the materials contain toxic constituents which are listed in 40 C.F.R. part 261, appendix VIII, and which are not ordinarily found in raw materials or products for which the materials substitute or are found in raw materials or products in smaller concentrations, and which are not used or reused during the recycling process.
 - (B) The material might pose a substantial hazard to human health and the environment when recycled.
 - (vi) It is an inherently waste-like material which is a secondary material, which is fed to a halogen acid furnace, and which exhibits a characteristic of a hazardous waste or is listed as a hazardous waste pursuant to part 2 of these rules, except for brominated material that meets all of the following criteria:
 - (A) The material contains a bromine concentration of not less than 45%.
 - (B) The material contains less than a total of 1% of the toxic organic compounds listed in 40 C.F.R. part 261, appendix VIII.
 - (C) The material is processed continually on-site in the halogen acid furnace by direct conveyance such as hard piping.
- (c) It is a military munition identified as a waste under R 299.9817.

(2) Any of the following materials may be wastes under subrule (1) of this rule:

- (a) Spent materials.
- (b) Sludges and by-products listed in R 299.9220 to R 299.9222.
- (c) Scrap metal that is not excluded under R 299.9204.
- (d) Sludges and by-products that exhibit a characteristic of hazardous waste.
- (e) Commercial chemical products listed in R 299.9214.

(3) Except as provided in subrule (4) of these rules, materials are not wastes if they can be shown to be recycled by any of the following means:

- (a) By being used or reused as ingredients in an industrial process to make a product if the materials are not being reclaimed.
- (b) By being used or reused as effective substitutes for commercial products.
- (c) By being returned to the original process from which they are generated without first being reclaimed or placed on the land. The material must be returned as a substitute for feedstock materials. If the original process to which the material is returned is a secondary process, then the materials must be managed so that they are not placed on the land.

In cases where the materials are generated and reclaimed within the primary mineral processing industry, the conditions of the exclusion under R 299.9204(1)(v) apply rather than this subrule.

(4) All of the following materials are wastes, even if the recycling involves use, reuse, or return to the original process described in subrule (3) of this rule:

- (a) Materials used in a manner constituting disposal or used to produce products that are applied to the land.
- (b) Materials burned for energy recovery, used to produce a fuel, or contained in fuels.

- (c) Materials accumulated speculatively.
- (d) Inherently waste-like materials listed in subrule (1)(b)(v) and (vi) of this rule.
- (5) Respondents in actions to enforce regulations implementing part 111 of the act who raise a claim that a certain material is not waste or is conditionally exempt from regulation shall demonstrate that there is a known market or disposition for the material and that the respondent meets the terms of exclusion or exemption. In doing so, the respondent shall provide appropriate documentation, such as contracts showing that a second person uses the material as an ingredient in a production process, to demonstrate that the material is not a waste or is exempt from regulation. In addition, owners or operators of facilities claiming that they actually are recycling materials shall show that they have the necessary equipment for recycling the materials.
- (6) The director may determine, on a case-by-case basis, that the following recycled materials are not wastes:
 - (a) Materials that are accumulated speculatively without sufficient amounts being recycled, as defined in R 299.9107.
 - (b) Materials that are reclaimed and then reused within the original production process in which they were generated.
 - (c) Materials that have been reclaimed, but must be reclaimed further before the materials are completely recovered.
- (7) The director shall use the criteria and procedures outlined in 40 C.F.R. §§260.31 and 260.33 for making determinations under subrule (6) of this rule.
- (8) The provisions of 40 C.F.R. §§260.31, 260.33, 261.31, 261.32, and 261.33 are adopted by reference in R 299.11003, with the exception that "director" shall replace "regional administrator."

R 299.9203 "Hazardous waste" explained.

- (1) A waste, as explained in R 299.9202, is a hazardous waste if it is not excluded from regulation pursuant to R 299.9204(1) or (2) and if it meets any of the following criteria:
 - (a) It exhibits any of the characteristics of hazardous waste identified in R 299.9212.
 - (b) It is listed in R 299.9213 or R 299.9214 and has not been excluded from the lists pursuant to R 299.9211.
 - (c) It is a mixture of a waste and 1 or more hazardous wastes that are listed in R 299.9213 or R 299.9214 and has not been excluded from this subdivision pursuant to R 299.9211 or subrule (7) or (8) of this rule; however, mixtures of wastes and hazardous wastes that are listed in R 299.9213 and R 299.9214 are not hazardous wastes, except by application of subdivision (a) or (b) of this subrule, if the generator can demonstrate that the mixture consists of wastewater which, with respect to discharge, is subject to regulation pursuant to either section 402 or section 307(b) of the federal clean water act, including wastewater at facilities that have eliminated the discharge of wastewater, and is 1 of the following:
 - (i) One or more of the following spent solvents that are listed in R 299.9213, if the maximum total weekly usage of the solvents, other than the amounts that can be demonstrated not to be discharged to wastewater, divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system is not more than 1 part per million or the total measured concentration of these solvents entering the headworks of the facility's wastewater treatment system, at facilities subject to regulation under parts 60, 61, or 63 of the federal clean air act or at facilities subject to an enforceable limit in a federal operating permit that minimizes fugitive emissions, is not more than 1 part per million on an average weekly basis:
 - (A) Carbon tetrachloride.
 - (B) Tetrachloroethylene.
 - (C) Trichloroethylene.
 - (D) Benzene.
 - (E) Scrubber waters derived from the combustion of the spent solvents listed in subparagraphs (A) to (D) of this paragraph.

Any facility that uses benzene as a solvent and claims this exemption shall use an aerated biological wastewater treatment system and only lined surface impoundments or tanks before secondary clarification in the wastewater treatment system. Facilities that choose to measure concentration levels shall file a copy of their sampling and analysis plan with the director. A facility shall file a revised sampling and analysis plan if the initial plan is rendered inaccurate by changes in the facility's operations. The sampling and analysis plan shall include the monitoring point location at the headworks, the sampling frequency and methodology, and a list of constituents to be monitored. A facility shall be eligible for the direct monitoring option once it receives confirmation that the sampling and analysis plan has been received by the director. The director may reject the sampling and analysis plan if he or she finds that the sampling and analysis plan does not include the required information or the plan parameters do not enable the facility to calculate the weekly average concentration of these chemicals accurately. If the director rejects the sampling and analysis plan or finds that the facility is not following the sampling and analysis plan, he or she shall notify the facility that it must cease the use of the direct monitoring option until the bases for the rejection are corrected.

(ii) One or more of the following spent solvents that are listed in R 299.9213, if the maximum total weekly usage of the solvents, other than the amounts that can be demonstrated not to be discharged to wastewater, divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system is not more than 25 parts per million or the total measured concentration of these solvents entering the headworks of the facility's wastewater treatment system, at facilities subject to regulation under parts 60, 61, or 63 of the federal clean air act or at facilities subject to an enforceable limit in a federal operating permit that minimizes fugitive emissions, is not more than 25 parts per million on an average weekly basis:

- (A) Methylene chloride.
- (B) 1,1,1-Trichloroethane.
- (C) Chlorobenzene.
- (D) o-dichlorobenzene.
- (E) Cresols.
- (F) Cresylic acid.
- (G) Nitrobenzene.
- (H) Toluene.
- (I) Methyl ethyl ketone.
- (J) Carbon disulfide.
- (K) Isobutanol.
- (L) Pyridine.
- (M) Spent chlorofluorocarbon solvents.
- (N) 2-ethoxyethanol.

(O) Scrubber waters derived from the combustion of the spent solvents listed in subparagraphs (A) to (N) of this paragraph. Facilities that choose to measure concentration levels shall file a copy of their sampling and analysis plan with the director. A facility shall file a revised sampling and analysis plan if the initial plan is rendered inaccurate by changes in the facility's operations. The sampling and analysis plan shall include the monitoring point location at the headworks, the sampling frequency and methodology, and a list of constituents to be monitored. A facility shall be eligible for the direct monitoring option once they receive confirmation that the sampling and analysis plan has been received by the director. The director may reject the sampling and analysis plan if he or she finds that the sampling and analysis plan does not include the required information or the plan parameters do not enable the facility to calculate the weekly average concentration of these chemicals accurately. If the director rejects the sampling and analysis plan or finds that the facility is not following the sampling and analysis plan, he or she shall notify the facility that it must cease the use of the direct monitoring option until the bases for the rejection are corrected.

(iii) One or more of the following wastes that are listed in R 299.9213 if the wastes are discharged to the refinery oil recovery sewer before primary oil/water/solids separation.

- (A) Heat exchanger bundle cleaning sludge from the petroleum refining industry, K050.
- (B) Crude oil storage tank sediment from petroleum refining operations, K169.
- (C) Clarified slurry oil tank sediment or in-line filter/separation solids from petroleum refining operations, K170.
- (D) Spent hydrotreating catalyst, K171.
- (E) Spent hydrorefining catalyst, K172.

(iv) A discarded hazardous waste, commercial chemical product, or chemical intermediate listed in R 299.9213 or R 299.9214, arising from de minimis losses of the materials from manufacturing operations in which the materials are used as raw materials or are produced in the manufacturing process. For the purpose of this paragraph, de minimis losses are inadvertent releases to a wastewater treatment system, including any of the following:

- (A) Losses from normal material handling operations, such as spills from the unloading or transfer of materials from bins or other containers or leaks from pipes, valves, or other devices that are used to transfer materials.
- (B) Minor leaks of process equipment, storage tanks, or containers.
- (C) Leaks from well-maintained pump packings and seals.
- (D) Sample purgings.
- (E) Relief device discharges.
- (F) Discharges from safety showers and the rinsing and cleaning of personal safety equipment.
- (G) Rinsate from empty containers or from containers that are rendered empty by that rinsing. Any manufacturing facility that claims an exemption for de minimis quantities of wastes listed in R 299.9214, or any nonmanufacturing facility that claims an exemption for de minimis quantities of wastes listed in R 299.9213 or R 299.9214 shall either have eliminated the discharge of wastewaters or have included in its federal clean water act permit application or submission to its pretreatment control authority the constituents for which each waste was listed in accordance with 40 C.F.R. part 261, appendix VII, and the constituents identified in 40 C.F.R. §268.40 for which each waste has a treatment standard. A facility shall be eligible to claim the exemption once notification of the possible de minimis releases have been provided via the clean water act permit application or the pretreatment control authority submission. A copy of the federal clean

water act permit application or the submission to the pretreatment control authority shall be placed in the facility's on-site files.

(v) Wastewater which results from laboratory operations and which contains toxic (T) wastes listed in R 299.9213 or R 299.9214 if the annualized average flow of laboratory wastewater is not more than 1% of total wastewater flow into the headworks of the facility's wastewater treatment or pretreatment system or if the wastes' combined annualized average concentration is not more than 1 part per million in the headworks of the facility's wastewater treatment or pretreatment facility. Toxic (T) wastes which are used in laboratories and which are demonstrated not to be discharged to wastewater shall not be included in the calculation.

(vi) Wastewater from the production of carbamates and carbamoyl oximes, K157, if the maximum weekly usage of formaldehyde, methyl chloride, methylene chloride, and triethylamine, including all amounts that cannot be demonstrated to be reacted in the process, destroyed through treatment, or recovered, divided by the average weekly flow of process wastewater before any dilutions into the headworks of the facility's wastewater treatment system is not more than a total of 5 parts per million by weight or the total measured concentration of these chemicals entering the headworks of the facility's wastewater treatment system is not more than 5 parts per million on an average weekly basis. Facilities that choose to measure concentration levels shall file a copy of their sampling and analysis plan with the director. A facility shall file a revised sampling and analysis plan if the initial plan is rendered inaccurate by changes in the facility's operations. The sampling and analysis plan shall include the monitoring point location at the headworks, the sampling frequency and methodology, and a list of constituents to be monitored. A facility shall be eligible for the direct monitoring option once it receives confirmation that the sampling and analysis plan has been received by the director. The director may reject the sampling and analysis plan if he or she finds that the sampling and analysis plan does not include the required information or the plan parameters do not enable the facility to calculate the weekly average concentration of these chemicals accurately. If the director rejects the sampling and analysis plan or finds that the facility is not following the sampling and analysis plan, he or she shall notify the facility that it must cease the use of the direct monitoring option until the bases for the rejection are corrected.

(vii) Wastewater derived from the treatment of organic waste from the production of carbamates and carbamoyl oximes, K156, if the maximum concentration of formaldehyde, methyl chloride, methylene chloride, and triethylamine before any dilutions into the headworks of the facility's wastewater treatment system is not more than a total of 5 milligrams per liter or the total measured concentration of these chemicals entering the headworks of the facility's wastewater treatment system is not more than 5 milligrams per liter on an average weekly basis. Facilities that choose to measure concentration levels shall file a copy of their sampling and analysis plan with the director. A facility shall file a revised sampling and analysis plan if the initial plan is rendered inaccurate by changes in the facility's operations. The sampling and analysis plan shall include the monitoring point location at the headworks, the sampling frequency and methodology, and a list of constituents to be monitored. A facility shall be eligible for the direct monitoring option once it receives confirmation that the sampling and analysis plan has been received by the director. The director may reject the sampling and analysis plan if he or she finds that the sampling and analysis plan does not include the required information or the plan parameters do not enable the facility to calculate the weekly average concentration of these chemicals accurately. If the director rejects the sampling and analysis plan or finds that the facility is not following the sampling and analysis plan, he or she shall notify the facility that it must cease the use of the direct monitoring option until the bases for the rejection are corrected.

(d) It is a mixture of a waste and a hazardous waste that meets the characteristic of severe toxicity pursuant to R 299.9212(5).

(e) It is a used oil that contains more than 1,000 parts per million total halogens. Used oil that contains more than 1,000 parts per million is presumed to be a hazardous waste and is regulated as such under part 111 of the act and these rules. A person may rebut the presumption by demonstrating that the used oil does not contain hazardous waste. The demonstration may be made by showing that the used oil does not contain significant concentrations of halogenated hazardous constituents that are listed in 40 C.F.R. part 261, appendix VIII. The rebuttable presumption rule does not apply to the following materials:

(i) Metalworking oils or fluids that contain chlorinated paraffins if the oils or fluids are processed through a tolling agreement as specified in 40 C.F.R. §279.24(c) to reclaim the oils or fluids. The rebuttable presumption does apply, however, if the oils or fluids are recycled in any other manner or are disposed of.

(ii) Used oils that are contaminated with chlorofluorocarbons which have been removed from refrigeration units if the chlorofluorocarbons are destined for reclamation. The rebuttable presumption does apply, however, if the used oils are contaminated with chlorofluorocarbons that have been mixed with used oil from sources other than refrigeration units.

(2) A waste that is not excluded from regulation pursuant to R 299.9204(1) or (2) becomes a hazardous waste when any of the following events occur:

(a) In the case of a waste that is listed in R 299.9213 or R 299.9214, when the waste first meets the listing description.

(b) In the case of a mixture of waste and one or more listed hazardous wastes or severely toxic wastes, when a waste that is hazardous pursuant to R 299.9212(5), R 299.9213, or R 299.9214 is first added to the waste.

(c) In the case of any other waste, including a waste mixture, when the waste exhibits any of the characteristics identified in R 299.9212.

(3) Unless and until it meets the criteria of subrule (5) of this rule, a hazardous waste will remain a hazardous waste, and, except as provided in subrules (4), (7), and (8) of this rule, any waste generated from the treatment, storage, or disposal of a hazardous waste, including any sludge, spill residue, ash, emission control dust, or leachate, but not including precipitation runoff, is a hazardous waste. Materials that are reclaimed from wastes and that are used beneficially are not wastes and hence are not hazardous wastes pursuant to this subrule, unless the reclaimed material is burned for energy recovery or used in a manner that constitutes disposal.

(4) All of the following wastes are not hazardous even though they are generated from the treatment, storage, or disposal of a hazardous waste, unless they exhibit 1 or more of the characteristics of hazardous waste:

(a) Waste pickle liquor sludge generated by lime stabilization of spent pickle liquor from the iron and steel industry, as defined by standard industrial codes 331 and 332 in the office of management and budget document entitled "Standard Industrial Classification Manual."

(b) Wastes from burning any of the materials exempted from regulation by R 299.9206(3)(c) to (f).

(c) Nonwastewater residues, such as slag, which result from high temperature metals recovery processing of K061, K062, or F006 waste in units identified as rotary kilns, flame reactors, electric furnaces, plasma arc furnaces, slag reactors, rotary hearth furnace/electric furnace combinations, or industrial furnaces and which are disposed of in units regulated under part 115 of the act, if the residues are in compliance with the specified generic exclusion levels. Testing requirements shall be incorporated in a facility's waste analysis plan or generator's self-implementing waste analysis plan. At a minimum, samples of residues shall be collected and analyzed quarterly or when the process or operation generating the waste changes. A person who claims this exclusion in an enforcement action shall have the burden of proving, by clear and convincing evidence, that the material meets all of the exclusion requirements:

(i) For K061 and K062 nonwastewater high temperature metals recovery residues, the specified generic exclusion levels are as follows:

- (A) Antimony, 0.10 mg/l.
- (B) Arsenic, 0.50 mg/l.
- (C) Barium, 7.6 mg/l.
- (D) Beryllium, 0.010 mg/l.
- (E) Cadmium, 0.050 mg/l.
- (F) Chromium (total), 0.33 mg/l.
- (G) Lead, 0.15 mg/l.
- (H) Mercury, 0.009 mg/l.
- (I) Nickel, 1.0 mg/l.
- (J) Selenium, 0.16 mg/l.
- (K) Silver, 0.30 mg/l.
- (L) Thallium, 0.020 mg/l.
- (M) Zinc, 70 mg/l.

(ii) For F006 nonwastewater high temperature metals recovery residues, the specified generic exclusion levels are as follows:

- (A) Antimony, 0.10 mg/l.
- (B) Arsenic, 0.50 mg/l.
- (C) Barium, 7.6 mg/l.
- (D) Beryllium, 0.010 mg/l.
- (E) Cadmium, 0.050 mg/l.
- (F) Chromium (total), 0.33 mg/l.
- (G) Cyanide (total), 1.8 mg/kg.
- (H) Lead, 0.15 mg/l.
- (I) Mercury, 0.009 mg/l.
- (J) Nickel, 1.0 mg/l.
- (K) Selenium, 0.16 mg/l.
- (L) Silver, 0.30 mg/l.
- (M) Thallium, 0.020 mg/l.
- (N) Zinc, 70 mg/l.

(iii) For nonwastewater residues resulting from the high temperature metals recovery processing of K061, K062, or F006 waste which meet the generic exclusion levels specified in this subdivision and which do not exhibit any hazardous waste characteristic, and which are sent to a unit regulated under part 115 of the act, the person claiming the exclusion shall send a 1-time notification and certification to the director. The notification and certification shall be in compliance with all of the following provisions:

(A) The notification and certification shall be maintained at the facility.

(B) The notification and certification shall be updated by the person claiming the exclusion if the process or operation generating the waste changes or if the unit regulated under part 115 of the act that is receiving the

waste changes. However, the director need only be notified on an annual basis, by the end of the calendar year, if a change occurs.

(C) The notification shall include all of the following information:

- (1) The name and address of the unit regulated under part 115 of the act that is receiving the waste shipment.
- (2) The site identification number and treatability group of the waste at the initial point of generation.
- (3) The treatment standards applicable to the waste at the initial point of generation.

(D) The certification shall be signed by an authorized representative and shall include the following statement:

"I certify under penalty of law that the generic exclusion levels for all constituents have been met without impermissible dilution and that no characteristic of hazardous waste is exhibited. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

- (d) Biological treatment sludge from the treatment of organic wastes from the production of carbamates and carbamoyl oximes, K156, or wastewaters from the production of carbamates and carbamoyl oximes, K157.
 - (e) Catalyst inert support media separated from either or both of the following wastes listed in R 299.9213:
 - (i) Spent hydrotreating catalyst, K171.
 - (ii) Spent hydrorefining catalyst, K172.
- (5) Any waste that is described in subrule (3) of this rule is not a hazardous waste if it is in compliance with the following criteria, as applicable:
- (a) In the case of any waste, it does not exhibit any of the characteristics of hazardous waste that are identified in R 299.9212. However, a waste that exhibits a characteristic at the point of generation may still be subject to the requirements of 40 C.F.R. part 268, even if the waste does not exhibit a characteristic at the point of land disposal.
 - (b) In the case of a waste which is listed in R 299.9212(5), R 299.9213, or R 299.9214, which contains a waste that is listed in these rules, or which is derived from a waste that is listed in these rules, the waste also has been excluded from regulation pursuant to R 299.9211.
- (6) Notwithstanding subrules (1) to (5) of this rule and if the debris, as defined in 40 C.F.R. part 268, does not exhibit a hazardous characteristic identified in R 299.9212, the following materials are not subject to regulation under part 111 of the act and these rules, except for R 299.9809 to R 299.9816:
- (a) Hazardous debris that has been treated using 1 of the required extraction or destruction technologies specified in table 1 of 40 C.F.R. §268.45. A person who claims this exclusion in an enforcement action shall have the burden of proving, by clear and convincing evidence, that the material meets all of the exclusion requirements.
 - (b) Debris that the director, considering the extent of contamination, has determined is no longer contaminated with hazardous waste.
- (7) A hazardous waste that is listed in R 299.9213 or R 299.9214 solely because it exhibits 1 or more characteristics of ignitability, corrosivity, or reactivity, as defined under R 299.9212, is not a hazardous waste, if the waste no longer exhibits any characteristic of hazardous waste identified in R 299.9212. However, the waste remains subject to 40 C.F.R. part 268, as applicable, even if the waste no longer exhibits a characteristic at the point of land disposal. This exclusion is limited to any of the following:
- (a) A mixture of a waste and a hazardous waste listed in R 299.9213 or R 299.9214 solely because it exhibits 1 or more characteristics of ignitability, corrosivity, or reactivity which is generated as a result of a cleanup conducted at the individual site of generation pursuant to part 31, part 111, part 201, part 213, or CERCLA.
 - (b) A waste generated from the treatment, storage, or disposal of a hazardous waste listed in R 299.9213 or R 299.9214 solely because it exhibits the characteristic of ignitability.
 - (c) A mixture of a waste excluded from regulation under R 299.9204(2)(h) and a hazardous waste listed in R 299.9213 or R 299.9214 solely because it exhibits 1 or more of the characteristics of ignitability, corrosivity, or reactivity which is generated as a result of a cleanup conducted at the individual site of generation pursuant to part 31, part 111, part 201, part 213, or CERCLA.
- (8) Hazardous waste that contains radioactive waste is no longer a hazardous waste when it meets the eligibility criteria and conditions of R 299.9822 and R 299.9823. This exclusion is limited to either of the following:
- (a) A mixture of a waste and an eligible radioactive mixed waste.
 - (b) A waste generated from the treatment, storage, or disposal of an eligible radioactive mixed waste.
- (9) The office of management and budget document entitled "Standard Industrial Classification Manual" is adopted by reference in R 299.11007.

R 299.9204 Exclusions.

- (1) The following materials are not wastes for the purpose of part 111 of the act and these rules:
 - (a) Domestic sewage and any mixture of domestic sewage and other wastes that passes through a sewer system to a publicly owned treatment works for treatment. Domestic sewage means untreated sanitary wastes that pass through a sewer system.
 - (b) Industrial wastewater discharges that are point source discharges subject to regulation pursuant to section 402 of the federal clean water act, as amended, except for discharges to injection wells.
 - (c) Irrigation return flows.

- (d) Source, special nuclear, or by-product material as defined by the atomic energy act of 1954, as amended, 42 U.S.C. §2011 et seq.
- (e) Materials which are subjected to in-situ mining techniques and which are not removed from the ground as part of the extraction process.
- (f) Pulping liquors that are reclaimed in a pulping liquor recovery furnace and then reused in the pulping process, unless the liquors are accumulated speculatively, as defined in R 299.9107.
- (g) Spent sulfuric acid that is used to produce virgin sulfuric acid, unless the spent acid is accumulated speculatively, as defined in R 299.9107.
- (h) Secondary materials that are reclaimed and returned to the original process or processes in which they were generated and where they are reused in the production process, if all of the following provisions apply:
- (i) Only tank storage is involved, and the entire process through completion of reclamation is closed by being entirely connected with pipes or other comparable enclosed means of conveyance.
 - (ii) The reclamation does not involve controlled flame combustion, such as occurs in boilers, industrial furnaces, or incinerators.
 - (iii) The secondary materials are not accumulated in such tanks for more than 12 months without being reclaimed.
 - (iv) The reclaimed material is not used to produce a fuel and is not used to produce products that are used in a manner that constitutes disposal.
- (i) Spent wood preserving solutions which have been reclaimed and which are reused for their original intended purpose.
- (j) Wastewaters from the wood preserving process which have been reclaimed and which are reused to treat wood.
- (k) Nonwastewater splash condenser dross residue from the treatment of K061 in high temperature metals recovery units, if the residue, if shipped, is shipped, in containers and is not land disposed before recovery.
- (l) Oil-bearing hazardous secondary materials such as sludges, by-products, and spent materials, that are generated at a petroleum refinery (SIC code 2911) and are inserted into the petroleum refining process (SIC code 2911), including distillation, catalytic cracking, fractionation, gasification, or thermal cracking units, unless the material is placed on the land, or accumulated speculatively before being so recycled. Materials inserted into thermal cracking units are excluded under this subdivision if the coke product does not exhibit a characteristic of a hazardous waste. Oil-bearing hazardous secondary materials may be inserted into the same petroleum refinery where they are generated, or sent directly to another refinery, and still be excluded under this subdivision. Except as provided for in subdivision (m) of this subrule, oil-bearing hazardous secondary materials generated elsewhere in the petroleum industry are not excluded under this subdivision. Residuals generated from processing or recycling materials excluded under this subdivision, where such materials as generated would have otherwise met a listing under R 299.9213 or R 299.9214, are designated as F037 wastes when disposed of or intended for disposal.
- (m) Recovered oil that is recycled in the same manner and with the same conditions as described in subdivision (l) of this subrule. Recovered oil is oil that has been reclaimed from secondary materials, including wastewater, generated from normal petroleum industry practices, including refining, exploration and production, bulk storage, and transportation incident thereto (SIC codes 1311, 1321, 1381, 1382, 1389, 2911, 4612, 4613, 4789, 4922, 4923, 5171, and 5172). Recovered oil does not include oil-bearing hazardous wastes listed in part 2 of these rules. However, oil recovered from oil-bearing hazardous wastes listed in part 2 of these rules may be considered recovered oil. Recovered oil also does not include used oil as defined in R 299.9109.
- (n) EPA hazardous waste numbers K060, K087, K141, K142, K143, K144, K145, K147, and K148 and any wastes from the coke by-products processes that are hazardous only because they exhibit the toxicity characteristic specified in R 299.9212 when, after generation, the materials are recycled to coke ovens or to the tar recovery process as a feedstock to produce coal tar or are mixed with coal tar before the tar's sale or refining. This exclusion is conditioned on there being no land disposal of the wastes from the point that the wastes are generated to the point that they are recycled to coke ovens or tar recovery or refining processes or are mixed with coal tar.
- (o) Materials which are reclaimed from used oil and which are used beneficially if the materials are not burned for energy recovery or used in a manner that constitutes disposal of the materials.
- (p) Excluded scrap metal that is being recycled.
- (q) Shredded circuit boards that are being recycled if both of the following requirements are met:
- (i) The shredded circuit boards are stored in containers sufficient to prevent a release to the environment before recovery.
 - (ii) The shredded circuit boards are free of mercury switches, mercury relays, and nickel cadmium batteries and lithium batteries.
- (r) Condensates derived from the overhead gases from kraft mill steam strippers that are used to comply with 40 C.F.R. §63.446(e). This exemption applies only to combustion at the mill generating the condensates.
- (s) Petrochemical recovered oil from an associated organic chemical manufacturing facility, where the oil is to be inserted into the petroleum refining process (SIC code 2911) along with normal petroleum refinery process streams, provided both the following requirements are met:

- (i) The oil is hazardous only because it exhibits the characteristic of ignitability as defined in R 299.9212 or toxicity for benzene as defined in R 299.9212 and R 299.9217.
- (ii) The oil generated by the organic chemical manufacturing facility is not placed on the land or speculatively accumulated before being recycled into the petroleum refining process.
- (t) Spent caustic solutions from petroleum refining liquid treating processes used as a feedstock to produce cresylic or naphthenic acid unless the material is placed on the land or speculatively accumulated.
- (u) Before reuse, the wood preserving wastewaters and spent wood preserving solutions described in subdivisions (i) and (j) of this subrule if all of the following requirements are met:
 - (i) The wood preserving wastewaters and spent wood preserving solutions are reused on site at water borne plants in the production process for their original intended use.
 - (ii) Before reuse, the wastewaters and spent wood preserving solutions are managed to prevent releases to either the land or groundwater or both.
 - (iii) Units used to manage wastewaters or spent wood preserving solutions before reuse can be visually or otherwise determined to prevent releases to either land or groundwater.
 - (iv) Drip pads used to manage the wastewaters or spent wood preserving solutions before reuse are in compliance with 40 C.F.R. part 265, subpart W regardless of whether the plant generates a total of less than 1,000 kilograms per month of hazardous waste.
 - (v) Before operating pursuant to this exclusion, the plant owner or operator complies with all of the following requirements otherwise the exclusion shall not apply:
 - (A) Submits a 1-time notification to the director stating that the plant intends to claim the exclusion, giving the date on which the plant intends to begin operating under the exclusion, and containing the following language: "I have read the applicable regulation establishing an exclusion for wood preserving wastewaters and spent wood preserving solutions and understand it requires me to comply at all times with the conditions set out in the regulations."
 - (B) The owner or operator maintains a copy of the 1-time notification required pursuant to subparagraph (v) of this subdivision in its on-site records until closure of the facility.
 - (C) If the plant voids the exclusion by not complying with the exclusion conditions and wishes to have its wastes excluded again, it shall apply to the director for reinstatement. The director may reinstate the exclusion upon finding that the plant has returned to compliance with all of the conditions and that violations are not likely to recur.
- (v) Spent materials, other than hazardous waste listed under R 299.9213 or R 299.9214, that are generated within the primary mineral processing industry from which minerals, acids, cyanide, water, or other values are recovered by mineral processing or by beneficiation if all of the following requirements are met:
 - (i) The spent material is legitimately recycled to recover minerals, acids, cyanide, water, or other values.
 - (ii) The spent material is not speculatively accumulated.
 - (iii) Except as provided under paragraph (iv) of this subdivision, the spent material is stored in tanks, containers, or buildings which meet the following requirements as applicable:
 - (A) If using a building, the building shall be an engineered structure with a floor, walls, and a roof all of which are made of non-earthen materials providing structural support, except smelter buildings which may have partially earthen floors provided that the spent material is stored on the non-earthen portion, have a roof which is suitable for diverting rainwater away from the foundation, and be designed, constructed, and operated to prevent significant releases of the material to the environment.
 - (B) If using a tank, the tank shall be free standing, not meet the definition of a surface impoundment, be manufactured of a material suitable for containment of its contents, be operated in a manner which controls fugitive dust if the tank contains any particulate which may be subject to wind dispersal, and be designed, constructed, and operated to prevent significant releases of the material to the environment.
 - (C) If using a container, the container shall be free standing and be manufactured of a material suitable for containment of its contents, be operated in a manner which controls fugitive dust if the container contains any particulate which may be subject to wind dispersal, and be designed, constructed, and operated to prevent significant releases of the material to the environment.
 - (iv) The spent materials are placed on pads if all of the following requirements are met:
 - (A) The solid mineral processing spent materials do not contain any free liquid.
 - (B) The pad is designed, constructed, and operated to prevent significant releases of the spent material into the environment.
 - (C) The pad provides the same degree of containment afforded by non-RCRA tanks, containers, and buildings eligible for this exclusion.
 - (D) The pad is designed of non-earthen material that is compatible with the chemical nature of the mineral processing spent material.
 - (E) The pad is capable of withstanding physical stresses associated with placement and removal.
 - (F) The pad has run-on/run-off controls.
 - (G) The pad is operated in a manner which controls fugitive dust.
 - (H) The integrity of the pad is ensured through inspections and maintenance programs.

(l) The director makes a site-specific determination that the materials may be placed on a pad rather than in tanks, containers, or buildings. In making such a determination, the director shall consider whether storage on a pad poses the potential for significant releases via groundwater, surface water, and air exposure pathways. When assessing the groundwater, surface water, and air exposure pathways, the director shall consider the volume and physical and chemical properties of the spent material, including its potential for migration off of the pad, the potential for human or environmental exposure to hazardous constituents migrating from the pad via each exposure pathway, and the possibility and extent of harm to human and environmental receptors via each exposure pathway. Before making such a determination, the director shall provide notice and the opportunity for comment to all persons potentially interested in the determination. Notice may be accomplished by placing notice of the action in major local newspapers or broadcasting notice over local radio stations.

(v) The owner or operator provides notice to the director which provides the following information and is updated when there is a change in the type of materials recycled or the location of the recycling process:

- (A) The types of materials to be recycled.
- (B) The type and location of storage units and recycling processes.
- (C) The annual quantities expected to be placed in land-based units.

(vi) For the purposes of the exclusion under R 299.9204(2)(h), mineral processing spent materials shall be the result of mineral processing and may not include any hazardous wastes listed under R 299.9213 or R 299.9214. Listed hazardous wastes and characteristic hazardous waste generated by non-mineral processing industries are not eligible for the conditional exclusion from the definition of waste.

(w) Comparable fuels or comparable syngas fuels that meet the requirements of R 299.9230.

(x) Hazardous secondary materials used to make zinc fertilizers, if the following conditions are met:

(i) Hazardous secondary materials used to make zinc micronutrient fertilizers shall not be accumulated speculatively.

(ii) Generators and intermediate handlers of zinc-bearing hazardous secondary materials that are to be incorporated into zinc fertilizers shall comply with all of the following requirements:

(A) Submit a 1-time notice to the director which contains the name, address, and site identification number of the generator or intermediate handler facility, provides a brief description of the secondary material that will be subject to the exclusion, and identifies when the manufacturer intends to begin managing excluded, zinc-bearing hazardous secondary materials under the conditions of this subdivision.

(B) Store the excluded secondary material in buildings, tanks, or containers that are constructed and maintained in a way that prevents releases of the secondary materials into the environment. At a minimum, any building used for this purpose shall be an engineered structure made of non-earthen materials that provide structural support, and shall have a floor, walls, and a roof that prevent wind dispersal and contact with rainwater. Tanks used for this purpose shall be structurally sound and, if outdoors, shall have roofs or covers that prevent contact with wind and rain. Containers that are used for this purpose shall be kept closed except when it is necessary to add or remove material, and shall be in sound condition. Containers that are stored outdoors shall be managed within storage areas that have containment structures or systems sufficiently impervious to contain leaks, spills, and accumulated precipitation; provide for effective drainage and removal of leaks, spills, and accumulated precipitation; and prevent run-on into the containment system.

(C) With each off-site shipment of excluded hazardous secondary materials, provide written notice to the receiving facility that the material is subject to the conditions of this subdivision.

(D) Maintain at the generator's or intermediate handler's facility for no less than 3 years records of all shipments of excluded hazardous secondary materials. At a minimum, the records for each shipment shall include the name of the transporter, the date of the shipment, the name and address of the facility that received the excluded material, documentation confirming receipt of the shipment, and the type and quantity of excluded secondary material in each shipment.

(iii) Manufacturers of zinc fertilizers or zinc fertilizer ingredients made from excluded hazardous secondary materials shall comply with all of the following requirements:

(A) Store excluded hazardous secondary material pursuant to the storage requirements for generators and intermediate handlers, as specified in paragraph (ii) of this subdivision.

(B) Submit a 1-time notification to the director which contains the name, address, and site identification number of the manufacturing facility and identifies when the manufacturer intends to begin managing excluded, zinc-bearing hazardous secondary materials under the conditions of this subdivision.

(C) Maintain for no less than 3 years records of all shipments of excluded hazardous secondary materials received by the manufacturer. At a minimum, the records for each shipment shall include the name and address of the generating facility, the name of the transporter, the date the materials were received, the quantity of materials received, and a brief description of the industrial process that generated the material.

(D) Submit to the director an annual report which identifies the total quantities of all excluded hazardous secondary materials that were used to manufacture zinc fertilizers or zinc fertilizer ingredients in the previous year, the name and address of each generating facility, and the industrial process from which they were generated.

(iv) Nothing in this subdivision preempts, overrides, or otherwise negates the requirements of R 299.9302 which requires any person who generates a waste to determine if the waste is a hazardous waste.

(v) Interim status and licensed storage units that have been used to store only zinc-bearing hazardous wastes before the submission of the 1-time notice described in paragraph (ii) of this subdivision, and that afterward will be used only to store hazardous secondary materials excluded under this subdivision, are not subject to the closure requirements of part 6 of these rules.

(y) Zinc fertilizers made from hazardous wastes, or hazardous secondary materials that are excluded under subdivision (x) of this subrule, provided that the following conditions are met:

(i) The fertilizers meet the following contaminant limits, established as the maximum allowable total concentration in fertilizer per 1% of zinc, for metal contaminants:

- (A) Arsenic, 0.3 parts per million.
- (B) Cadmium, 1.4 parts per million.
- (C) Chromium, 0.6 parts per million.
- (D) Lead, 2.8 parts per million.
- (E) Mercury, 0.3 parts per million.

(ii) The fertilizers meet the contaminant limit for dioxin contaminants of not more than 8 parts per trillion of dioxin, measured as toxic equivalent.

(iii) The manufacturer performs sampling and analysis of the fertilizer product to determine compliance with the contaminant limits for metals not less than every 6 months, and for dioxins not less than every 12 months.

Testing shall also be performed whenever changes occur to manufacturing processes or ingredients that could significantly affect the amounts of contaminants in the fertilizer product. The manufacturer may use any reliable analytical methods to demonstrate that no constituent of concern is present in the product at concentrations above the applicable limits. The manufacturer shall ensure that the sampling and analysis are unbiased, precise, and representative of the products introduced into commerce.

(iv) The manufacturer maintains for not less than 3 years records of all sampling and analysis performed for the purposes of determining compliance with the requirements of paragraph (iii) of this subdivision. At a minimum, such records shall include all of the following:

- (A) The dates and times product samples were taken, and the dates the samples were analyzed.
- (B) The names and qualifications of the persons taking the samples.
- (C) A description of the methods and equipment used to take the samples.
- (D) The name and address of the laboratory facility at which analyses of the samples were performed.
- (E) A description of the analytical methods used, including any cleanup and sample preparation methods.
- (F) All laboratory analytical results used to determine compliance with the contaminant limits specified in paragraphs (i) and (ii) of this subdivision.

(z) Used CRTs that meet any of the following requirements:

- (i) Used, intact CRTs unless they are disposed or are speculatively accumulated by CRT collectors or glass processors.
- (ii) Used, intact CRTs when exported for recycling if they meet the requirements of R 299.9231(5).
- (iii) Used, broken CRTs if they meet the requirements of R 299.9231(1) and (2).
- (iv) Glass removed from CRTs if it meets the requirements of R 299.9231(3).

(2) The following wastes are not hazardous wastes for the purposes of part 111 of the act and these rules:

(a) Household waste, including household waste that has been collected, transported, stored, treated, disposed of, recovered, or reused. Household waste means any waste material, including garbage, trash, and sanitary wastes in septic tanks, that is derived from households, including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas. A resource recovery facility that manages municipal waste shall not be deemed to be treating, storing, disposing of, or otherwise managing hazardous wastes for the purposes of regulation pursuant to these rules if the facility is in compliance with both of the following provisions:

- (i) Receives and burns only household waste from single and multiple dwellings, hotels, motels, and other residential sources and waste from commercial or industrial sources that does not contain hazardous waste.
- (ii) Does not accept hazardous wastes and the owner or operator of the facility has established contractual requirements or other appropriate notification or inspection procedures to assure that hazardous wastes are not received at or burned in the facility.

(b) Wastes which are generated by either of the following and which are returned to the soil as fertilizers:

- (i) The growing and harvesting of agricultural crops.
- (ii) The raising of animals, including animal manures.

(c) Mining overburden that is returned to the mine site.

(d) Fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste that is generated primarily from the combustion of coal or other fossil fuels, except as provided by 40 C.F.R. §266.112 for facilities that burn or process hazardous waste.

- (e) Drilling fluids, produced waters, and other wastes that are associated with the exploration, development, or production of crude oil, natural gas, or geothermal energy.
- (f) Wastes which fail the test for the toxicity characteristic because chromium is present or wastes that are listed in R 299.9213 or R 299.9214 due to the presence of chromium, which do not fail the test for the toxicity characteristic for any other constituent or are not listed due to the presence of any other constituent, and which do not fail the test for any other characteristic, if it is shown by a waste generator or by waste generators that all of the following provisions are met:
- (i) The chromium in the waste is exclusively, or nearly exclusively, trivalent chromium.
 - (ii) The waste is generated from an industrial process that uses trivalent chromium exclusively, or nearly exclusively, and the process does not generate hexavalent chromium.
 - (iii) The waste is typically and frequently managed in nonoxidizing environments.
- (g) The following specific wastes that are in compliance with the standard in subdivision (f) of this subrule, if the wastes do not fail the test for the toxicity characteristic for any other constituent and do not fail the test for any other characteristic:
- (i) Chrome (blue) trimmings generated by any of the following subcategories of the leather tanning and finishing industry:
 - (A) Hair pulp/chrome, tan/retan/wet finish.
 - (B) Hair save/chrome, tan/retan/wet finish.
 - (C) Retan/wet finish.
 - (D) No beamhouse.
 - (E) Through-the-blue.
 - (F) Shearling.
 - (ii) Chrome (blue) shavings generated by any of the following subcategories of the leather tanning and finishing industry:
 - (A) Hair pulp/chrome, tan/retan/wet finish.
 - (B) Hair save/chrome, tan/retan/wet finish.
 - (C) Retan/wet finish.
 - (D) No beamhouse.
 - (E) hrough-the-blue.
 - (F) Shearling.
 - (iii) Buffing dust generated by any of the following subcategories of the leather tanning and finishing industry:
 - (A) Hair pulp/chrome, tan/retan/wet finish.
 - (B) Hair save/chrome, tan/retan/wet finish.
 - (C) Retan/wet finish.
 - (D) No beamhouse.
 - (E) Through-the-blue.
 - (iv) Sewer screenings generated by any of the following subcategories of the leather tanning and finishing industry:
 - (A) Hair pulp/chrome, tan/retan/wet finish.
 - (B) Hair save/chrome, tan/retan/wet finish.
 - (C) Retan/wet finish.
 - (D) No beamhouse.
 - (E) Through-the-blue.
 - (F) Shearling.
 - (v) Wastewater treatment sludges generated by any of the following subcategories of the leather tanning and finishing industry:
 - (A) Hair pulp/chrome, tan/retan/wet finish.
 - (B) Hair save/chrome, tan/retan wet finish.
 - (C) Retan/wet finish.
 - (D) No beamhouse.
 - (E) Through-the-blue.
 - (F) Shearling.
 - (vi) Wastewater treatment sludges generated by any of the following subcategories of the leather tanning and finishing industry:
 - (A) Hair pulp/chrome, tan/retan/wet finish.
 - (B) Hair save/chrome, tan/retan/wet finish.
 - (C) Through-the-blue.
 - (vii) Waste scrap leather from the leather tanning industry, the shoe manufacturing industry, and other leather product manufacturing industries.
 - (viii) Wastewater treatment sludges from the production of TiO₂ pigment using chromium-bearing ores by the chloride process.
 - (ix) Ink generated by United States postal service in its automated facer canceled systems.

(h) Waste from the extraction, beneficiation, and processing of ores and minerals, including coal, phosphate rock, and overburden from the mining of uranium ore, except as provided in 40 C.F.R. §266.112 for facilities that burn or process hazardous waste. For purposes of this subdivision, the following provisions apply:

(i) Beneficiation of ores and minerals is restricted to the following activities: crushing; grinding; washing; dissolution; crystallization; filtration; sorting; sizing; drying; sintering; pelletizing; briquetting; calcining to remove water or carbon dioxide, or both; roasting, autoclaving, or chlorination, or any combination thereof, in preparation for leaching, except where the roasting/leaching or autoclaving/leaching or chlorination/leaching sequence produces a final or intermediate product that does not undergo further beneficiation or processing; gravity concentration; magnetic separation; electrostatic separation; flotation; ion exchange; solvent extraction; electrowinning; precipitation; amalgamation; and heap, dump, vat, tank, and in-situ leaching.

(ii) Waste from the processing of ores and minerals shall include only the following wastes as generated:

- (A) Slag from primary copper processing.
- (B) Slag from primary lead processing.
- (C) Red and brown muds from bauxite refining.
- (D) Phosphogypsum from phosphoric acid production.
- (E) Slag from elemental phosphorus production.
- (F) Gasifier ash from coal gasification.
- (G) Process wastewater from coal gasification.
- (H) Calcium sulfate wastewater treatment plant sludge from primary copper processing.
- (I) Slag tailings from primary copper processing.
- (J) Fluorogypsum from hydrofluoric acid production.
- (K) Process wastewater from hydrofluoric acid production.
- (L) Air pollution control dust/sludge from iron blast furnaces.
- (M) Iron blast furnace slag.
- (N) Treated residue from roasting/leaching of chrome ore.
- (O) Process wastewater from primary magnesium processing by the anhydrous process.
- (P) Process wastewater from phosphoric acid production.
- (Q) Basic oxygen furnace and open hearth furnace air pollution control dust/sludge from carbon steel production.
- (R) Basic oxygen furnace and open hearth furnace slag from carbon steel production.
- (S) Chloride process waste solids from titanium tetrachloride production.
- (T) Slag from primary zinc processing.

(iii) Residues derived from co-processing mineral processing secondary materials with normal beneficiation raw materials or with normal mineral processing raw materials remain excluded under subrule (2) of this rule if the owner or operator meets both of the following requirements:

- (A) Processes at least 50 percent by weight normal beneficiation raw materials or normal mineral processing raw materials.
- (B) Legitimately reclaims the secondary mineral processing materials.

(i) Mixtures of a waste that is excluded from regulation pursuant to subdivision (h) of this subrule and any other waste that exhibits a hazardous waste characteristic pursuant to R 299.9212 and that is not listed pursuant to R 299.9213 or R 299.9214, such that the resultant mixture does not exhibit any hazardous waste characteristic that would have been exhibited by the non-excluded waste alone if the mixture had not occurred.

(j) Cement kiln dust waste, except as provided in 40 C.F.R. §266.112 for facilities that burn or process hazardous waste.

(k) Waste which consists of discarded arsenical-treated wood or wood products, which fails the test for the toxicity characteristic for hazardous waste numbers D004 through D017 and which is not a hazardous waste for any other reason, if the waste is generated by persons who utilize the arsenical-treated wood and wood products for these materials' intended end use.

(l) Petroleum-contaminated media and debris that fail the test for the toxicity characteristic pursuant to R 299.9212 for hazardous waste numbers D018 through D043 only and are subject to the corrective action regulations pursuant to 40 C.F.R. part 280.

(m) Used chlorofluorocarbon refrigerants from totally enclosed heat transfer equipment, including mobile air conditioning systems, mobile refrigeration, and commercial and industrial air conditioning and refrigeration systems that use chlorofluorocarbons as the heat transfer fluid in a refrigeration cycle, if the refrigerant is reclaimed for further use.

(n) Non-terne plated used oil filters that are not mixed with wastes that are identified in R 299.9213 or R 299.9214, or both, if the oil filters have been gravity hot-drained using 1 of the following methods:

- (i) Puncturing the filter anti-drain back valve or the filter dome end and hot-draining.
- (ii) Hot-draining and crushing.
- (iii) Dismantling and hot-draining.
- (iv) Any other equivalent hot-draining method that will remove used oil.

- (o) Leachate or gas condensate collected from landfills where certain wastes have been disposed of provided that all of the following requirements are met:
- (i) The wastes disposed would meet 1 or more of the listing descriptions for hazardous waste numbers K169, K170, K171, K172, K174, K175, K176, K177, K178, and K181 if these wastes had been generated after the effective date of the listing.
 - (ii) The wastes described in paragraph (i) of this subdivision were disposed before the effective date of the listing.
 - (iii) The leachate or gas condensate do not exhibit any characteristic of a hazardous waste and are not derived from any other listed hazardous waste.
 - (iv) The discharge of the leachate or gas condensate, including leachate or gas condensate transferred from the landfill to a publicly owned treatment works by truck, rail, or dedicated pipe, is subject to regulations under section 307(b) or 402 of the federal clean water act.
 - (v) As of February 13, 2001, leachate or gas condensate derived from K169, K170, K171, and K172 is no longer exempt if it is stored or managed in a surface impoundment before discharge. As of November 21, 2003, leachate or gas condensate derived from K176, K177, or K178 is no longer exempt if it is stored or managed in a surface impoundment before discharge. After February 26, 2007, leachate or gas condensate derived from K181 will no longer be exempt if it is stored or managed in a surface impoundment before discharge unless the surface impoundment meets both of the following requirements:
 - (A) The surface impoundment is used to temporarily store leachate or gas condensate in response to an emergency situation.
 - (B) The surface impoundment has a double liner, and the leachate or gas condensate is removed from the impoundment and continues to be managed in compliance with the conditions of subdivision (o) of this subrule after the emergency ends.
- (3) The following hazardous wastes are not subject to regulation pursuant to parts 3 to 10 of these rules:
- (a) A hazardous waste that is generated in a product or raw material storage tank, a product or raw material transport vehicle or vessel, a product or raw material pipeline, or a manufacturing process unit or an associated nonwaste treatment manufacturing unit. This exemption does not apply in any of the following circumstances:
 - (i) Once the waste exits the unit in which it was generated.
 - (ii) If the unit is a surface impoundment.
 - (iii) If the hazardous waste remains in the unit more than 90 days after the unit ceases to be operated for the manufacturing, storage, or transportation of product or raw materials.
 - (b) Waste pesticides and pesticide residues which are generated by a farmer from his or her own use and which are hazardous wastes if the pesticide residues are disposed of on the farmer's own farm in a manner that is consistent with the disposal instructions on the pesticide container label and if the farmer empties or cleans each pesticide container pursuant to R 299.9207.
- (4) Except as provided in subrule (5) of this rule, a sample of waste or a sample of water, soil, or air that is collected for the sole purpose of testing to determine its characteristics or composition is not subject to Part 111 of the act and these rules if 1 of the following provisions is met:
- (a) The sample is being transported to a laboratory for the purpose of testing.
 - (b) The sample is being transported back to the sample collector after testing.
 - (c) The sample is being stored by the sample collector before transport to a laboratory for testing.
 - (d) The sample is being stored in a laboratory before testing.
 - (e) The sample is being stored in a laboratory after testing but before it is returned to the sample collector.
 - (f) The sample is being stored temporarily in the laboratory after testing for a specific purpose, such as until conclusion of a court case or enforcement action where further testing of the sample might be necessary.
- (5) To qualify for the exemption specified in subrule (4) of this rule, a sample collector that ships samples to a laboratory and a laboratory that returns samples to a sample collector shall comply with DOT, United States postal service, or any other applicable shipping requirements. The sample collector shall only ship a volume that is necessary for testing and analysis and, if the sample collector determines that DOT, United States postal service, or other shipping requirements do not apply to the shipment of the sample, the sample collector shall package the sample so that it does not leak, spill, or vaporize from its packaging and assure that all of the following information accompanies the sample:
- (a) The sample collector's name, mailing address, and telephone number.
 - (b) The laboratory's name, mailing address, and telephone number.
 - (c) The quantity of the sample.
 - (d) The date of shipment.
 - (e) A description of the sample.
- (6) The exemption specified in subrule (4) of this rule does not apply if the laboratory determines that the waste is hazardous but the laboratory is no longer in compliance with any of the conditions in subrule (5) of this rule.
- (7) Persons who generate or collect samples for the purpose of conducting treatability studies as defined in R 299.9108 are not subject to the requirements of parts 2, 3, and 4 of these rules or the notification requirements of section 3010 of RCRA and the samples are not included in the quantity determinations specified in R 299.9205 and R

299.9306(4) when the sample is being collected and prepared for transportation by the generator or sample collector, the sample is being accumulated or stored by the generator or sample collector before transportation to a laboratory or testing facility, or the sample is being transported to a laboratory or testing facility for the purpose of conducting a treatability study. The exemption specified in this subrule is applicable to samples of hazardous waste that are being collected and shipped for the purpose of conducting treatability studies if all of the following provisions are complied with:

- (a) The generator or sample collector does not use more than 10,000 kilograms of media that is contaminated with nonacute hazardous waste, 1,000 kilograms of any nonacute hazardous waste other than contaminated media, 1 kilogram of acute or severely toxic hazardous waste, or 2,500 kilograms of media that is contaminated with acute or severely toxic hazardous waste for each process that is being evaluated for each generated waste stream in a treatability study.
- (b) The mass of each sample shipment is not more than 10,000 kilograms. The 10,000-kilograms quantity may be all media contaminated with nonacute hazardous waste or may include 2,500 kilograms of media contaminated with acute or severely toxic hazardous waste, 1,000 kilograms of nonacute hazardous waste, and 1 kilogram of acute or severely toxic hazardous waste.
- (c) The sample shall be packaged and transported so that it will not leak, spill, or vaporize from its packaging during shipment and so that either of the following requirements are met:
 - (i) The transportation of each sample shipment is in compliance with United States department of transportation, United States postal service, or any other applicable shipping requirements.
 - (ii) If the DOT, United States postal service, or other shipping requirements do not apply to the shipment of the sample, all of the following information shall accompany the sample:
 - (A) The name, mailing address, and telephone number of the originator of the sample.
 - (B) The name, address, and telephone number of the facility that will perform the treatability study.
 - (C) The quantity of the sample.
 - (D) The date of the shipment.
 - (E) A description of the sample, including its hazardous waste number.
- (d) The sample is shipped to a laboratory or testing facility that is exempt pursuant to subrule (10) of this rule or has an appropriate RCRA permit, state hazardous waste operating license, or interim status.
- (e) The generator or sample collector maintains all of the following records for 3 years after completion of the treatability study:
 - (i) Copies of the shipping documents.
 - (ii) A copy of the contract with the facility that conducts the treatability study.
 - (iii) Documentation that shows all of the following information:
 - (A) The amount of waste that is shipped pursuant to this exemption.
 - (B) The name, address, and site identification number of the laboratory or testing facility that received the waste.
 - (C) The date the shipment was made.
 - (D) If unused samples and residues were returned to the generator.
- (f) The generator reports the information required pursuant to subdivision (e)(iii) of this subrule as part of the data referenced in R 299.9308(1).
- (8) The director may grant requests on a case-by-case basis for up to an additional 2 years for treatability studies involving bioremediation. The director may grant requests on a case-by-case basis for quantity limits in excess of those specified in subrules (7)(a) and (b) and (10)(d) of this rule for up to an additional 5,000 kilograms of media contaminated with nonacute hazardous waste, 500 kilograms of nonacute hazardous waste, 2,500 kilograms of media contaminated with acute or severely toxic hazardous waste, and 1 kilogram of acute or severely toxic hazardous waste. A request may be granted in response to 1 or both of the following requests:
 - (a) A request for authorization to ship, store, and conduct treatability studies on, additional quantities in advance of commencing treatability studies. The director shall consider all of the following factors in determining whether to grant the request:
 - (i) The nature of the technology.
 - (ii) The type of process.
 - (iii) The size of the unit undergoing testing, particularly in relation to scale-up considerations.
 - (iv) The time and quantity of material required to reach steady state operating conditions.
 - (v) Test design considerations such as mass balance calculations.
 - (b) A request for authorization to ship, store, and conduct treatability studies on, additional quantities after initiation or completion of initial treatability studies when any of the following occur:
 - (i) There has been an equipment or mechanical failure during the conduct of a treatability study.
 - (ii) There is a need to verify the results of a previously conducted treatability study.
 - (iii) There is a need to study and analyze alternative techniques within a previously evaluated treatment process.
 - (iv) There is a need to do further evaluation of an ongoing treatability study to determine final specifications for treatment.

(9) The additional quantities and time frames allowed under subrule (8) of this rule are subject to this rule. The generator or sample collector shall apply to the director and shall provide, in writing, all of the following information:

- (a) The reason why the generator or sample collector requires an additional quantity of the sample or time for the treatability study evaluation and the additional quantity or time needed.
 - (b) Documentation accounting for all samples of hazardous waste from the waste stream that have been sent for or undergone treatability studies, including all of the following information:
 - (i) The date that each previous sample from the waste stream was shipped.
 - (ii) The sample quantity of each previous shipment.
 - (iii) The laboratory or testing facility to which the sample was shipped.
 - (iv) What treatability study processes were conducted on each sample shipped.
 - (v) The available results of each treatability study.
 - (c) A description of the technical modifications or change in specifications that will be evaluated and the expected results.
 - (d) If further study is being required due to equipment or mechanical failure, then the applicant shall include information regarding the reason for the failure and also include a description of what procedures were established, or what equipment improvements have been made, to protect against further equipment or mechanical failure.
 - (e) Other information that the director considers necessary.
- (10) Samples that undergo treatability studies and the laboratory or testing facility that conducts the treatability studies, to the extent the facilities are not otherwise subject to the requirements of part 111 of the act or these rules, are not subject to any of the requirements of these rules or to the notification requirements of section 3010 of RCRA if the conditions of this subrule are met. A mobile treatment unit may qualify as a testing facility subject to this subrule. If a group of mobile treatment units is located at the same site, then the limitations specified in this subrule apply to the entire group of mobile treatment units collectively as if the group were 1 mobile treatment unit. The conditions are as follows:
- (a) Not less than 45 days before conducting treatability studies, the facility shall notify the director, in writing, that it intends to conduct treatability studies pursuant to this rule.
 - (b) The laboratory or testing facility that conducts the treatability study has a site identification number.
 - (c) Not more than a total of 10,000 kilograms of "as received" media contaminated with nonacute hazardous waste, 2,500 kilograms of media contaminated with acute or severely toxic hazardous waste, or 250 kilograms of other "as received" hazardous waste is subjected to the initiation of treatment in all treatability studies in any single day. "As received" hazardous waste refers to waste as received in the shipment from the generator or sample collector.
 - (d) The quantity of "as received" hazardous waste that is stored at the facility for the purpose of evaluation in treatability studies is not more than 10,000 kilograms, the total of which may include 10,000 kilograms of media contaminated with nonacute hazardous waste, 2,500 kilograms of media contaminated with acute or severely toxic hazardous waste, 1,000 kilograms of nonacute hazardous waste other than contaminated media, and 1 kilogram of acute or severely toxic hazardous waste. The quantity limitation does not include treatment materials, including nonhazardous waste, that are added to "as received" hazardous waste.
 - (e) Not more than 90 days have elapsed since the treatability study for the sample was completed, or not more than 1 year, or 2 years for treatability studies involving bioremediation, has elapsed since the generator or sample collector shipped the sample to the laboratory or testing facility, whichever date occurs first.
 - (f) The treatability study does not involve the placement of hazardous waste on the land or the open burning of hazardous waste.
 - (g) The facility maintains records, for 3 years following completion of each study, that show compliance with the treatment rate limits, storage time, and quantity limits. All of the following specific information shall be included for each treatability study that is conducted:
 - (i) The name, address, and site identification number of the generator or sample collector of each waste sample.
 - (ii) The date the shipment was received.
 - (iii) The quantity of waste accepted.
 - (iv) The quantity of "as received" waste in storage each day.
 - (v) The date the treatment study was initiated and the amount of "as received" waste introduced to treatment each day.
 - (vi) The date the treatability study was concluded.
 - (vii) The date any unused sample or residues generated from the treatability study were returned to the generator or sample collector or, if sent to a designated facility, the name of the facility and the site identification number.
 - (h) The facility keeps, on site, a copy of the treatability study contract and all shipping papers associated with the transport of treatability study samples to and from the facility for a period ending 3 years from the completion date of each treatability study.
 - (i) The facility prepares and submits a report to the director by March 15 of each year that includes all of the following information for the previous calendar year:

- (i) The name, address, and site identification number of the facility conducting the treatability studies.
 - (ii) The types, by process, of treatability studies conducted.
 - (iii) The names and addresses of persons for whom studies have been conducted, including their site identification numbers.
 - (iv) The total quantity of waste in storage each day.
 - (v) The total quantity and types of waste subjected to treatability studies.
 - (vi) When each treatability study was conducted.
 - (vii) The final disposition of residues and unused sample from each treatability study.
- (j) The facility determines if any unused sample or residues generated by the treatability study are hazardous waste pursuant to R 299.9203 and, if so, are subject to these rules, unless the residues and unused samples are returned to the sample originator pursuant to the exemption in subrule (7) of this rule.
- (k) The facility notifies the director, by letter, when the facility is no longer planning to conduct any treatability studies at the site.
- (11) The disposal of PCB-containing dielectric fluid and electric equipment that contains the fluid as authorized for use and as regulated pursuant to 40 C.F.R. part 761 and fluid and equipment that are hazardous only because they fail the test for the toxicity characteristic for hazardous waste numbers D018 through D043 are not subject to regulation pursuant to parts 2 to 7 and 9 and 10 of these rules.
- (12) Dredged material, as defined in 40 C.F.R. §232.2, that is subject to the requirements of a permit that has been issued pursuant to section 404 of the federal water pollution control act, 33 U.S.C. §1344, or section 103 of the marine protection, research, and sanctuaries act of 1972, 33 U.S.C. §1413, is not a hazardous waste for the purposes of part 111 of the act and these rules. For the purposes of this exemption, "permit" means any of the following:
- (a) A permit issued by the U.S. army corps of engineers or an approved state under section 404 of the federal water pollution control act, 33 U.S.C. §1344.
 - (b) A permit issued by the U.S. army corps of engineers under section 103 of the marine protection, research, and sanctuaries act of 1972, 33 U.S.C. §1413.
 - (c) In the case of U.S. army corps of engineers civil works projects, the administrative equivalent of the permits referred to in subdivisions (a) and (b) of this subrule, as provided for in the U.S. army corps of engineers regulations.
- (13) The provisions of 40 C.F.R. §261.38, part 280, and part 761 are adopted by reference in R 299.11003.

R 299.9205 Special requirements for hazardous waste generated by conditionally exempt small quantity generators.

- (5) When making the quantity determinations of this rule and part 3 of these rules, the generator shall include all hazardous waste that he or she generates, except the hazardous waste that meets any of the following criteria:
- (a) Is exempt from regulation pursuant to R 299.9204(3) to (11), R 299.9206(3), or R 299.9207(1).
 - (b) Is managed immediately upon generation only in on-site elementary neutralization units, wastewater treatment units, or totally enclosed treatment units as defined in part 1 of these rules.
 - (c) Is removed from on-site storage.
 - (d) Is hazardous waste produced by on-site treatment, including reclamation, of his or her hazardous waste if the hazardous waste that is treated was counted once.
 - (e) Is recycled, without prior storage or accumulation, only in an on-site process that is subject to regulation pursuant to R 299.9206(1)(c).
 - (f) Are spent materials that are generated, reclaimed, and subsequently reused on-site, if the spent materials have been counted once.
 - (g) Is used oil and managed pursuant to R 299.9206(4) and R 299.9809 to R 299.9816.
 - (h) Are spent lead-acid batteries managed pursuant to R 299.9804.
 - (i) Is universal waste managed pursuant to R 299.9228.
 - (j) Is a hazardous waste that is an unused commercial chemical product listed in R 299.9214 or exhibiting 1 or more characteristics in R 299.9212 and is generated solely as a result of a laboratory clean-out conducted at an eligible academic entity pursuant to R 299.9313.

R 299.9206 Requirements for recyclable materials.

- (1) Except as provided in subrules (2) to (5) of this rule, recyclable materials are subject to all of the following requirements:
- (a) Generators and transporters of recyclable materials are subject to the applicable requirements of parts 3 and 4 of these rules.
 - (b) Owners or operators of facilities that store recyclable materials before they are recycled are regulated pursuant to all applicable provisions of parts 5, 6, 7, and 8 of these rules. The recycling process itself is exempt from regulation, except as provided in subdivision (d) of this subrule.
 - (c) Owners or operators of facilities that recycle recyclable materials without storing them before they are recycled are subject to the identification number requirements of 40 C.F.R. §264.11 and the manifest requirements of R

299.9608. The recycling process itself is exempt from regulation, except as provided in subdivision (d) of this subrule.

(d) A hazardous waste management unit in which recyclable materials are recycled is subject to the requirements of 40 C.F.R. part 265, subparts AA and BB if the unit is located at a facility that is described in R 299.9601(3)(a) or (b), or the requirements of R 299.9630 and R 299.9631 if the unit is located at a facility subject to the licensing requirements specified in part 111 of the act and part 5 of these rules.

(2) The following recyclable materials are not subject to the requirements of this rule, but are regulated under the applicable provisions of parts 5 and 8 of these rules:

(a) Recyclable materials used in a manner that constitutes disposal.

(b) Hazardous wastes burned for energy recovery in boilers and industrial furnaces that are not regulated as incinerators pursuant to the provisions of part 6 of these rules.

(c) Recyclable materials from which precious metals are reclaimed.

(d) Spent lead-acid batteries that are being reclaimed.

(3) The following recyclable materials are not subject to regulation pursuant to part 111 of the act or these rules, except for the environmental and human health standards of R 299.9602 and the provisions of R 299.9809 to R 299.9816, as applicable:

(a) Industrial ethyl alcohol that is reclaimed, except that, unless otherwise provided in an international agreement as specified in the provisions of 40 C.F.R. §262.58, the following requirements apply:

(i) A person who initiates a shipment for reclamation in a foreign country, and any intermediary who arranges for the shipment, shall comply with the requirements applicable to a primary exporter in the provisions of 40 C.F.R. §§262.53, 262.56(a)(1) to (4), (6), and (b), and 262.57, export such materials only with the consent of the receiving country and in conformance with the EPA acknowledgment of consent as defined in subpart E of 40 C.F.R. part 262, and provide a copy of the EPA acknowledgment of consent to the shipment to the transporter that transports the shipment for export.

(ii) A transporter that transports a shipment for export shall not accept a shipment if he or she knows that the shipment does not conform to the EPA acknowledgment of consent, shall ensure that a copy of the EPA acknowledgment of consent accompanies the shipment, and shall ensure that it is delivered to the facility that is designated by the person who initiates the shipment.

(b) Scrap metal that is not excluded under R 299.9204(1)(p).

(c) Fuels produced from the refining of oil-bearing hazardous wastes together with normal process streams at a petroleum refining facility if such wastes result from normal petroleum refining, production, and transportation practices. This exemption does not apply to fuels produced from oil recovered from oil-bearing hazardous waste, if the recovered oil is already excluded under R 299.9204(1)(l).

(d) Hazardous waste fuel which is produced from oil-bearing hazardous wastes from petroleum refining, production, or transportation practices or which is produced from oil that is reclaimed from the hazardous wastes, where the hazardous wastes are reintroduced into a process that does not use distillation or does not produce products from crude oil if the resulting fuel is in compliance with the used oil specification in R 299.9809(1)(f) and if other hazardous wastes are not used to produce the hazardous waste fuel.

(e) Hazardous waste fuel that is produced from oil-bearing hazardous waste which results from petroleum refining production and transportation practices if the hazardous wastes are reintroduced into a refining process after a point at which contaminants are removed and if the fuel is in compliance with the used oil fuel specification in R 299.9809(1)(f).

(f) Oil which is reclaimed from oil-bearing hazardous wastes that result from petroleum refining, production, and transportation practices, which reclaimed oil is burned as a fuel without reintroduction to a refining process, if the reclaimed oil is in compliance with the used oil fuel specification in R 299.9809(1)(f).

(g) Textiles, including shop towels, rags, gloves, uniforms, linens, mops, and wipers, that are being recycled in a manner other than being burned for energy recovery or used in a manner constituting disposal if both of the following conditions are met:

(i) After the textile's original use, hazardous waste is not mixed with the textile.

(ii) The textiles and the containers used to transport the textiles do not contain any free liquids.

(4) Used oil that is recycled and is also a hazardous waste solely because it exhibits a hazardous characteristic is not subject to regulation pursuant to part 111 of the act or these rules, except for the environmental and human health standards in the provisions of R 299.9602 and the provisions of R 299.9809 to R 299.9816. Used oil that is recycled includes any used oil that is reused, after its original use, for any purpose. Used oil includes, but is not limited to, oil that is re-refined, reclaimed, burned for energy recovery, or reprocessed.

(5) An owner or operator of a facility that stores lamps which meet the definition of a hazardous waste before recycling the lamps at the facility shall comply with all of the following requirements:

(a) Submit a written notification of hazardous waste lamp storage activity to the director. The notification shall include all of the following information:

(i) The name, mailing address, and telephone number of the owner.

(ii) The name, mailing address, and telephone number of the operator.

(iii) The name, mailing address, location, and telephone number of the recycle facility.

- (iv) A description of the unit or units in which the lamps are managed on-site before recycling and a map that shows the location of the unit or units.
 - (b) Obtain an identification number for the facility from the director.
 - (c) The environmental and human health standards pursuant to the provisions of R 299.9602.
 - (d) The location standards pursuant to the provisions of R 299.9603.
 - (e) The facility design and operating standards pursuant to the provisions of R 299.9604.
 - (f) The handling requirements of R 299.9228(4)(c).
 - (g) Ensure that facility personnel are trained with respect to proper hazardous waste handling and preparedness and prevention procedures and are familiar with the facility emergency procedures.
 - (h) If there is a fire, explosion, or other release of hazardous waste or hazardous waste constituents that could threaten human health or the environment, or if the owner or operator has knowledge that a spill has reached surface water or groundwater, then the owner or operator shall immediately notify the department's pollution emergency alerting system telephone number 800-292-4706, or the department's district office for which the facility is located. The notification shall include all of the following information:
 - (i) The name and telephone number of the person who is reporting the incident.
 - (ii) The name, address, telephone number, and identification number of the facility.
 - (iii) The date, time, and type of incident.
 - (iv) The name and quantity of the material or materials involved and released.
 - (v) The extent of injuries, if any.
 - (vi) The estimated quantity and disposition of recovered materials that resulted from the incident, if any.
 - (vii) An assessment of actual or potential hazards to human health or the environment.
 - (viii) The immediate response action taken.
 - (i) The area where the lamps are accumulated shall be protected, as appropriate for the type of waste being stored, from weather, fire, physical damage, and vandals.
 - (j) Accumulation shall be conducted so that fugitive emissions are not in violation of the provisions of part 55 of the act.
 - (k) A written operating record shall be maintained on-site by the owner or operator and shall contain all of the following information:
 - (i) The quantity of lamps received on-site during the calendar year.
 - (ii) The quantity of lamps recycled at the facility during the calendar year.
 - (iii) The documentation necessary to demonstrate that the lamps are not being stored on-site for more than 1 year.
 - (l) The closure standards of 40 C.F.R. §§264.111 and 264.114.
 - (m) The provisions of R 299.9614 if the lamps are being stored in containers and the provisions of R 299.9615 if the lamps are being stored in tanks.
 - (n) The lamps shall not be stored on-site for more than 1 year from the date that the owner or operator receives the lamps.
 - (o) Any hazardous waste that is generated from the lamp recycle operation is subject to the provisions of parts 2 to 7 of these rules.
- (6) Hazardous waste that is exported to or imported from designated member countries of the organization for economic cooperation and development, as defined in 40 C.F.R. §262.58(a)(1), for the purpose of recovery is subject to the requirements of R 299.9312 if the hazardous waste is either a federal hazardous waste subject to the manifesting requirements of part 3 of these rules or is a universal waste subject to the provisions R 299.9228.
- (7) The provisions of 40 C.F.R. §§264.11, 264.111, and 264.114, and part 265, subparts AA and BB, are adopted by reference in R 299.11003.

R 299.9212 Characteristics of hazardous waste.

- (1) A waste exhibits the characteristic of ignitability and is identified by the hazardous waste number D001 if a representative sample of the waste has any of the following properties:
- (a) It is a liquid, other than an aqueous solution produced by a kraft pulp or paper mill that contains less than 24% alcohol by volume or an aqueous solution that contains less than 24% alcohol, by volume, as defined by section 211.117(a)(5) to (7) of the Internal Revenue Code, 27 U.S.C. §211.117(a)(5) to (7), including distilled spirits, wine, and malt beverages, and has a flash point less than 60 degrees entigrade (140 degrees Fahrenheit), as determined by any of the following test methods:
 - (i) A Pensky-Martens closed cup tester using the test method specified in ASTM standard D-93-11, which is adopted by reference in R 299.11001.
 - (ii) A setaflash closed cup tester using the test method specified in ASTM standard D-3278-96, which is adopted by reference in R 299.11001.
 - (iii) A standard test method for flash point by continuously closed cup tester using the test method specified in ASTM standard D6450-05, which is adopted by reference in R 299.11001.

- (iv) An equivalent test method approved by the director, or his or her designee, pursuant to procedures in R 299.9215.
 - (b) It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture, or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard.
 - (c) It is an ignitable compressed gas as defined in 40 C.F.R. §261.21(a)(3) and meets the criteria specified therein.
 - (d) It is an oxidizer as defined in 49 C.F.R. §173.127, which is adopted by reference in R 299.11004.
- (2) A waste exhibits the characteristic of corrosivity and is identified by the hazardous waste number D002 if a representative sample of the waste has either of the following properties:
- (a) It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, as determined by a pH meter using method 9040C in the publication entitled "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," which is adopted by reference in R 299.11005.
 - (b) It is a liquid and corrodes steel (SAE 1020) at a rate of more than 6.35 mm (0.250 inch) per year at a test temperature of 55 degrees Centigrade (130 degrees Fahrenheit) as determined by method 1110A in the publication entitled "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," which is adopted by reference in R 299.11005.
- (3) A waste exhibits the characteristic of reactivity and is identified by the hazardous waste number D003 if a representative sample of the waste has any of the following properties:
- (a) It is normally unstable and readily undergoes violent change without detonating.
 - (b) It reacts violently with water.
 - (c) It forms potentially explosive mixtures with water.
 - (d) When mixed with water, it generates toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment.
 - (e) It is a cyanide or sulfide-bearing waste that, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment.
 - (f) It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement.
 - (g) It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure.
 - (h) It is a forbidden explosive as defined in 49 C.F.R. §173.54, or it meets the definition of a Division 1.1, 1.2, or 1.3 explosive as defined in 49 C.F.R. §§173.50 and 173.53, which are adopted by reference in R 299.11004.
- (4) A waste, except manufactured gas plant waste, exhibits the toxicity characteristic if, using the toxicity characteristic leaching procedure, test Method 1311 in the publication entitled "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," which is adopted by reference in R 299.11005, the extract from a representative sample of the waste contains any of the contaminants listed by the administrator or the director and identified in table 201a of these rules at a concentration equal to or greater than the respective values given in the tables. If the waste contains less than 0.5% filterable solids, then the waste itself, after filtering using the methodology outlined in method 1311, is considered to be the extract for the purposes of this rule.
- (5) A waste exhibits the characteristic of severe toxicity if the waste contains 1 part per million or more of a severely toxic substance listed in table 202.
- (6) A hazardous waste that is identified by a characteristic in this rule shall be assigned every hazardous waste number that is applicable. The hazardous waste number or numbers shall be used in complying with the notification, recordkeeping, and reporting requirements of these rules. The hazardous waste numbers are as follows:
- (a) For wastes determined to be hazardous pursuant to subrules (4) and (5) of this rule, the hazardous waste number listed in table 201a or table 202 of these rules.
 - (b) For a waste that exhibits the characteristic of ignitability, the hazardous waste number D001.
 - (c) For a waste that exhibits the characteristic of corrosivity, the hazardous waste number D002.
 - (d) For a waste that exhibits the characteristic of reactivity, the hazardous waste number D003.
- (7) For the purposes of this rule, the director, or his or her designee, shall consider a sample that is obtained using any of the applicable sampling methods specified in 40 C.F.R. part 261, appendix I, which is adopted by reference in R 299.11003, to be a representative sample.
- (8) The following test methods shall be used:
- (a) For aflatoxin, the test methods in subsection 26, natural poisons, of the publication entitled "Official Methods of Analysis of the Association of Official Analytical Chemists," 13th edition, 1980, which is adopted by reference in R 299.11006.
 - (b) For chlorinated dibenzo-p-dioxins and chlorinated dibenzofurans in chemical wastes, including still bottoms, filter aids, sludges, spent carbon, and reactor residues, and in soil, EPA method 8280B or 8290A in the publication entitled "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," which is adopted by reference in R 299.11005.
 - (c) Alternate procedures as approved by the director or his or her designee.
- (9) The provisions of 40 C.F.R. §261.21(a)(3) are adopted by reference in R 299.11003.

R 299.9213 Lists of hazardous wastes from nonspecific and specific sources.

- (1) The following wastes are hazardous wastes unless excluded pursuant to the provisions R 299.9211:
 - (a) Wastes from nonspecific sources listed by the administrator and identified in table 203a of these rules.
 - (b) Wastes from specific sources listed by the administrator and identified in table 204a of these rules.
- (2) Each hazardous waste that is listed in subrule (1) of this rule is assigned a hazardous waste number which precedes the name of the waste on the table in which it is listed. The number shall be used in complying with the notification requirements and the recordkeeping and reporting requirements of these rules.
- (3) The EPA hazardous waste numbers F020, F021, F022, F023, F026, and F027 are subject to the exclusion limits for acutely hazardous wastes established in R 299.9205.
- (4) For the purposes of the EPA hazardous waste numbers F037 and F038 listings, aggressive biological treatment units are defined as those units that employ 1 of the following 4 treatment methods:
 - (a) Activated sludge.
 - (b) Trickling filter.
 - (c) Rotating biological contactor for the continuous accelerated biological oxidation of wastewaters.
 - (d) High-rate aeration. High-rate aeration is a system of surface impoundments or tanks in which intense mechanical aeration is used to completely mix the wastes and enhance biological activity. High-rate aeration systems shall be composed of units that employ a minimum of 6 horsepower per million gallons of treatment volume and either the hydraulic retention time of the unit is no longer than 5 days, or the hydraulic retention time is no longer than 30 days and the unit does not generate a sludge that is hazardous waste by the toxicity characteristic.
- (5) Generators and facility owners and operators shall demonstrate that their sludges are not subject to being listed as F037 or F038, or both, wastes pursuant to the provisions of subrule (4) of this rule. Generators and facility owners and operators shall maintain, in their operating or other on-site records, documents and data sufficient to demonstrate that the unit is an aggressive biological treatment unit as defined in subrule (4) of this rule and that the sludges sought to be exempted from the definitions of F037 or F038, or both, wastes were actually generated in the aggressive biological treatment unit.
- (6) For the purposes of the EPA hazardous waste number F037 listing, sludges are considered to be generated at the moment of deposition in the unit, where deposition is defined as at least a temporary cessation of lateral particle movement.
- (7) For the purposes of the EPA hazardous waste number F038 listing, sludges are considered to be generated at the moment of deposition in the unit, where deposition is defined as at least a temporary cessation of lateral particle movement, and floats are considered to be generated at the moment they are formed in the top of the unit.

R 299.9214 Discarded commercial chemical products, off-specification species, containers, container residues, and spill residues as hazardous wastes.

- (1) The following materials or items are hazardous wastes when they are discarded or intended to be discarded as described in R 299.9202(1)(a), when they are burned for energy recovery instead of their original intended use, when they are used to produce fuels instead of their intended use, when they are applied to the land instead of their intended use, or when they are contained in products that are applied to the land instead of their original intended use:
 - (a) Any commercial chemical product or manufacturing chemical intermediate having the generic name in tables 205a, 205b, and 205c of these rules.
 - (b) Any off-specification commercial chemical product or manufacturing intermediate which, if it met specifications, would have the generic name listed in tables 205a, 205b, and 205c of these rules.
 - (c) Any residue that remains in a container or in an inner liner which is removed from a container that has held any commercial chemical product or manufacturing chemical intermediate having the generic names listed in tables 205a, 205b, and 205c of these rules, unless the container is empty as defined in R 299.9207.
 - (d) Any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill into any water or on any land of any commercial chemical product, a manufacturing chemical intermediate having the generic name listed in tables 205a, 205b, and 205c of these rules, any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill into any water or on any land of any off-specification chemical product, and manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in tables 205a, 205b, and 205c of these rules.
- (2) The commercial chemical products, manufacturing chemical intermediates, or off-specification commercial chemical products listed by the administrator and identified in table 205a are acutely hazardous wastes (H) and are subject to the small quantity exclusion defined in R 299.9205.
- (3) The commercial chemical products, manufacturing chemical intermediates, or off-specification commercial chemical products listed by the administrator and identified in table 205b are toxic wastes (T) and are subject to the small quantity exclusion defined in R 299.9205.
- (4) The commercial chemical products, manufacturing chemical intermediates, or off-specification commercial chemical products listed in table 205c of these rules have been determined to be hazardous by the director, are identified as toxic wastes (T), and are subject to the small quantity exclusion defined in R 299.9205(1).

(5) As used in subrule (1) of this rule, the phrases "commercial chemical product," "manufacturing chemical intermediate," "off-specification commercial chemical product," and "manufacturing chemical intermediate" refer to materials that are manufactured or formulated for commercial or manufacturing use. The phrases do not refer to materials, such as manufacturing process wastes, that contain any of the substances listed in tables 205a, 205b, or 205c of these rules.

(6) Each hazardous waste listed in subrule (1) of this rule is assigned the hazardous waste number in tables 205a, 205b, or 205c of these rules that corresponds to the constituent which caused the waste to be hazardous. With regard to a mixture of hazardous wastes, a number shall be assigned in the following priority order based upon the wastes or constituents present: (a) Acutely hazardous, from table 205a.

(b) Toxic, from table 205b.

(c) Toxic, from table 205c of these rules. If the constituents are listed in the same table, the number assigned shall correspond to the constituents present in the greatest amount on a weight basis.

PART 115 Rules of Act 451

R 299.4115 Criteria for designating inert materials appropriate for general reuse.

(1) A person may petition the director to designate a solid waste as an inert material that is appropriate for general reuse.

(2) The director shall approve a petition that is submitted pursuant to this rule if the petition demonstrates that the concentration of hazardous substances in the material is below 1 of the following criteria:

(a) The background concentration of the substance or substances.

(b) The method detection limit for the substance or substances in question.

(c) Type B criteria for soil specified in R 299.5711. The director shall waive type B criteria based on inhalation hazards if the petition demonstrates that the waste is not of a respirable particle size and is not likely to be reduced to such size under the conditions that the waste may be exposed to.

(3) A petition to designate a material as inert for general reuse shall contain the information that is specified in R 299.4118.

(3) After receiving a petition for an equivalent method, the director, or his or her designee, shall, within 120 days of receiving the petition, request any additional information on the proposed method which he or she may reasonably require to evaluate the method. If the petition is granted, the director shall initiate rule change procedures under act 306.

(4) The provisions of 40 C.F.R. §§260.20(b) and 260.21(b) are adopted by reference in R 299.11003.

R 299.9216 Method of analysis.

Rule 216. (1) The method of analysis specified in the provisions of appendix I of 40 C.F.R. part 261 shall be used to identify the hazardous constituents listed in appendices VII and VIII of 40 C.F.R. part 261. Alternate methods of analysis may be used if approved by the director.

(2) The provisions of 40 C.F.R. part 261, appendices I, VII, and VIII are adopted by reference in R 299.11003.

R 299.9217 Table 201a.

Rule 217. Table 201a reads as follows:

Table 201a			
EPA Hazardous Waste Number	Chemical Abstract Services Number	Material	Extract Concentration milligrams per liter
D004	440-38-2	Arsenic	5.0
D005	7440-39-3	Barium	100.0
D018	71-43-2	Benzene	0.5
D006	7440-43-9	Cadmium	1.0
D019	56-23-5	Carbon tetrachloride	0.5
D020	57-74-9	Chlordane	0.03
D021	108-90-7	Chlorobenzene	100.0
D022	67-66-3	Chloroform	6.0
D007	7440-47-3	Chromium	5.0
D023	95-48-7	o-Cresol	200.0**
D024	108-39-4	m-Cresol	200.0**
D025	106-44-5	p-Cresol	200.0**
D026	-----	Cresol	200.0**
D016	94-75-7	2,4-D (2,4-Dichlorophenoxyacetic Acid)	10.0
D027	106-46-7	1,4-Dichlorobenzene	7.5
D028	107-06-2	1,2-Dichloroethane	0.5
D029	75-35-4	1,1-Dichloroethylene	0.7
D030	121-14-2	2,4-Dinitrotoluene	0.13*
D012	72-20-8	Endrin (1,2,3,4,10,10-hexachloro-1,7-Epoxy-1,4,4a,5,6,7,8,8a octahydro-1,4-endo, endo-5,8-dimethano naphthalene)	0.02

Table 201a			
EPA Hazardous Waste Number	Chemical Abstract Services Number	Material	Extract Concentration milligrams per liter
D031	76-44-8	Heptachlor (and its Epoxide)	0.008
D032	118-74-1	Hexachlorobenzene	0.13*
D033	87-68-3	Hexachlorobutadiene	0.5
D034	67-72-1	Hexachloroethane	3.0
D008	7439-92-1	Lead	5.0
D013	58-89-9	Lindane (1,2,3,4,5,6-hexa-chlorocyclohexane, gamma isomer)	0.4
D009	7439-97-6	Mercury	0.2
D014	72-43-5	Methoxychlor (1,1,1-trichloro-2,2-bis(p-methoxyphenyl)ethane)	10.0
D035	78-93-3	Methyl ethyl ketone	200.0
D036	98-95-3	Nitrobenzene	2.0
D037	87-86-5	Pentachlorophenol	100.0
D038	110-86-1	Pyridine	5.0*
D010	7782-49-2	Selenium	1.0
D011	7440-22-4	Silver	5.0
D039	127-18-4	Tetrachloroethylene	0.7
D015	8001-35-2	Toxaphene (C ₁₀ H ₁₀ C ₁₈ , Technical chlorinated camphene, 67-69 percent chlorine)	0.5
D040	79-01-6	Trichloroethylene	0.5
D041	95-95-4	2,4,5-Trichlorophenol	400.0
D042	88-06-2	2,4,6-Trichlorophenol	2.0
D017	93-72-1	2,4,5 TP Silvex (2,4,5-Tri-chlorophenoxypropionic acid)	1.0
D043	75-01-4	Vinyl chloride	0.2

* Quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level.

**IF o-, m-, and p-Cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 mg/l.

R 299.9218 Rescinded.

R 299.9219 Table 202.

Rule 219. Table 202 reads as follows:

Table 202	
Michigan Hazardous Waste Number	Substance
001S	Aflatoxin
002S	2,3,7,8-Tetrachlorodibenzo-p-dioxin
003S	1,2,3,7,8-Pentachlorodibenzo-p-dioxin
004S	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin
005S	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin
006S	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin
007S	2,3,7,8-Tetrachloridibenzo furan

R 299.9220 Table 203a; hazardous waste from nonspecific sources.

Rule 220. Table 203a reads as follows:

Table 203a		
EPA Hazardous Waste Number	Hazardous Waste From Nonspecific Sources	Hazard Code
F001	The following spent halogenated solvents used in degreasing: tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; all spent solvent mixtures and blends used in degreasing containing, before use, a total of 10% or more, by volume, of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures	(T)
F002	The following spent halogenated solvents: tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane and 1,1,2-trichloroethane; all spent solvent mixtures and blends containing, before use, a total of 10% or more, by volume, of one or more of the above halogenated solvents or those solvents listed in F001, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures	(T)
F003	The following spent nonhalogenated solvents: xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures and blends containing, before use, only the above spent nonhalogenated solvents; and all spent solvent mixtures or blends, containing before use, one or more of the above nonhalogenated solvents, and a total of 10% or more, by volume, of one or more of those solvents listed in F001, F002, F004, and F005 and still bottoms from the recovery of these spent solvents and spent solvent mixtures	(I)

Table 203a		
EPA Hazardous Waste Number	Hazardous Waste From Nonspecific Sources	Hazard Code
F004	The following spent nonhalogenated solvents: cresols and cresylic acid, and nitrobenzene; all spent solvent mixtures and blends containing, before use, a total of 10% or more, by volume, of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures	(T)
F005	The following spent nonhalogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures and blends containing, before use, a total of 10% or more, by volume, of one or more of the above nonhalogenated solvents or those solvents listed in F001, F002 and F004; and still bottoms from the recovery of these spent solvents and spent solvent mixtures	(I,T)
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating used on a segregated basis on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning or stripping associated with tin, zinc, and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum	(T)
F007	Spent cyanide plating bath solutions from electroplating operations	(R,T)
F008	Plating sludges from the bottom of plating baths from electroplating operations where cyanides are used in the process	(R,T)
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process	(R,T)
F010	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process	(R,T)
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat-treating operations	(R,T)
F012	Quenchine wastewater treatment sludges from metal heat-treating operations where cyanides are used in the process	(T)
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process. Wastewater treatment sludges from the manufacturing of motor vehicles using a zinc phosphating process will not be subject to this listing at the point of generation if both of the following requirements are met: 1) the wastes are not placed outside on the land prior to shipment to a landfill for disposal and are either disposed of in a solid waste landfill unit that is permitted or licensed under part 115, solid waste management, of the	(T)

Table 203a		
EPA Hazardous Waste Number	Hazardous Waste From Nonspecific Sources	Hazard Code
	act; disposed in a hazardous waste landfill meeting the requirements of the act and these rules; or, if out of state, disposed of in a Subtitle D municipal or industrial landfill unit that is equipped with a single clay liner and is permitted, licensed, or otherwise authorized by the receiving state; or disposed of in a landfill subject to, or otherwise meeting, the requirements of 40 CFR §§258.40, 264.301, or 265.301, and 2) the generator maintains records to prove that the exempted sludges meet the conditions of the listing, including: volume of waste generated and disposed off site; date the waste was generated, date the waste was sent off site, name and address of receiving facility, and documentation confirming receipt. For the purposes of this listing, motor vehicle manufacturing means the engagement in the manufacture of complete automobiles and light trucks/utility vehicles or chassis only.	
F020	Wastes, except wastewater and spent carbon from hydrogen chloride purification, from the production or manufacturing use as a reactant, chemical intermediate, or component in a formulating process, of tri- or tetrachlorophenol or of intermediates used to produce their pesticide derivatives. This listing does not include wastes from the production of hexachlorophene from highly purified 2,4,5-trichlorophenol	(H)
F021	Wastes, except wastewater and spent carbon from hydrogen chloride purification, from the production or manufacturing use as a reactant, chemical intermediate, or component in a formulating process of pentachlorophenol or of intermediates used to produce its derivatives	(H)
F022	Wastes, except wastewater and spent carbon from hydrogen chloride purification, from the manufacturing use as a reactant, chemical intermediate, or component in a formulating process of tetra-, penta-, or hexachlorobenzenes under alkaline conditions	(H)
F023	Wastes, except wastewater and spent carbon from hydrogen chloride purification, from the production of materials on equipment previously used for the production or manufacturing use as a reactant, chemical intermediate, or component in a formulating process of tri- and tetrachlorophenols. This listing does not include wastes from equipment used only for the production or use of hexachlorophene from highly purified 2,4,5-trichlorophenol	(H)
F024	Process wastes, including, but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from 1 to 5, with varying amounts and positions of chlorine substitutions. This listing does not include wastewater, wastewater treatment sludges, spent catalysts, and wastes listed in	(T)

Table 203a		
EPA Hazardous Waste Number	Hazardous Waste From Nonspecific Sources	Hazard Code
	R 299.9213(1)(a) or R 299.9214(1)(a)	
F025	Condensed light ends, spent filters and filter acids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from 1 to 5, with varying amounts and positions of chlorine substitution	(T)
F026	Wastes, except wastewater and spent carbon from hydrogen chloride purification, from the production of materials on equipment previously used for the manufacturing use as a reactant, chemical intermediate, or component in a formulating process of tetra-, penta-, or hexachlorobenzene under alkaline conditions	(H)
F027	Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulation containing compounds derived from these chlorophenols. This listing does not include formulations containing hexachlorophene synthesized from prepurified 2,4,5-trichlorophenol as the sole component	(H)
F028	Residues resulting from the incineration or thermal treatment of soil contaminated with EPA hazardous waste numbers F020, F021, F022, F023, F026, and F027	(T)
F032	Wastewaters, except for those that have not come into contact with process contaminants; process residuals; preservative drippage; and spent formulations from wood preserving processes generated at plants that currently use or have previously used chlorophenolic formulations, except potentially cross-contaminated wastes that have had the F032 hazardous waste number deleted pursuant to 40 C.F.R. §261.35 or potentially cross-contaminated wastes that are otherwise currently regulated as F034 or F035, and where the generator does not resume or initiate the use of chlorophenolic formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote or pentachlorophenol, or both.	(T)
F034	Wastewaters, except for those that have not come into contact with process contaminants; process residuals; preservative drippage; and spent formulations from wood preserving processes generated at plants that use creosote formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote or pentachlorophenol, or both.	(T)
F035	Wastewaters, except for those that have not come into contact with process contaminants; process residuals; preservative drippage; and spent formulations from wood preserving processes generated at plants that use inorganic preservatives containing arsenic or chromium. This	(T)

Table 203a		
EPA Hazardous Waste Number	Hazardous Waste From Nonspecific Sources	Hazard Code
	listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote or pentachlorophenol, or both.	
F037	Petroleum refinery primary oil/water/solids (oil and/or water and/or solids) separation sludge-any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in R 299.9213(4), including sludges generated in 1 or more additional units after wastewaters have been treated in aggressive biological treatment units, and K051 wastes are not included in this listing. This listing does include residuals generated from processing or recycling oil-bearing hazardous secondary materials excluded under R 299.9204(1)(l) if those residuals are being disposed.	(T)
F038	Petroleum refinery secondary (emulsified) oil/water/solids (oil and/or water and/or solids) separation sludge-any sludge or float generated from the physical or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in induced air flotation (IAF) units and tanks and impoundments, and all sludges generated in DAF units. Sludges generated in stormwater units that do not receive dry weather flow; sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters; sludges and floats generated in aggressive biological treatment units as defined in R 299.9213(4), including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units; and F037, K048, and K051 wastes are not included in this listing.	(T)
F039	Leachate resulting from the treatment, storage, or disposal of wastes classified by more than 1 hazardous waste number pursuant to R 299.9213 and R 299.9214 or from a mixture of wastes classified pursuant to R 299.9213 and R 299.9214. Leachate resulting from the management of 1 or more of the following hazardous wastes, and no other hazardous wastes, retains its original hazardous waste number or numbers: F020, F021, F022, F023, F026, F027, or F028.	(T)

R 299.9221 Rescinded.**R 299.9222 Table 204a; hazardous wastes from specific sources.**

Rule 222. Table 204a reads as follows:

Table 204a			
Industry	EPA Hazardous Waste Number	Hazardous Waste From Specific Sources	Hazard Code
Wood Preservation	K001	Bottom sediment sludge from the treatment of wastewaters from wood-preserving processes that use creosote or pentachlorophenol, or both of these compounds	(T)
Inorganic Pigments	K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments	(T)
	K003	Wastewater treatment sludge from the production of molybdate orange pigments	(T)
	K004	Wastewater treatment sludge from the production of zinc yellow pigments	(T)
	K005	Wastewater treatment sludge from the production of chrome green pigments	(T)
	K006	Wastewater treatment sludge from the production of chrome oxide green pigments, anhydrous and hydrated forms	(T)
	K007	Wastewater treatment sludge from the production of iron blue pigments	(T)
	K008	Oven residue from the production of chrome oxide green pigments	(T)
Organic Chemicals	K009	Distillation bottoms from the production of chemicals acetaldehyde from ethylene	(T)
	K010	Distillation side cuts from the production of acetaldehyde from ethylene	(T)
	K011	Bottom stream from the wastewater stripper in the production of acrylonitrile	(R,T)

Table 204a			
Industry	EPA Hazardous Waste Number	Hazardous Waste From Specific Sources	Hazard Code
	K013	Bottom stream from the acetonitrile column in the production of acrylonitrile	(R,T)
	K014	Bottoms from the acetonitrile purification column in the production of acrylonitrile	(T)
	K015	Still bottoms from the distillation of benzyl chloride	(T)
	K016	Heavy ends or distillation residues from the production of carbon tetrachloride	(T)
	K017	Heavy ends or still bottoms from the purification column in the production of epichlorohydrin	(T)
	K018	Heavy ends from the fractionation column in ethyl chloride production	(T)
	K019	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production	(T)
	K020	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production	(T)
	K021	Aqueous spent antimony catalyst waste from fluoromethanes production	(T)
	K022	Distillation bottom tars from the production of phenol or acetone from cumene	(T)
	K023	Distillation light ends from the production of phthalic anhydride from naphthalene	(T)
	K024	Distillation bottoms from the production of phthalic anhydride from naphthalene	(T)
	K025	Distillation bottoms from the production of nitrobenzene by the nitration of benzene	(T)
	K026	Stripping still tails from the production of methyl ethyl pyridines	(T)
	K027	Centrifuge and distillation residues from toluene diisocyanate production	(R,T)
	K028	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane	(T)

Table 204a			
Industry	EPA Hazardous Waste Number	Hazardous Waste From Specific Sources	Hazard Code
	K029	Waste from the product steam stripper in the production of 1,1,1-trichloroethane	(T)
	K030	Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene	(T)
	K083	Distillation bottoms from aniline production	(T)
	K085	Distillation of fractionation column bottoms from the production of chlorobenzenes	(T)
	K093	Distillation light ends from the production of phthalic anhydride from ortho-xylene	(T)
	K094	Distillation bottoms from the production of phthalic anhydride from ortho-xylene	(T)
	K095	Distillation bottoms from the production of 1,1,1-trichloroethane	(T)
	K096	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane	(T)
	K103	Process residues from aniline extraction from the production of aniline	(T)
	K104	Combined wastewater streams generated from nitrobenzene or aniline production	(T)
	K105	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes	(T)
	K107	Column bottoms from product separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	(C,T)
	K108	Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	(I,T)
	K109	Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	(T)

Table 204a			
Industry	EPA Hazardous Waste Number	Hazardous Waste From Specific Sources	Hazard Code
	K110	Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	(T)
	K111	Product washwaters from the production of dinitrotoluene via nitration of toluene	(C,T)
	K112	Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene	(T)
	K113	Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene	(T)
	K114	Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene	(T)
	K115	Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene	(T)
	K116	Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine	(T)
	K117	Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide via bromination of ethane	(T)
	K118	Spent adsorbent solids from purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene	(T)
	K136	Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene	(T)
	K149	Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides,	(T)

Table 204a			
Industry	EPA Hazardous Waste Number	Hazardous Waste From Specific Sources	Hazard Code
		and compounds with mixtures of these functional groups. This waste does not include still bottoms from the distillation of benzyl chloride.	
	K150	Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups	(T)
	K151	Wastewater treatment sludges, excluding *neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups	(T)
	K156	Organic waste, including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates, from the production of carbamates and carbamoyl oximes. This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.	(T)
	K157	Wastewaters, including scrubber waters, condenser waters, washwaters, and separation waters, from the production of carbamates and carbamoyl oximes. This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.	(T)
	K158	Baghouse dusts and filter/separation solids from the production of carbamates and carbamoyl oximes. This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.	(T)
	K159	Organics from the treatment of thiocarbamate wastes	(T)

Table 204a			
Industry	EPA Hazardous Waste Number	Hazardous Waste From Specific Sources	Hazard Code
	K161	Purification solids, including filtration, evaporation, and centrifugation solids, bag house dust, and floor sweepings from the production of dithiocarbamates acids and their salts. This listing does not include K125 or K126.	(R,T)
	K174	Wastewater treatment sludges from the production of ethylene dichloride or vinyl chloride monomer, including sludges that result from commingled ethylene dichloride or vinyl chloride monomer wastewater and other wastewater, unless the sludges meet the following conditions: (1) they are disposed of in a hazardous waste landfill or a nonhazardous waste landfill licensed or permitted by the state or federal government, (2) they are not otherwise placed on the land before final disposal, and (3) the generator maintains documentation demonstrating that the waste was either disposed of in an on-site landfill or consigned to a transporter or disposal facility that provided a written commitment to dispose of the waste in an off-site landfill. Respondents in any action brought to enforce the requirements of RCRA or part 111 of the act must, upon a showing by the government that the respondent managed wastewater treatment sludges from the production of vinyl chloride monomer or ethylene dichloride, demonstrate that they meet the terms of the exclusion set forth herein. In doing so, they must provide appropriate documentation, such as contracts between the generator and the landfill owner/operator or invoices documenting delivery of the waste to the landfill, that the terms of the exclusion were met.	(T)
	K175	Wastewater treatment sludges from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process	(T)

Table 204a			
Industry	EPA Hazardous Waste Number	Hazardous Waste From Specific Sources	Hazard Code
	K181	<p>Nonwastewaters from the production of dyes or pigments, including nonwastewaters commingled at the point of generation with nonwastewaters from other processes, that, at the point of generation, contain mass loadings of any of the K181 listing constituents identified in 40 C.F.R. §261.32(c) that are equal to or greater than the listing levels identified in 40 C.F.R. §261.32(c), as determined on a calendar year basis. These wastes shall not be considered hazardous if the nonwastewaters are managed in compliance with the requirements for this listing as outlined in of 40 C.F.R. §261.32(a). For the purposes of this listing, dyes or pigments production is defined to include manufacture of the following product classes: dyes, pigments, or federal food and drug administration certified colors that are classified as azo, triarylmethane, perylene, or anthraquinone classes. Azo products include azo, monoazo, diazo, triazo, polyazo, azoic, benzidine, and pyrazolone products. Triarylmethane products include both triarylmethane and triphenylmethane products. Wastes that are not generated at a dyes or pigments manufacturing site, such as wastes from the offsite use, formulation, and packaging of dyes or pigments, are not included in this listing. The process for demonstrating that a facility's nonwastewaters are not K181 is contained in 40 C.F.R. §261.32(d). This K181 listing does not apply to wastes that are otherwise identified as hazardous waste under R 299.9212, R 299.9217, R 299.9220, R 299.9222, R 299.9224, or R 299.9225 at the point of generation. Also, the listing does not apply to the wastes generated before any annual mass loading limit is met.</p>	(T)
Inorganic	K071	Brine purification muds from the mercury cell process in chlorine production, where	(T)

Table 204a			
Industry	EPA Hazardous Waste Number	Hazardous Waste From Specific Sources	Hazard Code
Chemicals		separately prepurified brine is not used	
	K073	Chlorinated hydrocarbon wastes from the purification step of the diaphragm cell process using graphite anodes in chlorine production	(T)
	K106	Wastewater treatment sludge from the mercury cell process in chlorine production	(T)
	K176	Baghouse filters from the production of antimony oxide, including filters from the production of intermediates	(E)
	K177	Slag from the production of antimony oxide that is speculatively accumulated or disposed, including slag from the production of intermediates	(T)
	K178	Residues from manufacturing and manufacturing-site storage of ferric chloride from acids formed during the production of titanium dioxide using the chloride-ilmenite process	(T)
Pesticides	K031	By-product salts generated in the production of MSMA and cacodylic acid	(T)
	K032	Wastewater treatment sludge from the production of chlordane	(T)
	K033	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane	(T)
	K034	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane	(T)
	K035	Wastewater treatment sludges generated in the production of creosote	(T)
	K036	Still bottoms from toluene reclamation distillation in the production of disulfoton	(T)
	K037	Wastewater treatment sludges from the production of disulfoton	(T)
	K038	Wastewater from the washing and stripping of	(T)

Table 204a			
Industry	EPA Hazardous Waste Number	Hazardous Waste From Specific Sources	Hazard Code
		phorate production	
	K039	Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate	(T)
	K040	Wastewater treatment sludge from the production of phorate	(T)
	K041	Wastewater treatment sludge from the production of toxaphene	(T)
	K042	Heavy ends of distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T	(T)
	K043	2,6-Dichlorophenol waste from the production of 2,4-D	(T)
	K097	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane	(T)
	K098	Untreated process wastewater from the production of toxaphene	(T)
	K099	Untreated wastewater from the production of 2,4-D	(T)
	K123	Process wastewater, including supernates, filtrates, and washwaters, from the production of ethylenebisdithiocarbamic acid and its salt	(T)
	K124	Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salt	(C,T)
	K125	Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salt	(T)
	K126	Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylenebisdithiocarbamic acid and its salts	(T)
	K131	Wastewater from the reactor and spent sulfuric acid from the acid dryer from the production of methyl bromide	(C,T)

Table 204a			
Industry	EPA Hazardous Waste Number	Hazardous Waste From Specific Sources	Hazard Code
	K132	Spent absorbent and wastewater separator solids from the production of methyl bromide	(T)
Explosives	K044	Wastewater treatment sludges from the manufacturing and processing of explosives	(I)
	K045	Spent carbon from the treatment of wastewater containing explosives	(I)
	K046	Wastewater treatment sludges from the manufacturing, formulation, and loading of lead-based initiating compounds	(T)
	K047	Pink or red water from TNT operations	(I)
Petroleum Refining	K048	Dissolved air floatation, DAF, float from the petroleum refining industry	(T)
	K049	Slop oil emulsion solids from the petroleum refining industry	(T)
	K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry	(T)
	K051	API separator sludge from the petroleum refining industry	(T)
	K052	Tank bottoms, leaded, from the petroleum refining industry	(T)
	K169	Crude oil storage tank sediment from petroleum refining operations	(T)
	K170	Clarified slurry oil tank sediment and/or in-line filter/separation solids from petroleum refining operations	(T)
	K171	Spent hydrotreating catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors. This listing does not include inert support media.	(I, T)
	K172	Spent hydrorefining catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors. This listing does not include inert support	(I, T)

Table 204a			
Industry	EPA Hazardous Waste Number	Hazardous Waste From Specific Sources	Hazard Code
		media.	
Iron and Steel	K061	Emission control dust or sludge from the primary production of steel in electric furnaces	(T)
	K062	Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry	(C,T)
Primary Aluminum	K088	Spent potliners from primary aluminum reduction	(T)
Secondary Lead	K069	Emission control dust or sludge from secondary lead smelting. (This listing is stayed administratively for sludge generated from secondary acid scrubber systems. The stay will remain in effect until further action is taken by the EPA and notice published in the Federal Register.)	(T)
	K100	Waste leaching solution from acid leaching of emission control dust sludge from secondary lead smelting	(T)
Veterinary Pharmaceuticals	K084	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds	(T)
	K101	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds	(T)
	K102	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds	(T)
Ink Formulation	K086	Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead	(T)

Table 204a			
Industry	EPA Hazardous Waste Number	Hazardous Waste From Specific Sources	Hazard Code
Coking	K060	Ammonia still lime sludge from coking operations	(T)
	K087	Decanter tank tar sludge from coking operations	(T)
	K141	Process residues from the recovery of coal tar, including, but not limited to, collecting sump residues from the production of coke from coal or the recovery of coke by-products produced from coal. This listing does not include K087.	(T)
	K142	Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal	(T)
	K143	Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal	(T)
	K144	Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal	(T)
	K145	Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal	(T)
	K147	Tar storage tank residues from coal tar refining	(T)
	K148	Residues from coal tar distillation, including, but not limited to, still bottoms	(T)

R 299.9223 Rescinded.

R 299.9224 Table 205a; discarded commercial chemical products; off-specification species; container residues; and spill residues thereof as acutely hazardous wastes.

Rule 224. Table 205a reads as follows:

Table 205a

EPA Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
P023	107-20-0	Acetaldehyde, chloro-	
P002	591-08-2	Acetamide, N-(aminothioxomethyl)-	
P057	640-19-7	Acetamide, 2-fluoro-	
P058	62-74-8	Acetic acid, fluoro-, sodium salt	
P002	591-08-2	1-Acetyl-2-thiourea	
P003	107-02-8	Acrolein	
P070	116-06-3	Aldicarb	
P203	1646-88-4	Aldicarb sulfone	
P004	309-00-2	Aldrin	
P005	107-18-6	Allyl alcohol	
P006	20859-73-8	Aluminum phosphide	(R,T,)
P007	2763-96-4	5-(Aminomethyl)-3-isoxazolol	
P008	504-24-5	4-Aminopyridine	
P009	131-74-8	Ammonium picrate	(R)
P119	7803-55-6	Ammonium vanadate	
P099	506-61-6	Argentate (1-), bis(cyano-C)-, potassium	
P010	7778-39-4	Arsenic acid	
P012	1327-53-3	Arsenic (III) oxide	
P011	1303-28-2	Arsenic (V) oxide or arsenic pentoxide	
P012	1327-53-3	Arsenic trioxide	
P038	692-42-2	Arsine, diethyl-	
P036	696-28-6	Arsonous dichloride, phenyl-	
P054	151-56-4	Aziridine	
P067	75-55-8	Aziridine, 2-methyl-	
P013	542-62-1	Barium cyanide	
P024	106-47-8	Benzenamine, 4-chloro-	
P077	100-01-6	Benzenamine, 4-nitro-	
P028	100-44-7	Benzene, (chloromethyl)-	
P042	51-43-4	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-	(R)
P046	122-09-2	Benzeneethanamine, alpha, alpha-dimethyl-	
P014	108-98-5	Benzenethiol	
P127	1563-66-2	7-benzofuranol, 2,3-dihydro-2,2-dimethyl-, methoycarbamate	
P188	57-64-7	Benzoic acid, 2-hydroxy-, compd. with (3aS-cis) - 1,2,3,3a,8,8a-hexahydro-1,3a,8- trimethylpyrrolo [2,3-b] indol-5-yl methylcarbamate ester (1:1)	
P001	81-81-2	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, and salts, when present at concentrations greater than 0.3%	
P028	100-44-7	Benzyl chloride	
P015	7440-41-7	Beryllium powder	

Table 205a			
EPA Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
P017	598-31-2	Bromoacetone	
P018	357-57-3	Brucine	
P045	39196-18-4	2-Butanone, 3,3-dimethyl-1-(methylthio)-, O-[(methylamino) carbonyl] oxime	
P021	592-01-8	Calcium cyanide or calcium cyanide $\text{Ca}(\text{CN})_2$	
P189	55285-14-8	Carbamic acid, [(dibutylamino)-thio]methyl-, 2,3-dihydro-2,2-dimethyl-7-benzofuranyl ester	
P191	644-64-4	Carbamic acid, dimethyl-, 1-[(dimethyl-amino)carbonyl]-5-methyl-1H-pyrazol-3-yl ester	
P192	119-38-0	Carbamic acid, dimethyl-, 3-methyl-1-(1-methylethyl)-1H-pyrazol-5-yl ester	
P190	1129-41-5	Carbamic acid, methyl-, 3-methylphenyl ester	
P127	1563-66-2	Carbofuran	
P022	75-15-0	Carbon disulfide	
P095	75-44-5	Carbonyl chloride	
P189	55285-14-8	Carbosulfan	
P023	107-20-0	Chloroacetaldehyde	
P024	106-47-8	p-Chloroaniline	
P026	5344-82-1	1-(o-Chlorophenyl)thiourea	
P027	542-76-7	3-Chloropropionitrile	
P029	544-92-3	Copper cyanide or copper cyanide $\text{Cu}(\text{CN})$	
P202	64-00-6	m-Cumenyl methylcarbamate	
P030	-----	Cyanides (soluble cyanide salts), not elsewhere specified	
P031	460-19-5	Cyanogen	
P033	506-77-4	Cyanogen chloride or cyanogen chloride $(\text{CN})\text{C}_1$	
P034	131-89-5	2-Cyclohexyl-4,6-dinitrophenol	
P016	542-88-1	Dichloromethyl ether	
P036	696-28-6	Dichlorophenylarsine	
P037	60-57-1	Dieldrin	
P038	692-42-2	Diethylarsine	
P041	311-45-5	Diethyl-p-nitrophenyl phosphate	
P040	297-97-2	0,0-Diethyl 0-pyrazinyl phosphorothioate	
P043	55-91-4	Diisopropyl fluorophosphate	
P004	309-00-2	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4abeta,5alpha,8alpha,8abeta)-	
P060	465-73-6	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4abeta,5beta,8beta,8abeta)-	
P037	60-57-1	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-	

Table 205a			
EPA Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
		hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2alpha,3beta,6beta,6alpha,7beta,7alpha)-	
P051	72-20-8	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2alpha,3alpha,6alpha,6beta,7beta,7alpha)-, & metabolites	
P044	60-51-5	Dimethoate	
P046	122-09-8	alpha,alpha-Dimethylphenethylamine	
P191	644-64-4	Dimetilan	
P047	534-52-1	4,6-Dinitro-o-cresol and salts	
P048	51-28-5	2,4-Dinitrophenol	
P020	88-85-7	Dinoseb	
P085	152-18-9	Diphosphoramidate, octamethyl-	
P111	107-49-3	Diphosphoric acid, tetraethyl ester	
P039	298-04-4	Disulfoton	
P049	541-53-7	2,4-Dithiobiuret	
P185	26419-73-8	1,3-Dithiolane-2-carboxaldehyde, 2-4-dimethyl-, O-[(methylamino)- carbonyl]oxime	
P050	115-29-7	Endosulfan	
P088	145-73-7	Endothall	
P051	72-20-8	Endrin, and metabolites	
P042	51-43-4	Epinephrine	
P031	460-19-5	Ethanedinitrile	
P194	23135-22-0	Ethanimidothioic acid, 2-(dimethylamino)-N-[[[(methylamino) carbonyl]oxy]-2-oxo-, methyl ester	
P066	16752-77-5	Ethanimidothioic acid, N-[[[(methylamine)carbonyl] oxyl]-, methyl ester	
P101	107-12-0	Ethyl cyanide	
P054	151-58-4	Ethyleneimine	
P097	52-85-7	Famphur	
P056	7782-41-4	Fluorine	
P057	640-19-7	Fluoroacetamide	
P058	62-74-8	Fluoroacetic acid, sodium salt	
P198	23422-53-9	Formetanate hydrochloride	
P197	17702-57-7	Formparanate	
P065	628-86-4	Fulminic acid, mercury (II) salt	(R,T)
P059	76-44-8	Heptachlor	
P062	757-58-4	Hexaethyl tetraphosphate	
P116	79-19-6	Hydrazinecarbothioamide	

Table 205a			
EPA Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
P068	60-34-4	Hydrazine, methyl-	
P063	74-90-8	Hydrocyanic acid or hydrogen cyanide	
P096	7803-51-2	Hydrogen phosphide	
P060	465-73-6	Isodrin	
P192	119-38-0	Isolan	
P202	64-00-6	3-Isopropylphenyl N-methylcarbamate	
P007	2763-96-4	3(2H)-Isoxazolone, 5-(aminomethyl)-	
P196	15339-36-3	Manganese, bis(dimethylcarbamodithioato-S,S'), or manganese, dimethyldithiocarbamate	
P092	62-38-4	Mercury, (acetato-O)phenyl-	
P065	628-86-4	Mercury fulminate	(R,T)
P082	62-75-9	Methanamine, N-methyl-N-nitroso-	
P064	624-83-9	Methane, isocyanato-	
P016	542-88-1	Methane, oxybis(chloro-	
P112	509-14-8	Methane, tetranitro-	(R)
P118	75-70-7	Methanethiol, trichloro-	
P198	23422-53-9	Methanimidamide, N,N-dimethyl-N'-[3-[[[(methylamino)carbonyl]oxy]phenyl]-, monohydrochloride	
P197	17702-57-7	Methanimidamide, N,N-dimethyl-N'-[2-methyl-4-[[[(methylamino)carbonyl]oxy]phenyl]-	
P050	115-20-7	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide	
P059	76-44-8	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-	
P199	2032-65-7	Methiocarb	
P066	16752-77-5	Methomyl	
P068	60-34-4	Methyl hydrazine	
P064	624-83-9	Methyl isocyanate	
P069	75-86-5	2-Methylactonitrile	
P071	298-00-0	Methyl parathion	
P190	1129-41-5	Metolcarb	
P128	315-18-4	Mexacarbate	
P072	86-88-4	alpha-Naphthylthiourea	
P073	13463-39-3	Nickel carbonyl or nickel carbonyl Ni(CO) ₄ , (T-4)-	
P074	557-19-7	Nickel cyanide or nickel (II) cyanide	
P075	54-11-5	Nicotine and salts	
P076	10102-43-9	Nitric oxide	
P077	100-01-6	p-Nitroaniline	
P078	10102-44-0	Nitrogen dioxide or nitrogen (IV) oxide	
P076	10102-43-9	Nitrogen (II) oxide	

Table 205a			
EPA Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
P081	55-63-0	Nitroglycerine	(R)
P082	62-75-9	N-Nitrosodimethylamine	
P084	4549-40-0	N-Nitrosomethylvinylamine	
P085	152-16-9	Octamethylpyrophosphor-amide	
P087	20816-12-0	Osmium oxide or osmium tetroxide	
P088	145-73-3	7-Oxabicyclo [2.2.1] heptane-2,3-dicarboxylic acid	
P194	23135-22-0	Oxamyl	
P089	56-38-2	Parathion	
P034	131-89-5	Phenol, 2-cyclohexyl-4,6-dinitro-	
P128	315-18-4	Phenol, 4-(dimethylamino)-3,5-dimethyl-, methylcarbamate (ester)	
P199	2032-65-7	Phenol, (3,5-dimethyl-4-(methylthio)-, methylcarbamate	
P048	51-28-5	Phenol, 2,4-dinitro-	
P047	534-52-1	Phenol, 2-methyl-4,6-dinitro- and salts	
P202	64-00-6	Phenol, 3-(1-methylethyl)-, methyl carbamate	
P201	2631-37-0	Phenol, 3-methyl-5-(1-methylethyl)-, methyl carbamate	
P020	88-85-7	Phenol, 2,4-dinitro-6-(1-methylpropyl)-	
P009	131-74-8	Phenol, 2,4,6-trinitro-, ammonium salt	(R)
P092	62-38-4	Phenylmercuric acetate	
P093	103-85-5	N-Phenylthiourea	
P094	298-02-2	Phorate	
P095	75-44-5	Phosgene	
P096	783-51-2	Phosphine	
P041	311-45-5	Phosphoric acid, diethyl p-nitrophenyl ester	
P039	298-04-4	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl] ester	
P094	298-02-2	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio) methyl] ester	
P044	60-51-5	Phosphorodithioic acid, O,O-dimethyl S-O[2-(methylamino)-2-oxoethyl] ester	
P043	55-91-4	Phosphorofluoridic acid, bis(1-methylethyl)ester	
P089	56-38-2	Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester	
P040	297-97-2	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester	
P097	52-85-7	Phosphorothioic acid, O,O-dimethyl O-[p-((dimethylamino) sulfonyl)phenyl] ester	
P071	298-00-0	Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester	
P204	57-47-6	Physostigmine	
P188	57-64-7	Physostigmine salicylate	
P110	78-00-2	Plumbane, tetraethyl-	
P098	151-50-8	Potassium cyanide or potassium cyanide K(CN)	

Table 205a			
EPA Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
P099	506-61-6	Potassium silver cyanide	
P201	2631-37-0	Promecarb	
P203	1646-88-4	Propanal, 2-methyl-2-(methyl-sulfonyl)-, O-[(methylamino)carbonyl] oxime	
P070	116-06-3	Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl] oxime	
P101	107-12-0	Propanenitrile	
P027	542-76-7	Propanenitrile, 3-chloro-	
P069	75-86-5	Propanenitrile, 2-hydroxy-2-methyl-	
P081	55-63-0	1,2,3-Propanetriol, trinitrate-	(R)
P017	596-31-2	2-Propanone, 1-bromo-	
P102	107-19-7	Propargyl alcohol	
P003	107-02-8	2-Propenal	
P005	107-18-6	2-Propen-1-ol	
P067	75-55-8	1,2-Propylenimine	
P102	107-19-7	2-Propyn-1-ol	
P008	504-24-5	4-Pyridinamine	
P075	54-11-5	Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-, and salts	
P204	57-47-6	Pyrrolo[2,3-b]indol-5-ol, 1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethyl-, methylcarbamate (ester), (3aS-cis)-	
P114	12039-52-0	Selenious acid, dithallium(1+) salt	
P103	630-10-4	Selenourea	
P104	506-64-9	Silver cyanide or silver cyanide Ag(CN)	
P105	26628-22-8	Sodium azide	
P106	143-33-9	Sodium cyanide or sodium cyanide Na(CN)	
P108	57-24-9	Strychnidin-10-one, and salts, or strychnine and salts	
P018	357-57-3	Strychnidin-10-one, 2,3-dimethoxy-	
P115	7446-18-6	Sulfuric acid, thallium (I) salt	
P109	3689-24-5	Tetraethyldithiopyrophosphate	
P110	78-00-2	Tetraethyl lead	
P111	107-49-3	Tetraethylpyrophosphate	
P112	509-14-8	Tetranitromethane	(R)
P062	757-58-4	Tetraphosphoric acid, hexaethyl ester	
P113	1314-32-5	Thallic oxide or thallium (III) oxide	
P114	12039-52-0	Thallium (I) selenide	
P115	7446-18-6	Thallium (I) sulfate	
P109	3689-24-5	Thiodiphosphoric acid, tetraethyl ester	
P045	39196-18-4	Thiofanox	
P049	541-53-7	Thioimidodicarbonic diamide	
P014	108-98-5	Thiophenol	

Table 205a			
EPA Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
P116	79-19-6	Thiosemicarbazide	
P026	5344-82-1	Thiourea, (2-chlorophenyl)-	
P072	86-88-4	Thiourea, 1-naphthalenyl-	
P093	103-85-5	Thiourea, phenyl-	
P185	26419-73-8	Tirpate	
P123	8001-35-2	Toxaphene	
P118	75-70-7	Trichloromethanethiol	
P119	7803-55-6	Vanadic acid, ammonium salt	
P120	1314-62-1	Vanadium (V) oxide or vanadium pentoxide	
P084	4549-40-0	Vinylamine, N-methyl-N-nitroso-	
P001	81-81-2	Warfarin, when present at concentrations greater than 0.3%	
P205	137-30-4	Zinc, bis(dimethylcarbamodithioato-S,S')-	
P121	557-21-1	Zinc cyanide or zinc cyanide Zn(CN) ₂	
P122	1314-84-7	Zinc phosphide, when present at concentrations greater than 10%	(R,T)
P205	137-30-4	Ziram	

R 299.9225 Table 205b; discarded commercial chemical products; off-specification species; container residues; and spill residues thereof as toxic hazardous wastes.

Rule 225. Table 205b reads as follows:

Table 205b			
EPA Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
U394	30558-43-1	A2213	
U001	75-07-0	Acetaldehyde	(I)
U034	75-87-6	Acetaldehyde, trichloro-	
U187	62-44-2	Acetamide, N-(4-ethoxyphenyl)-	
U005	53-96-3	Acetamide, N-9H-fluoren-2-yl-	

Table 205b			
EPA Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
U240	94-75-7	Acetic acid, (2,4-dichlorophenoxy)-, salts and esters	
U112	141-78-6	Acetic acid, ethyl ester	(I)
U144	301-04-2	Acetic acid, lead(2+) salt	
U214	563-68-8	Acetic acid, thallium(1+) salt	
See F027	93-76-5	Acetic acid, (2,4,5-trichlorophenoxy)-	
U002	67-64-1	Acetone	(I)
U003	75-05-8	Acetonitrile	(I,T)
U004	98-86-2	Acetophenone	
U005	53-96-3	2-Acetylaminofluorene	
U006	75-36-5	Acetyl chloride	(C,R,T)
U007	79-06-1	Acrylamide	
U008	79-10-7	Acrylic acid	(I)
U009	107-13-1	Acrylonitrile	
U011	61-82-5	Amitrole	
U012	62-53-3	Aniline	(I,T)
U136	75-60-5	Arsinic acid, dimethyl-	
U014	492-80-8	Auramine	
U015	115-02-6	Azaserine	
U010	50-07-7	Azirino(2',3':3,4)pyrrolo (1,2-a)indole-4,7-dione,6-amino-8-[(aminocarbonyl)oxy methyl]-1,1a,2,8,8a,8b hexahydro-8a-methoxy-5-methyl-	
U280	101-27-9	Barban	
U278	22781-23-3	Bendiocarb	
U364	22961-82-6	Bendiocarb phenol	
U271	17804-35-2	Benomyl	
U157	56-49-5	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-	
U016	225-51-4	Benz[c]acridine	
U017	98-87-3	Benzal chloride	
U192	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-	
U018	56-55-3	Benz[a]anthracene	
U094	57-97-6	1,2-Benzanthracene, 7,12-dimethyl-	
U012	62-53-3	Benzenamine	(I,T)
U014	492-80-8	Benzenamine, 4,4'-carbonimidoylbis(N,N-dimethyl-	
U049	3165-93-3	Benzenamine, 4-chloro-2-methyl-	
U093	60-11-7	Benzenamine, N,N-dimethyl-4-(phenylazo)-	
U328	95-53-4	Benzenamine, 2-methyl-	
U353	106-49-0	Benzenamine, 4-methyl-	
U158	101-14-4	Benzenamine, 4,4'-methylenebis(2-chloro-	
U222	636-21-5	Benzenamine, 2-methyl-, hydrochloride	

Table 205b			
EPA Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
U181	99-55-8	Benzenamine, 2-methyl-5-nitro	
U019	71-43-2	Benzene	(I,T)
U038	510-15-8	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy, ethyl ester	
U030	101-55-3	Benzene, 1-bromo-4-phenoxy-	
U035	305-03-03	Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]-	
U037	106-90-7	Benzene, chloro-	
U221	25376-45-8	Benzenediamine, ar-methyl-	
U028	117-81-7	1,2-Benzenedicarboxylic acid, [bis(2-ethyl-hexyl)] ester	
U069	84-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester	
U088	84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester	
U102	131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester	
U107	117-84-0	1,2-Benzenedicarboxylic acid, di-n-octyl ester	
U070	95-50-1	Benzene, 1,2-dichloro-	
U071	541-73-1	Benzene, 1,3-dichloro-	
U072	106-46-7	Benzene, 1,4-dichloro-	
U060	72-54-8	Benzene, 1,1'-(2,2-dichloroethylidene)bis=[4-chloro-	
U017	98-87-3	Benzene (dichloromethyl)-	
U223	26471-62-5	Benzene, 1,3-diisocyanatomethyl-	(R,T)
U239	1330-20-7	Benzene, dimethyl-	(I,T)
U201	108-46-3	1,3-Benzenediol	
U127	118-74-1	Benzene, hexachloro-	
U056	110-82-7	Benzene, hexahydro-	(I)
U220	108-88-3	Benzene, methyl-	
U105	121-14-2	Benzene, 1-methyl-2,4-dinitro-	
U106	606-20-2	Benzene, 1-methyl-2,6-dinitro-	
U055	98-82-8	Benzene, (1-methylethyl)-	(I)
U169	98-95-3	Benzene, nitro-	(I,T)
U183	608-93-5	Benzene, pentachloro-	
U185	82-68-8	Benzene, pentachloronitro-	
U020	98-09-9	Benzenesulfonic acid chloride or benzenesulfonyl chloride	(C,R)
U207	95-94-3	Benzene, 1,2,4,5-tetrachloro-	
U061	50-29-3	Benzene, 1,1'-(2,2,2-trichloroethylidene)=bis [4-chloro-	
U247	72-43-5	Benzene, 1,1'-(2,2,2-trichloroethylidene)=bis [4-methoxy-	
U023	98-07-7	Benzene, (trichloromethyl)-	(C,R,T)
U234	99-35-4	Benzene, 1,3,5-trinitro-	(R,T)
U021	92-87-5	Benzidine	
U202	81-07-2	1,2-Benzisothiazol-3-(2H)-one, 1,1-dioxide and salts	

Table 205b			
EPA Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
U278	22781-23-3	1,3-Benzodioxol-4-ol, 2,2-dimethyl-, methyl carbamate	
U364	22961-82-6	1,3-Benzodioxol-4-ol, 2,2-dimethyl-,	
U203	94-59-7	1,3-Benzodioxole, 5-(2-propenyl)-	
U141	120-58-1	1,3-Benzodioxole, 5-(1-propenyl)-	
U090	94-58-6	1,3-Benzodioxole, 5-propyl-	
U367	1563-38-8	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-	
U064	189-55-9	Benzo[rst]pentaphene	
U248	81-81-2	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, and salts, when present at concentrations of 0.3% or less	
U022	50-32-8	Benzo[a]pyrene	
U197	106-51-4	p-Benzoquinone	
U023	98-07-7	Benzo[trichloride	(C,R,T)
U085	1464-53-5	2,2'-Bioxirane	(I,T)
U021	92-87-5	(1,1'-Biphenyl)-4,4'-diamine	
U073	91-94-1	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dichloro-	
U091	119-90-4	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dimethoxy-	
U095	119-93-7	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dimethyl-	
U225	75-25-2	Bromoform	
U030	101-55-3	4-Bromophenyl phenyl ether	
U128	87-68-3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-	
U172	924-16-3	1-Butanamine, N-butyl-N-nitroso-	
U031	71-36-3	1-Butanol	(I)
U159	78-93-3	2-Butanone	(I,T)
U160	1338-23-4	2-Butanone peroxide	(R,T)
U053	4170-30-3	2-Butenal	
U074	764-41-0	2-Butene, 1,4-dichloro-	(I,T)
U143	303-34-4	2-Butenoic acid, 2-methyl-, 7-[[2,3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1-oxybutoxy]methyl]-2,3,5,7a-tetrahydro-1H-pyrrolizin-1-yl ester, [1S-[1alpha(Z),7(2S*,3R*), 7aalpha]]-	
U031	71-36-3	n-Butyl alcohol	(I)
U136	75-60-5	Cacodylic acid	
U032	13765-19-0	Calcium chromate	
U372	10605-21-7	Carbamic acid, 1H-benzimidazol-2-yl, methyl ester	
U271	17804-35-2	Carbamic acid, [1-[(butylamino)carbonyl]-1H-benzimidazol-2-yl]-, methyl ester	
U280	101-27-9	Carbamic acid, (3-chlorophenyl)-, 4-chloro-2-butynyl ester	
U238	51-79-6	Carbamic acid, ethyl ester	
U178	815-53-2	Carbamic acid, methylnitroso-, ethyl ester	

Table 205b			
EPA Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
U373	122-42-9	Carbamic acid, phenyl-, 1-methylethyl ester	
U409	23564-05-8	Carbamic acid, [1,2-phenylenebis(iminocarbonothioyl)]bis-, dimethyl ester	
U097	79-44-7	Carbamic chloride, dimethyl	
U114	111-54-6	Carbamodithioic acid, 1,2-ethanediybis-, salts and esters	
U062	2303-16-4	Carbamodithioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester	
U389	2303-17-5	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3,3-trichloro-2-propenyl) ester	
U387	52888-80-9	Carbamothioic acid, dipropyl-, S-(phenylmethyl) ester	
U279	63-25-2	Carbaryl	
U372	10605-21-7	Carbendazim	
U367	1563-38-8	Carbofuran phenol	
U215	6533-73-9	Carbonic acid, dithallium(1+) salt	
U156	79-22-1	Carbonochloridic acid, methyl ester	(I,T)
U033	353-50-4	Carbon oxyfluoride	(R,T)
U211	56-23-5	Carbon tetrachloride	
U034	75-87-6	Chloral	
U035	305-03-3	Chlorambucil	
U036	57-74-9	Chlordane, technical	
U026	494-03-1	Chlornaphazine	
U037	108-90-7	Chlorobenzene	
U038	510-15-6	Chlorobenzilate	
U039	59-50-7	4-Chloro-m-cresol	
U042	110-75-8	2-Chloroethyl vinyl ether	
U044	67-66-3	Chloroform	
U046	107-30-2	Chloromethyl methyl ether	
U047	91-58-7	beta-Chloronaphthalene	
U048	95-57-8	o-Chlorophenol	
U049	3165-93-3	4-Chloro-o-toluidine, hydrochloride	
U032	13765-19-0	Chromic acid, calcium salt	
U050	218-01-9	Chrysene	
U051	-----	Creosote	
U052	1319-77-3	Cresylic acid	
U053	4170-30-3	Crotonaldehyde	
U055	98-82-8	Cumene	(I)
U246	506-68-3	Cyanogen bromide	
U197	106-51-4	1,4-Cyclohexadienedione	
U056	110-82-7	Cyclohexane	(I)
U129	58-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,	

Table 205b			
EPA Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
		2alpha,3beta,4alpha, 5alpha,6beta)-	
U057	108-94-1	Cyclohexanone	(I)
U130	77-47-4	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexa-chloro-	
U058	50-18-0	Cyclophosphamide	
U240	94-75-7	2,4-D, salts and esters	
U059	20830-81-3	Daunomycin	
U060	72-54-8	DDD	
U061	50-29-3	DDT	
U062	2303-16-4	Diallate	
U063	53-70-3	Dibenz[a,h]anthracene	
U064	189-55-9	Dibenz[a,i]pyrene	
U066	96-12-8	1,2-Dibromo-3-chloropropane	
U069	84-74-2	Dibutyl phthalate	
U070	95-50-1	o-Dichlorobenzene	
U071	541-73-1	m-Dichlorobenzene	
U072	106-46-7	p-Dichlorobenzene	
U073	91-94-1	3,3'-Dichlorobenzidine	
U074	764-41-0	1,4-Dichloro-2-butene	(I,T)
U075	75-71-8	Dichlorodifluoromethane	
U078	75-35-4	1,1-Dichloroethylene	
U079	156-60-5	1,2-Dichloroethylene	
U025	111-44-4	Dichloroethyl ether	
U027	108-60-1	Dichloroisopropyl ether	
U024	111-91-7	Dichloromethoxy ethane	
U081	120-83-2	2,4-Dichlorophenol	
U082	87-65-0	2,6-Dichlorophenol	
U084	542-75-6	1,3-Dichloropropene	
U085	1464-53-5	1,2:3,4-Diepoxybutane	(I,T)
U108	123-91-1	1,4-Diethylene dioxide	
U395	5952-26-1	Diethylene glycol, dicarbamate	
U028	117-81-7	Diethylhexyl phthalate	
U086	1615-80-1	N,N-Diethylhydrazine	
U087	3288-58-2	O,O-Diethyl-S-methyl-dithiophosphate	
U088	84-66-2	Diethyl phthalate	
U089	56-53-1	Diethylstilbestrol	
U090	94-58-6	Dihydrosafrole	
U091	119-90-4	3,3'-dimethoxybenzidine	
U092	124-40-3	Dimethylamine	(I)
U093	60-11-7	Dimethylaminoazobenzene	

Table 205b			
EPA Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
U094	57-97-6	7,12-Dimethylbenz[a]anthracene	
U095	119-93-7	3,3'-Dimethylbenzidine	
U096	80-15-9	Alpha,alpha-Dimethyl-benzylhydroperoxide	(R)
U097	79-44-7	Dimethylcarbamoyl chloride	
U098	57-14-7	1,1-Dimethylhydrazine	
U099	540-73-8	1,2-Dimethylhydrazine	
U101	105-67-9	2,4-Dimethylphenol	
U102	131-11-3	Dimethyl phthalate	
U103	77-78-1	Dimethyl sulfate	
U105	121-14-2	2,4-Dinitrotoluene	
U106	606-20-2	2,6-Dinitrotoluene	
U107	117-84-0	Di-n-octyl phthalate	
U108	123-91-1	1,4-Dioxane	
U109	122-66-7	1,2-Diphenylhydrazine	
U110	142-84-7	Dipropylamine	(I)
U111	621-64-7	Di-n-propylnitrosamine	
U041	106-89-8	Epichlorhydrin	
U001	75-07-0	Ethanal	(I)
U174	55-18-5	Ethanamine, N-ethyl-N-nitroso-	
U404	121-44-8	Ethanamine, N,N-diethyl-	
U155	91-80-5	1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-	
U067	106-93-4	Ethane, 1,2-dibromo-	
U076	75-34-3	Ethane, 1,1-dichloro-	
U077	107-06-2	Ethane, 1,2-dichloro-	
U131	67-72-1	Ethane, 1,1,1,2,2,2-hexachloro-	
U024	111-91-1	Ethane, 1,1'-[methylenebis(oxy)]bis[2-chloro-	
U117	60-29-7	Ethane, 1,1'-oxybis-	(I)
U025	111-44-4	Ethane, 1,1'-oxybis[2-chloro-	
U184	76-01-7	Ethane, pentachloro-	
U208	630-20-6	Ethane, 1,1,1,2-tetrachloro-	
U209	79-34-5	Ethane, 1,1,2,2-tetrachloro-	
U218	62-55-5	Ethanethioamide	
U226	71-55-6	Ethane, 1,1,1-trichloro-	
U227	79-00-5	Ethane, 1,1,2-trichloro-	
U410	59669-26-0	Ethanimidothioic acid, N,N'-[thiobis[(methylimino)carbonyloxy]]bis-, dimethyl ester	
U394	30558-43-1	Ethanimidothioic acid, 2-(dimethylamino)-n-hydroxy-2-oxo- methyl ester	
U359	110-80-5	Ethanol, 2-ethoxy-	

Table 205b			
EPA Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
U173	1116-54-7	Ethanol, 2,2'-(nitrosoimino)bis-	
U395	5952-26-1	Ethanol, 2,2'-oxybis-, dicarbamate	
U004	98-86-2	Ethanone, 1-phenyl	
U043	75-01-4	Ethene, chloro-	
U042	110-75-8	Ethene, 2-chloroethoxy-	
U078	75-35-4	Ethene, 1,1-dichloro-	
U079	156-60-5	Ethene, trans-1,2-dichloro-	
U210	127-18-4	Ethene, 1,1,2,2-tetrachloro-	
U228	79-01-6	Ethene, trichloro-	
U112	141-78-8	Ethyl acetate	(I)
U113	140-88-5	Ethyl acrylate	(I)
U238	51-79-6	Ethyl carbamate (urethan)	
U117	60-29-7	Ethyl ether	(I)
U114	111-54-6	Ethylenebis(dithiocarbamic acid), salts and ester	
U067	106-93-4	Ethylene dibromide	
U077	107-06-2	Ethylene dichloride	
U359	110-80-5	Ethylene glycol monoethyl ether	
U115	75-21-8	Ethylene oxide	(I,T)
U116	96-45-7	Ethylene thiourea	
U076	75-34-3	Ethylidene dichloride	
U118	97-63-2	Ethyl methacrylate	
U119	62-50-0	Ethyl methanesulfonate	
U120	206-44-0	Fluoranthene	
U122	50-00-0	Formaldehyde	
U123	64-18-6	Formic acid	(C,T)
U124	110-00-9	Furan	(I)
U125	98-01-1	2-Furancarboxaldehyde	(I)
U147	108-31-6	2,5-Furandione	
U213	109-99-9	Furan, tetrahydro-	(I)
U125	98-01-1	Furfural	(I)
U124	110-00-9	Furfuran	(I)
U206	18883-66-4	Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-, D-	
U206	18883-66-4	D-Glucose, 2-deoxy-2-[[[(methylnitrosoamino) carbonyl]amino]-	
U126	765-34-4	Glycidylaldehyde	
U163	70-25-7	Guanidine, N-methyl-N'-nitro-N-nitroso-	
U127	118-74-1	Hexachlorobenzene	
U128	87-68-3	Hexachlorobutadiene	
U130	77-47-4	Hexachlorocyclopentadiene	

Table 205b			
EPA Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
U131	67-72-1	Hexachloroethane	
U132	70-30-4	Hexachlorophene	
U243	1888-71-7	Hexachloropropene	
U133	302-01-2	Hydrazine	(R,T)
U086	1615-80-1	Hydrazine, 1,2-diethyl-	
U098	57-14-7	Hydrazine, 1,1-dimethyl-	
U099	540-73-8	Hydrazine, 1,2-dimethyl-	
U109	122-66-7	Hydrazine, 1,2-diphenyl-	
U134	7664-39-3	Hydrofluoric acid or hydrogen fluoride	(C,T)
U135	7783-06-4	Hydrogen sulfide or hydrogen sulfide H ₂ S	
U096	80-15-9	Hydroperoxide, 1-methyl-1-phenylethyl-	(R)
U116	96-45-7	2-Imidazolidinethione	
U137	193-39-5	Indeno[1,2,3cd]pyrene	
U190	85-44-9	1,3-Isobenzofurandione	
U140	78-83-1	Isobutyl alcohol	(I,T)
U141	120-58-1	Isosafrole	
U142	143-50-0	Kepone	
U143	303-34-4	Lasiocarpine	
U144	301-04-2	Lead acetate	
U146	1335-32-6	Lead, bis(acetato-O) tetrahydroxytri-	
U145	7446-27-7	Lead phosphate	
U146	1335-32-6	Lead subacetate	
U129	58-89-9	Lindane	
U163	70-25-7	MNNG	
U147	108-31-6	Maleic anhydride	
U148	123-33-1	Maleic hydrazide	
U149	109-77-3	Malononitrile	
U150	148-82-3	Melphalan	
U151	7439-97-6	Mercury	
U152	126-98-7	Methacrylonitrile	(I,T)
U092	124-40-3	Methanamine, N-methyl-	(I)
U029	74-83-9	Methane, bromo-	
U045	74-87-3	Methane, chloro-	(I,T)
U046	107-30-2	Methane, chloromethoxy-	
U068	74-95-3	Methane, dibromo-	
U080	75-09-2	Methane, dichloro-	
U075	75-71-8	Methane, dichlorodifluoro-	
U138	74-88-4	Methane, iodo-	
U119	62-50-0	Methanesulfonic acid, ethyl ester	

Table 205b			
EPA Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
U211	56-23-5	Methane, tetrachloro-	
U153	74-93-1	Methanethiol	(I,T)
U225	75-25-2	Methane, tribromo-	
U044	67-66-3	Methane, trichloro-	
U121	75-69-4	Methane, trichlorofluoro-	
U036	57-74-9	4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro	
U154	67-56-1	Methanol	(I)
U155	91-80-5	Methapyrilene	
U142	143-50-0	1,3,4-Metheneo-2H-cyclobuta[cd]pentalen-2-one,1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-	
U247	72-43-5	Methoxychlor	
U154	67-56-1	Methyl alcohol	(I)
U029	74-83-9	Methyl bromide	
U186	504-60-9	1-Methylbutadiene	(I)
U045	74-87-3	Methyl chloride	(I,T)
U156	79-22-1	Methyl chlorocarbonate	(I,T)
U226	71-55-6	Methylchloroform	
U157	56-49-5	3-Methylcholanthrene	
U158	101-14-4	4,4'-Methylenebis(2-chloroaniline)	
U068	74-95-3	Methylene bromide	
U080	75-09-2	Methylene chloride	
U159	78-93-3	Methyl ethyl ketone	(I,T)
U160	1338-23-4	Methyl ethyl ketone peroxide	(R,T)
U138	74-88-4	Methyl iodide	
U161	108-10-1	Methyl isobutyl ketone	(I)
U162	80-62-6	Methyl methacrylate	(I,T)
U161	108-10-1	4-Methyl-2-pentanone	(I)
U164	56-04-2	Methylthiouracil	
U010	50-07-7	Mitomycin	(C)
U059	20830-81-3	5,12-Naphthacenedione, (8S-cis)-8-acetyl-10-[(3-amino-2,3,6-trideoxy-alpha-L-lyxohexopyranosyl)oxyl]- 7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-	
U167	134-32-7	1-Naphthalenamine	
U168	91-59-8	2-Naphthalenamine	
U026	494-03-1	Naphthalenamine, N,N'-bis(2-chloroethyl)-	
U165	91-20-3	Naphthalene	
U047	91-58-7	Naphthalene, 2-chloro-	
U166	130-15-4	1,4-Naphthalenedione	
U236	72-57-1	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl-(1,1-	

Table 205b			
EPA Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
		biphenyl)-4,4'diyl]-bis(azo)bis (5-amino-4-hydroxy)-, tetrasodium salt	
U279	63-25-2	1-Naphthalenol, methylcarbamate	
U166	130-15-4	1,4-Naphthoquinone	
U167	134-32-7	alpha-Naphthylamine	
U168	91-59-8	beta-Naphthylamine	
U217	10102-45-1	Nitric acid, thallium(1+) salt	
U169	98-95-3	Nitrobenzene	(I,T)
U170	100-02-7	p-Nitrophenol	
U171	79-46-9	2-Nitropropane	(I,T)
U172	924-16-3	N-Nitrosodi-n-butylamine	
U173	1116-54-7	N-Nitrosodiethanolamine	
U174	55-18-5	N-Nitrosodiethylamine	
U176	759-73-9	N-Nitroso-N-ethylurea	
U177	684-93-5	N-Nitroso-N-methylurea	
U178	615-53-2	N-Nitroso-N-methylurethane	
U179	100-75-4	N-Nitrosopiperidine	
U180	930-55-2	N-Nitrosopyrrolidine	
U181	99-55-8	5-Nitro-o-toluidine	
U193	1120-71-4	1,2-Oxathiolane, 2,2-dioxide	
U058	50-18-0	2H-1,3,2-Oxazaphosphorin, 2-amine, N,N-bis(2-chloroethyl) tetrahydro-, 2-oxide	
U115	75-21-8	Oxirane	(I,T)
U126	765-34-4	Oxiranecarboxyaldehyde	
U041	106-89-8	Oxirane, 2-(chloromethyl)-	
U182	123-63-7	Paraldehyde	
U183	608-93-5	Pentachlorobenzene	
U184	76-01-7	Pentachloroethane	
U185	82-68-8	Pentachloronitrobenzene	
See F027	87-86-5	Pentachlorophenol	
U161	108-10-1	Pentanone, 4-methyl-	
U186	98-95-3	Nitrobenzene	(I,T)
U187	62-44-2	Phenacetin	
U188	108-95-2	Phenol	
U048	95-57-8	Phenol, 2-chloro-	
U039	59-50-7	Phenol, 4-chloro-3-methyl-	
U081	120-83-2	Phenol, 2,4-dichloro-	
U082	87-65-0	Phenol, 2,6-dichloro-	
U089	56-53-1	Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-, (E)-	

Table 205b			
EPA Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
U101	105-67-9	Phenol, 2,4-dimethyl-	
U052	1319-77-3	Phenol, methyl-	
U132	70-30-4	Phenol, 2,2'-methylenebis[3,4,6-trichloro-	
U411	114-26-1	Phenol, 2-(1-methylethoxy)-, methylcarbamate	
U170	100-02-7	Phenol, 4-nitro-	
See F027	87-86-5	Phenol, pentachloro-	
See F027	58-90-2	Phenol, 2,3,4,6-tetrachloro-	
See F027	95-95-4	Phenol, 2,4,5-trichloro-	
See F027	88-06-2	Phenol, 2,4,6-trichloro-	
U150	148-82-3	L-Phenylalanine, 4-[bis(2-chloroethyl)amino]-	
U145	7446-27-7	Phosphoric acid, lead salt	
U087	3288-58-2	Phosphorodithioic acid, 0,0-diethyl-S-methyl ester	
U189	1314-80-3	Phosphorus sulfide	(R)
U190	85-44-9	Phthalic anhydride	
U191	109-06-8	2-Picoline	
U179	100-75-4	Piperidine, 1-nitroso-	
U192	23950-58-5	Pronamide	
U194	107-10-8	1-Propanamine	(I,T)
U111	621-64-7	1-Propanamine, N-nitroso-N-propyl-	
U110	142-84-7	1-Propanamine, N-propyl-	(I)
U066	96-12-8	Propane, 1,2-dibromo-3-chloro-	
U083	78-87-5	Propane, 1,2-dichloro-	
U149	109-77-3	Propanedinitrile	
U171	79-46-9	Propane, 2-nitro-	(I,T)
U027	108-60-1	Propane, 2,2'oxybis[2-chloro-	
U193	1120-71-4	1,3-Propane sultone	
See F027	93-72-1	Propionic acid, 2-(2,4,5-trichlorophenoxy)-	
U235	126-72-7	1-Propanol, 2,3-dibromo-, phosphate (3:1)	
U140	78-83-1	1-Propanol, 2-methyl-	(I,T)
U002	67-64-1	2-Propanone	(I)
U007	79-06-1	2-Propenamide	
U084	542-75-6	Propene, 1,3-dichloro-	
U243	1888-71-7	1-Propene, 1,1,2,3,3,3-hexachloro-	
U009	107-13-1	2-Propenenitrile	
U152	126-98-7	2-Propenenitrile, 2-methyl-	(I,T)
U008	79-10-7	2-Propenoic acid	(I)
U113	140-88-5	2-Propenoic acid, ethyl ester	(I)
U118	97-63-2	2-Propenoic acid, 2-methyl-, ethyl ester	
U162	80-62-6	2-Propenoic acid, 2-methyl-, methyl ester	(I,T)

Table 205b			
EPA Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
U373	122-42-9	Propham	
U411	114-26-1	Propoxur	
U194	107-10-8	n-Propylamine	(I,T)
U083	78-87-5	Propylene dichloride	
U387	52888-80-9	Prosulfocarb	
U148	123-33-1	3,6-Pyridazinedione, 1,2-dihydro-	
U196	110-86-1	Pyridine	
U191	109-06-8	Pyridine, 2-methyl-	
U237	66-75-1	2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino]-	
U164	56-04-2	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-	
U180	930-55-2	Pyrrole, tetrahydro-N-nitroso-	
U200	50-55-5	Reserpine	
U201	108-46-3	Resorcinol	
U203	94-59-7	Safrole	
U204	7783-00-8	Selenious acid or selenious dioxide	
U205	7488-56-4	Selenium sulfide or selenium sulfide SeS ₂	(R,T)
U015	115-02-6	L-Serine, diazoacetate (ester)	
See F027	93-72-1	Silvex	
U206	18883-66-4	Streptozotocin	
U103	77-78-1	Sulfuric acid, dimethyl ester	
U189	1314-80-3	Sulfur phosphide	(R)
See F027	93-76-5	2,4,5-T	
U207	95-94-3	1,2,4,5-Tetrachlorobenzene	
U208	630-20-6	1,1,1,2-Tetrachloroethane	
U209	79-34-5	1,1,2,2-Tetrachloroethane	
U210	127-18-4	Tetrachloroethylene	
See F027	58-90-2	2,3,4,6-Tetrachlorophenol	
U213	109-99-9	Tetrahydrofuran	(I)
U214	563-68-8	Thallium (I) acetate	
U215	6533-73-9	Thallium (I) carbonate	
U216	7791-12-0	Thallium (I) chloride or thallium chloride TlCl	
U217	10102-45-1	Thallium (I) nitrate	
U218	62-55-5	Thioacetamide	
U410	59669-26-0	Thiodicarb	
U153	74-93-1	Thiomethanol	(I,T)
U244	137-26-8	Thioperoxydicarbonic diamide [(H ₂ N)C(S)] ₂ S ₂ , tetramethyl-	
U409	23564-05-8	Thiophanate-methyl	
U219	62-56-6	Thiourea	

Table 205b			
EPA Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
U244	137-26-8	Thiram	
U220	108-88-3	Toluene	
U221	25376-45-8	Toluenediamine	
U223	26471-62-5	Toluene diisocyanate	(R,T)
U328	95-53-4	o-Toluidine	
U353	106-49-0	p-Toluidine	
U222	636-21-5	o-Toluidine hydrochloride	
U389	2303-17-5	Triallate	
U011	61-82-5	1H-1,2,4-Triazol-3-amine	
U227	79-00-5	1,1,2-Trichloroethane	
U228	79-01-6	Trichloroethylene	
U121	75-69-4	Trichloromonofluoromethane	
See F027	95-95-4	2,4,5-Trichlorophenol	
See F027	88-06-2	2,4,6-Trichlorophenol	
U404	121-44-8	Triethylamine	
U234	99-35-4	1,3,5-Trinitrobenzene	(R,T)
U182	123-63-7	1,3,5-Trioxane, 2,4,6-trimethyl-	
U235	126-72-7	Tris(2,3-Dibromopropyl) phosphate	
U236	72-57-1	Trypan blue	
U237	66-75-1	Uracil mustard	
U176	759-73-9	Urea, N-ethyl-N-nitroso-	
U177	684-93-5	Urea, N-methyl-N-nitroso-	
U043	75-01-4	Vinyl chloride	
U248	81-81-2	Warfarin, and salts, when present at a concentration of 0.3% or less	
U239	1330-20-7	Xylene	(I)
U200	50-55-5	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxy-benzoyl)oxy]-, methyl ester	
U249	1314-84-7	Zinc phosphide, when present at concentration 10% or less	

R 299.9226 Table 205c; discarded commercial chemical products; off-specification species; container residues; and spill residues thereof as toxic hazardous wastes.

Rule 226. Table 205c reads as follows:

Table 205c			
Michigan Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code

Table 205c			
Michigan Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
001U	50-76-0	Actinomycin D	
002U	107-05-1	Allyl chloride	
003U	117-79-3	2-aminoanthraquinone	
004U	60-09-3	Aminoazobenzene	
005U	97-56-3	0-aminoazotoluene	
006U	92-67-1	4-aminobiphenyl	
007U	132-32-1	3-amino-9-ethyl carbazole	
157U	57360-17-5	3-amino-9-ethyl carbazole hydrochloride	
008U	82-28-0	1-amino-2-methyl anthraquinone	
009U	101-05-3	Anilazine	
158U	142-04-1	Aniline hydrochloride	
011U	90-04-0	o-Anisidine	
012U	134-29-2	o-Anisidine hydrochloride	
014U	1397-94-0	Antimycin A	
147U	2642-71-9	Azinphos-ethyl	
148U	86-50-0	Azinphos-methyl	
159U	103-33-3	Azobenzene	
020U	1689-84-5	Bromoxynil	
160U	106-99-0	1,3-Butadiene	
161U	85-68-7	Butyl benzl phthalate	
022U	2425-06-1	Captafol	
023U	133-06-2	Captan	
027U	786-19-6	Carbophenothion	
152U	470-90-6	Chlorfenuinphos	
029U	2921-88-2	Chloropyrifos	
032U	7782-50-5	Chlorine gas	
033U	107-07-3	2-Chloroethanol	
034U	6959-48-4	3-(Chloromethyl) pyridine hydrochloride	
150U	106-48-9	p-chlorophenol	
162U	7005-72-3	1-chloro-4-phenoxybenzene	
036U	5131-60-2	4-chloro-m-phenylenediamine	
037U	95-83-0	4-chloro-o-phenylenediamine	
038U	126-99-8	Chloroprene	
163U	590-21-6	1-chloropropene	
151U	96-79-4	5-chloro-o-toluidene	
040U	1420-04-8	Clonitralid	
042U	56-72-4	Coumasphos	
043U	120-71-8	p-Cresidine	
044U	7700-17-6	Crotoxyphos	

Table 205c			
Michigan Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
046U	66-81-9	Cycloheximide	
164U	72-55-9	P,P' DDE	
048U	39156-41-7	2,4-Diaminoanisole sulfate	
049U	101-80-4	4,4'-Diaminodiphenyl ether	
050U	95-80-7	2,4-Diaminotoluene	
051U	333-41-5	Diazinon	
052U	117-80-6	Dichlone	
054U	62-73-7	Dichlorvos	
055U	141-66-2	Dichrotophos	
056U	64-67-5	Diethyl sulfate	
165U	105-55-5	N,N'-Diethylthiourea	
057U	39300-45-3	Dinocap	
058U	78-34-2	Dioxathion	
059U	2104-64-5	EPN	
166U	106-88-7	1,2-Epoxybutane	
061U	563-12-2	Ethion	
063U	115-90-2	Fensulfothion	
064U	55-38-9	Fenthion	
065U	33245-39-5	Fluchloralin	
068U	680-31-9	Hexamethyl phosphoramidate	
070U	123-31-9	Hydroquinone	
071U	1072-52-2	N-(2-Hydroxyethyl) ethyleneimine	
073U	54-85-3	Isonicotinic acid hydrazine	
167U	59299-51-3	Kanechlor C	
074U	463-51-4	Ketene	
075U	78-97-7	Lactonitril	
076U	21609-90-5	Leptophos	
078U	569-64-2	Malachite green	
079U	121-75-5	Malathion	
082U	838-88-0	4,4'-Methylenebis(2-methylaniline)	
083U	101-61-1	4,4'-Methylenebis(N,N-dimethylaniline)	
086U	90-12-0	1-Methylnaphthalene	
088U	7786-34-7	Mevinphos	
089U	315-18-4	Mexacarbate	
090U	2385-85-5	Mirex	
092U	6923-22-4	Monocrotophos	
093U	505-60-2	Mustard gas	
094U	300-76-5	Naled	
095U	2243-62-1	1,5-Naphthalenediamine	

Table 205c			
Michigan Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
097U	61-57-4	Niridazole	
098U	139-94-6	Nithiazide	
099U	602-87-9	5-Nitroacenaphthene	
100U	99-59-2	Nitro-o-anisidine	
101U	92-93-3	4-Nitrobiphenyl	
102U	1836-75-5	Nitrofen	
103U	531-82-8	N-(4-(5-nitro-2-furanyl)-2-thiazolyl)-acetamide	
104U	51-75-2	Nitrogen mustard	
106U	156-10-5	p-Nitrosodiphenylamine	
108U	135-20-6	N-nitroso-N-phenylhydroxylamine, ammonium salt	
169U	29082-74-4	Octachlorostyrene	
110U	301-12-2	Oxydemeton-methyl	
111U	1910-42-5	Paraquat dichloride	
112U	79-21-0	Peroxyacetic acid	
113U	136-40-3	Phenazopyridine hydrochloride	
115U	50-06-6	Phenobarbitol	
116U	57-41-0	Phenytoin	
117U	630-93-3	Phenytoin sodium	
118U	4104-14-7	Phosazetim	
119U	732-11-6	Phosmet	
120U	13171-21-6	Phosphamidon	
121U	120-62-7	Piperonyl sulfoxide	
124U	57-57-8	Propiolactone	
127U	51-52-5	Propylthiouracil	
128U	83-749-4	Rotenone	
129U	57-56-7	Semicarbazide	
170U	563-41-7	Semicarbazide hydrochloride	
153U	62-74-8	Sodium fluoroacetate	
131U	100-42-5	Styrene	
132U	95-06-7	Sulfallate	
134U	72-54-8	TDE	
136U	13071-79-9	Terbufos	
137U	961-11-5	Tetrachlorvinphos	
138U	139-65-1	4,4'-Thiodianiline	
139U	95-53-4	o-Toluidine	
154U	56-35-9	Bis(tri-n-butyl tin) oxide	
171U	688-73-3	Tributyltin (and other salts and esters)	
172U	87-61-6	1,2,3-Trichlorobenzene	
173U	120-82-1	1,2,4-Trichlorobenzene	

Table 205c			
Michigan Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
141U	52-68-6	Trichlorfon	
142U	1582-09-8	Trifluralin	
143U	137-17-7	2,4,5-Trimethylaniline	
174U	51-79-6	Urethane	
175U	593-60-2	Vinyl bromide	

R 299.9227 Deletion of certain hazardous waste numbers after equipment cleaning and replacement.

Rule 227. (1) Wastes from wood preserving processes at plants that do not resume or initiate the use of chlorophenolic preservatives will not meet the listing description of F032 once the generator has met all of the requirements of subrules (2) to (5) of this rule. These wastes may, however, continue to meet another hazardous waste listing description or may exhibit 1 or more of the hazardous waste characteristics.

(2) Generators shall either clean or replace all process equipment that may have come into contact with chlorophenolic formulations or constituents thereof, including, but not limited to, treatment cylinders, sumps, tanks, piping systems, drip pads, fork lifts, and trams, in a manner that minimizes or eliminates the escape of hazardous waste or constituents, leachate, contaminated drippage, or hazardous waste decomposition products to the environment. In cleaning or replacing the process equipment, the generator shall do 1 of the following:

(a) Prepare and follow a process equipment cleaning plan and clean process equipment in accordance with the provisions of subrule (3) of this rule.

(b) Prepare and follow a process equipment replacement plan and replace process equipment in accordance with the provisions of subrule (4) of this rule.

(c) Document that previous process equipment cleaning or replacement, or both, was performed in accordance with the provisions of subrules (3) or (4), or both, of this rule and occurred after cessation of the use of chlorophenolic preservatives.

(3) In cleaning the process equipment that may have come into contact with chlorophenolic formulations, the generator shall do all of the following:

(a) Prepare and sign a written process equipment cleaning plan that describes all of the following:

(i) The process equipment to be cleaned.

(ii) The process equipment cleaning method or methods.

(iii) The solvent to be used in cleaning the process equipment.

(iv) How the solvent rinses will be tested.

(v) How the cleaning residues will be managed and disposed of.

(b) Clean the process equipment as follows:

(i) Remove all visible residues from the process equipment.

(ii) Rinse process equipment with an appropriate solvent until dioxins and dibenzofurans are not detected in the final solvent rinse.

(c) Test the rinses in accordance with an appropriate method in accordance with 40 C.F.R. §261.35(b)(2)(iii).

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is also known as industrial or new scrap metal.

[45 FR 33119, May 19, 1980, as amended at 48 FR 14293, Apr. 1, 1983; 50 FR 663, Jan. 4, 1985; 51 FR 10174, Mar. 24, 1986; 51 FR 40636, Nov. 7, 1986; 62 FR 26018, May 12, 1997]

§ 261.2 Definition of solid waste.

(a)(1) A *solid waste* is any discarded material that is not excluded by § 261.4(a) or that is not excluded by variance granted under §§ 260.30 and 260.31.

(2) A *discarded material* is any material which is:

(i) *Abandoned*, as explained in paragraph (b) of this section; or

(ii) *Recycled*, as explained in paragraph (c) of this section; or

(iii) Considered *inherently waste-like*, as explained in paragraph (d) of this section; or

(iv) A *military munition* identified as a solid waste in 40 CFR 266.202.

(b) Materials are solid waste if they are *abandoned* by being:

(1) Disposed of; or

(2) Burned or incinerated; or

(3) Accumulated, stored, or treated (but not recycled) before or in lieu of being abandoned by being disposed of, burned, or incinerated.

(c) Materials are solid wastes if they are *recycled*—or accumulated, stored, or treated before recycling—as specified in paragraphs (c)(1) through (4) of this section.

(1) *Used in a manner constituting disposal*. (i) Materials noted with a “*” in

Column 1 of Table 1 are solid wastes when they are:

(A) Applied to or placed on the land in a manner that constitutes disposal; or

(B) Used to produce products that are applied to or placed on the land or are otherwise contained in products that are applied to or placed on the land (in which cases the product itself remains a solid waste).

(ii) However, commercial chemical products listed in § 261.33 are not solid wastes if they are applied to the land and that is their ordinary manner of use.

(2) *Burning for energy recovery*. (i) Materials noted with a “*” in column 2 of Table 1 are solid wastes when they are:

(A) Burned to recover energy;

(B) Used to produce a fuel or are otherwise contained in fuels (in which cases the fuel itself remains a solid waste).

(ii) However, commercial chemical products listed in § 261.33 are not solid wastes if they are themselves fuels.

(3) *Reclaimed*. Materials noted with a “*” in column 3 of Table 1 are solid wastes when reclaimed (except as provided under § 261.4(a)(17)). Materials noted with a “—” in column 3 of Table 1 are not solid wastes when reclaimed.

(4) *Accumulated speculatively*. Materials noted with a “*” in column 4 of Table 1 are solid wastes when accumulated speculatively.

TABLE 1

	Use constituting disposal (§ 261.2(c)(1))	Energy recovery/ fuel (§ 261.2(c)(2))	Reclamation (§ 261.2(c)(3)) (except as provided in 261.4(a)(17) for mineral processing secondary materials)	Speculative accumulation (§ 261.2(c)(4))
	1	2	3	4
Spent Materials	(*)	(*)	(*)	(*)
Sludges (listed in 40 CFR Part 261.31 or 261.32	(*)	(*)	(*)	(*)
Sludges exhibiting a characteristic of hazardous waste	(*)	(*)	—	(*)
By-products (listed in 40 CFR 261.31 or 261.32)	(*)	(*)	(*)	(*)
By-products exhibiting a characteristic of hazardous waste	(*)	(*)	—	(*)
Commercial chemical products listed in 40 CFR 261.33	(*)	(*)	—	—
Scrap metal other than excluded scrap metal (see 261.1(c)(9))	(*)	(*)	(*)	(*)

NOTE: The terms “spent materials,” “sludges,” “by-products,” and “scrap metal” and “processed scrap metal” are defined in § 261.1.

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(d) *Inherently waste-like materials.* The following materials are solid wastes when they are recycled in any manner:

(1) Hazardous Waste Nos. F020, F021 (unless used as an ingredient to make a product at the site of generation), F022, F023, F026, and F028.

(2) Secondary materials fed to a halogen acid furnace that exhibit a characteristic of a hazardous waste or are listed as a hazardous waste as defined in subparts C or D of this part, except for brominated material that meets the following criteria:

(i) The material must contain a bromine concentration of at least 45%; and

(ii) The material must contain less than a total of 1% of toxic organic compounds listed in appendix VIII; and

(iii) The material is processed continually on-site in the halogen acid furnace via direct conveyance (hard piping).

(3) The Administrator will use the following criteria to add wastes to that list:

(1)(A) The materials are ordinarily disposed of, burned, or incinerated; or

(B) The materials contain toxic constituents listed in appendix VIII of part 261 and these constituents are not ordinarily found in raw materials or products for which the materials substitute (or are found in raw materials or products in smaller concentrations) and are not used or reused during the recycling process; and

(ii) The material may pose a substantial hazard to human health and the environment when recycled.

(e) *Materials that are not solid waste when recycled.* (1) Materials are not solid wastes when they can be shown to be recycled by being:

(i) Used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed; or

(ii) Used or reused as effective substitutes for commercial products; or

(iii) Returned to the original process from which they are generated, without first being reclaimed or land disposed. The material must be returned as a substitute for feedstock materials. In cases where the original process to which the material is returned is a secondary process, the materials must be managed such that there is no place-

ment on the land. In cases where the materials are generated and reclaimed within the primary mineral processing industry, the conditions of the exclusion found at § 261.4(a)(17) apply rather than this paragraph.

(2) The following materials are solid wastes, even if the recycling involves use, reuse, or return to the original process (described in paragraphs (e)(1) (i) through (iii) of this section):

(i) Materials used in a manner constituting disposal, or used to produce products that are applied to the land; or

(ii) Materials burned for energy recovery, used to produce a fuel, or contained in fuels; or

(iii) Materials accumulated speculatively; or

(iv) Materials listed in paragraphs (d)(1) and (d)(2) of this section.

(f) *Documentation of claims that materials are not solid wastes or are conditionally exempt from regulation.* Respondents in actions to enforce regulations implementing subtitle C of RCRA who raise a claim that a certain material is not a solid waste, or is conditionally exempt from regulation, must demonstrate that there is a known market or disposition for the material, and that they meet the terms of the exclusion or exemption. In doing so, they must provide appropriate documentation (such as contracts showing that a second person uses the material as an ingredient in a production process) to demonstrate that the material is not a waste, or is exempt from regulation. In addition, owners or operators of facilities claiming that they actually are recycling materials must show that they have the necessary equipment to do so.

[50 FR 664, Jan. 4, 1985, as amended at 50 FR 33542, Aug. 20, 1985; 56 FR 7206, Feb. 21, 1991; 56 FR 32688, July 17, 1991; 56 FR 42512, Aug. 27, 1991; 57 FR 38564, Aug. 25, 1992; 59 FR 48042, Sept. 19, 1994; 62 FR 6651, Feb. 12, 1997; 62 FR 26019, May 12, 1997; 63 FR 28636, May 26, 1998; 64 FR 24513, May 11, 1999; 67 FR 11253, Mar. 13, 2002; 71 FR 40258, July 14, 2006]

§ 261.3 Definition of hazardous waste.

(a) A solid waste, as defined in § 261.2, is a hazardous waste if:

(1) It is not excluded from regulation as a hazardous waste under § 261.4(b); and

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(d) *Inherently waste-like materials.* The following materials are solid wastes when they are recycled in any manner:

(1) Hazardous Waste Nos. F020, F021 (unless used as an ingredient to make a product at the site of generation), F022, F023, F026, and F028.

(2) Secondary materials fed to a halogen acid furnace that exhibit a characteristic of a hazardous waste or are listed as a hazardous waste as defined in subparts C or D of this part, except for brominated material that meets the following criteria:

(i) The material must contain a bromine concentration of at least 45%; and

(ii) The material must contain less than a total of 1% of toxic organic compounds listed in appendix VIII; and

(iii) The material is processed continually on-site in the halogen acid furnace via direct conveyance (hard piping).

(3) The Administrator will use the following criteria to add wastes to that list:

(1)(A) The materials are ordinarily disposed of, burned, or incinerated; or

(B) The materials contain toxic constituents listed in appendix VIII of part 261 and these constituents are not ordinarily found in raw materials or products for which the materials substitute (or are found in raw materials or products in smaller concentrations) and are not used or reused during the recycling process; and

(ii) The material may pose a substantial hazard to human health and the environment when recycled.

(e) *Materials that are not solid waste when recycled.* (1) Materials are not solid wastes when they can be shown to be recycled by being:

(i) Used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed; or

(ii) Used or reused as effective substitutes for commercial products; or

(iii) Returned to the original process from which they are generated, without first being reclaimed or land disposed. The material must be returned as a substitute for feedstock materials. In cases where the original process to which the material is returned is a secondary process, the materials must be managed such that there is no place-

ment on the land. In cases where the materials are generated and reclaimed within the primary mineral processing industry, the conditions of the exclusion found at § 261.4(a)(17) apply rather than this paragraph.

(2) The following materials are solid wastes, even if the recycling involves use, reuse, or return to the original process (described in paragraphs (e)(1) (i) through (iii) of this section):

(i) Materials used in a manner constituting disposal, or used to produce products that are applied to the land; or

(ii) Materials burned for energy recovery, used to produce a fuel, or contained in fuels; or

(iii) Materials accumulated speculatively; or

(iv) Materials listed in paragraphs (d)(1) and (d)(2) of this section.

(f) *Documentation of claims that materials are not solid wastes or are conditionally exempt from regulation.* Respondents in actions to enforce regulations implementing subtitle C of RCRA who raise a claim that a certain material is not a solid waste, or is conditionally exempt from regulation, must demonstrate that there is a known market or disposition for the material, and that they meet the terms of the exclusion or exemption. In doing so, they must provide appropriate documentation (such as contracts showing that a second person uses the material as an ingredient in a production process) to demonstrate that the material is not a waste, or is exempt from regulation. In addition, owners or operators of facilities claiming that they actually are recycling materials must show that they have the necessary equipment to do so.

[50 FR 664, Jan. 4, 1985, as amended at 50 FR 33542, Aug. 20, 1985; 56 FR 7206, Feb. 21, 1991; 56 FR 32688, July 17, 1991; 56 FR 42512, Aug. 27, 1991; 57 FR 38564, Aug. 25, 1992; 59 FR 48042, Sept. 19, 1994; 62 FR 6651, Feb. 12, 1997; 62 FR 26019, May 12, 1997; 63 FR 28636, May 26, 1998; 64 FR 24513, May 11, 1999; 67 FR 11253, Mar. 13, 2002; 71 FR 40258, July 14, 2006]

§ 261.3 Definition of hazardous waste.

(a) A solid waste, as defined in § 261.2, is a hazardous waste if:

(1) It is not excluded from regulation as a hazardous waste under § 261.4(b); and

(2) It meets any of the following criteria:

(i) It exhibits any of the characteristics of hazardous waste identified in subpart C of this part. However, any mixture of a waste from the extraction, beneficiation, and processing of ores and minerals excluded under § 261.4(b)(7) and any other solid waste exhibiting a characteristic of hazardous waste under subpart C is a hazardous waste only if it exhibits a characteristic that would not have been exhibited by the excluded waste alone if such mixture had not occurred, or if it continues to exhibit any of the characteristics exhibited by the non-excluded wastes prior to mixture. Further, for the purposes of applying the Toxicity Characteristic to such mixtures, the mixture is also a hazardous waste if it exceeds the maximum concentration for any contaminant listed in table 1 to § 261.24 that would not have been exceeded by the excluded waste alone if the mixture had not occurred or if it continues to exceed the maximum concentration for any contaminant exceeded by the nonexempt waste prior to mixture.

(ii) It is listed in subpart D of this part and has not been excluded from the lists in subpart D of this part under §§ 260.20 and 260.22 of this chapter.

(iii) [Reserved]

(iv) It is a mixture of solid waste and one or more hazardous wastes listed in subpart D of this part and has not been excluded from paragraph (a)(2) of this section under §§ 260.20 and 260.22, paragraph (g) of this section, or paragraph (h) of this section; however, the following mixtures of solid wastes and hazardous wastes listed in subpart D of this part are not hazardous wastes (except by application of paragraph (a)(2)(i) or (ii) of this section) if the generator can demonstrate that the mixture consists of wastewater the discharge of which is subject to regulation under either section 402 or section 307(b) of the Clean Water Act (including wastewater at facilities which have eliminated the discharge of wastewater) and;

(A) One or more of the following spent solvents listed in § 261.31—benzene, carbon tetrachloride, tetrachloroethylene, trichloroethylene

or the scrubber waters derived from the combustion of these spent solvents—*Provided*, That the maximum total weekly usage of these solvents (other than the amounts that can be demonstrated not to be discharged to wastewater) divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system does not exceed 1 part per million, OR the total measured concentration of these solvents entering the headworks of the facility's wastewater treatment system (at facilities subject to regulation under the Clean Air Act, as amended, at 40 CFR parts 60, 61, or 63, or at facilities subject to an enforceable limit in a federal operating permit that minimizes fugitive emissions), does not exceed 1 part per million on an average weekly basis. Any facility that uses benzene as a solvent and claims this exemption must use an aerated biological wastewater treatment system and must use only lined surface impoundments or tanks prior to secondary clarification in the wastewater treatment system. Facilities that choose to measure concentration levels must file a copy of their sampling and analysis plan with the Regional Administrator, or State Director, as the context requires, or an authorized representative ("Director" as defined in 40 CFR 270.2). A facility must file a copy of a revised sampling and analysis plan only if the initial plan is rendered inaccurate by changes in the facility's operations. The sampling and analysis plan must include the monitoring point location (headworks), the sampling frequency and methodology, and a list of constituents to be monitored. A facility is eligible for the direct monitoring option once they receive confirmation that the sampling and analysis plan has been received by the Director. The Director may reject the sampling and analysis plan if he/she finds that, the sampling and analysis plan fails to include the above information; or the plan parameters would not enable the facility to calculate the weekly average concentration of these chemicals accurately. If the Director rejects the sampling and analysis plan or if the Director finds that the facility is not following the sampling and analysis plan,

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the Director shall notify the facility to cease the use of the direct monitoring option until such time as the bases for rejection are corrected; or

(B) One or more of the following spent solvents listed in § 261.31—methylene chloride, 1,1,1-trichloroethane, chlorobenzene, o-dichlorobenzene, cresols, cresylic acid, nitrobenzene, toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, spent chlorofluorocarbon solvents, 2-ethoxyethanol, or the scrubber waters derived from the combustion of these spent solvents—*Provided* That the maximum total weekly usage of these solvents (other than the amounts that can be demonstrated not to be discharged to wastewater) divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system does not exceed 25 parts per million, OR the total measured concentration of these solvents entering the headworks of the facility's wastewater treatment system (at facilities subject to regulation under the Clean Air Act as amended, at 40 CFR parts 60, 61, or 63, or at facilities subject to an enforceable limit in a federal operating permit that minimizes fugitive emissions), does not exceed 25 parts per million on an average weekly basis. Facilities that choose to measure concentration levels must file a copy of their sampling and analysis plan with the Regional Administrator, or State Director, as the context requires, or an authorized representative ("Director" as defined in 40 CFR 270.2). A facility must file a copy of a revised sampling and analysis plan only if the initial plan is rendered inaccurate by changes in the facility's operations. The sampling and analysis plan must include the monitoring point location (headworks), the sampling frequency and methodology, and a list of constituents to be monitored. A facility is eligible for the direct monitoring option once they receive confirmation that the sampling and analysis plan has been received by the Director. The Director may reject the sampling and analysis plan if he/she finds that, the sampling and analysis plan fails to include the above information; or the plan parameters would not enable the facility to calculate the weekly aver-

age concentration of these chemicals accurately. If the Director rejects the sampling and analysis plan or if the Director finds that the facility is not following the sampling and analysis plan, the Director shall notify the facility to cease the use of the direct monitoring option until such time as the bases for rejection are corrected; or

(C) One of the following wastes listed in § 261.32, provided that the wastes are discharged to the refinery oil recovery sewer before primary oil/water/solids separation—heat exchanger bundle cleaning sludge from the petroleum refining industry (EPA Hazardous Waste No. K050), crude oil storage tank sediment from petroleum refining operations (EPA Hazardous Waste No. K169), clarified slurry oil tank sediment and/or in-line filter/separation solids from petroleum refining operations (EPA Hazardous Waste No. K170), spent hydrotreating catalyst (EPA Hazardous Waste No. K171), and spent hydrorefining catalyst (EPA Hazardous Waste No. K172); or

(D) A discarded hazardous waste, commercial chemical product, or chemical intermediate listed in §§ 261.31 through 261.33, arising from *de minimis* losses of these materials. For purposes of this paragraph (a)(2)(iv)(D), *de minimis* losses are inadvertent releases to a wastewater treatment system, including those from normal material handling operations (e.g., spills from the unloading or transfer of materials from bins or other containers, leaks from pipes, valves or other devices used to transfer materials); minor leaks of process equipment, storage tanks or containers; leaks from well maintained pump packings and seals; sample purgings; relief device discharges; discharges from safety showers and rinsing and cleaning of personal safety equipment; and rinsate from empty containers or from containers that are rendered empty by that rinsing. Any manufacturing facility that claims an exemption for *de minimis* quantities of wastes listed in §§ 261.31 through 261.32, or any nonmanufacturing facility that claims an exemption for *de minimis* quantities of wastes listed in subpart D of this part must either have eliminated the discharge of wastewaters or have included in its Clean Water Act

permit application or submission to its pretreatment control authority the constituents for which each waste was listed (in 40 CFR 261 appendix VII) of this part; and the constituents in the table "Treatment Standards for Hazardous Wastes" in 40 CFR 268.40 for which each waste has a treatment standard (*i.e.*, Land Disposal Restriction constituents). A facility is eligible to claim the exemption once the permit writer or control authority has been notified of possible *de minimis* releases via the Clean Water Act permit application or the pretreatment control authority submission. A copy of the Clean Water permit application or the submission to the pretreatment control authority must be placed in the facility's on-site files; or

(E) Wastewater resulting from laboratory operations containing toxic (T) wastes listed in subpart D of this part. Provided, That the annualized average flow of laboratory wastewater does not exceed one percent of total wastewater flow into the headworks of the facility's wastewater treatment or pretreatment system or provided the wastes, combined annualized average concentration does not exceed one part per million in the headworks of the facility's wastewater treatment or pretreatment facility. Toxic (T) wastes used in laboratories that are demonstrated not to be discharged to wastewater are not to be included in this calculation; or

(F) One or more of the following wastes listed in § 261.32—wastewaters from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste No. K157)—*Provided* that the maximum weekly usage of formaldehyde, methyl chloride, methylene chloride, and triethylamine (including all amounts that cannot be demonstrated to be reacted in the process, destroyed through treatment, or is recovered, *i.e.*, what is discharged or volatilized) divided by the average weekly flow of process wastewater prior to any dilution into the headworks of the facility's wastewater treatment system does not exceed a total of 5 parts per million by weight OR the total measured concentration of these chemicals entering the headworks of the facility's wastewater treatment system (at facilities

subject to regulation under the Clean Air Act as amended, at 40 CFR parts 60, 61, or 63, or at facilities subject to an enforceable limit in a federal operating permit that minimizes fugitive emissions), does not exceed 5 parts per million on an average weekly basis. Facilities that choose to measure concentration levels must file copy of their sampling and analysis plan with the Regional Administrator, or State Director, as the context requires, or an authorized representative ("Director" as defined in 40 CFR 270.2). A facility must file a copy of a revised sampling and analysis plan only if the initial plan is rendered inaccurate by changes in the facility's operations. The sampling and analysis plan must include the monitoring point location (headworks), the sampling frequency and methodology, and a list of constituents to be monitored. A facility is eligible for the direct monitoring option once they receive confirmation that the sampling and analysis plan has been received by the Director. The Director may reject the sampling and analysis plan if he/she finds that, the sampling and analysis plan fails to include the above information; or the plan parameters would not enable the facility to calculate the weekly average concentration of these chemicals accurately. If the Director rejects the sampling and analysis plan or if the Director finds that the facility is not following the sampling and analysis plan, the Director shall notify the facility to cease the use of the direct monitoring option until such time as the bases for rejection are corrected; or

(G) Wastewaters derived from the treatment of one or more of the following wastes listed in § 261.32—organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste No. K156).—*Provided*, that the maximum concentration of formaldehyde, methyl chloride, methylene chloride, and triethylamine prior to any dilutions into the headworks of the facility's wastewater treatment system does not exceed a total of 5 milligrams per liter OR the total measured concentration of these chemicals entering the

headworks of the facility's wastewater treatment system (at facilities subject to regulation under the Clean Air Act as amended, at 40 CFR parts 60, 61, or 63, or at facilities subject to an enforceable limit in a federal operating permit that minimizes fugitive emissions), does not exceed 5 milligrams per liter on an average weekly basis. Facilities that choose to measure concentration levels must file copy of their sampling and analysis plan with the Regional Administrator, or State Director, as the context requires, or an authorized representative ("Director" as defined in 40 CFR 270.2). A facility must file a copy of a revised sampling and analysis plan only if the initial plan is rendered inaccurate by changes in the facility's operations. The sampling and analysis plan must include the monitoring point location (headworks), the sampling frequency and methodology, and a list of constituents to be monitored. A facility is eligible for the direct monitoring option once they receive confirmation that the sampling and analysis plan has been received by the Director. The Director may reject the sampling and analysis plan if he/she finds that, the sampling and analysis plan fails to include the above information; or the plan parameters would not enable the facility to calculate the weekly average concentration of these chemicals accurately. If the Director rejects the sampling and analysis plan or if the Director finds that the facility is not following the sampling and analysis plan, the Director shall notify the facility to cease the use of the direct monitoring option until such time as the bases for rejection are corrected.

(v) *Rebuttable presumption for used oil.* Used oil containing more than 1000 ppm total halogens is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in subpart D of part 261 of this chapter. Persons may rebut this presumption by demonstrating that the used oil does not contain hazardous waste (for example, to show that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in appendix VIII of part 261 of this chapter).

(b) A solid waste which is not excluded from regulation under paragraph (a)(1) of this section becomes a hazardous waste when any of the following events occur:

(1) In the case of a waste listed in subpart D of this part, when the waste first meets the listing description set forth in subpart D of this part.

(2) In the case of a mixture of solid waste and one or more listed hazardous wastes, when a hazardous waste listed in subpart D is first added to the solid waste.

(3) In the case of any other waste (including a waste mixture), when the waste exhibits any of the characteristics identified in subpart C of this part.

(c) Unless and until it meets the criteria of paragraph (d) of this section:

(1) A hazardous waste will remain a hazardous waste.

(2)(i) Except as otherwise provided in paragraph (c)(2)(ii), (g) or (h) of this section, any solid waste generated from the treatment, storage, or disposal of a hazardous waste, including any sludge, spill residue, ash emission control dust, or leachate (but not including precipitation run-off) is a hazardous waste. (However, materials that are reclaimed from solid wastes and that are used beneficially are not solid wastes and hence are not hazardous wastes under this provision unless the reclaimed material is burned for energy recovery or used in a manner constituting disposal.)

(ii) The following solid wastes are not hazardous even though they are generated from the treatment, storage, or disposal of a hazardous waste, unless they exhibit one or more of the characteristics of hazardous waste:

(A) Waste pickle liquor sludge generated by lime stabilization of spent pickle liquor from the iron and steel industry (SIC Codes 331 and 332).

(B) Waste from burning any of the materials exempted from regulation by § 261.6(a)(3)(iii) and (iv).

(C)(1) Nonwastewater residues, such as slag, resulting from high temperature metals recovery (HTMR) processing of K061, K062 or F006 waste, in units identified as rotary kilns, flame reactors, electric furnaces, plasma arc furnaces, slag reactors, rotary hearth furnace/electric furnace combinations

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or industrial furnaces (as defined in paragraphs (6), (7), and (13) of the definition for “Industrial furnace” in 40 CFR 260.10), that are disposed in subtitle D units, provided that these residues meet the generic exclusion levels identified in the tables in this paragraph for all constituents, and exhibit no characteristics of hazardous waste. Testing requirements must be incorporated in a facility’s waste analysis plan or a generator’s self-implementing waste analysis plan; at a minimum, composite samples of residues must be collected and analyzed quarterly and/or when the process or operation generating the waste changes. Persons claiming this exclusion in an enforcement action will have the burden of proving by clear and convincing evidence that the material meets all of the exclusion requirements.

and do not exhibit any characteristics that are sent to subtitle D units. The notification and certification that is placed in the generators or treaters files must be updated if the process or operation generating the waste changes and/or if the subtitle D unit receiving the waste changes. However, the generator or treater need only notify the EPA region or an authorized state on an annual basis if such changes occur. Such notification and certification should be sent to the EPA region or authorized state by the end of the calendar year, but no later than December 31. The notification must include the following information: The name and address of the subtitle D unit receiving the waste shipments; the EPA Hazardous Waste Number(s) and treatability group(s) at the initial point of generation; and, the treatment standards applicable to the waste at the initial point of generation. The certification must be signed by an authorized representative and must state as follows: “I certify under penalty of law that the generic exclusion levels for all constituents have been met without impermissible dilution and that no characteristic of hazardous waste is exhibited. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.”

Constituent	Maximum for any single composite sample—TCLP (mg/l)
Generic exclusion levels for K061 and K062 nonwastewater HTMR residues	
Antimony	0.10
Arsenic	0.50
Barium	7.6
Beryllium	0.010
Cadmium	0.050
Chromium (total)	0.33
Lead	0.15
Mercury	0.009
Nickel	1.0
Selenium	0.16
Silver	0.30
Thallium	0.020
Zinc	70

(D) Biological treatment sludge from the treatment of one of the following wastes listed in §261.32—organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste No. K156), and wastewaters from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste No. K157).

Generic exclusion levels for F006 nonwastewater HTMR residues	
Antimony	0.10
Arsenic	0.50
Barium	7.6
Beryllium	0.010
Cadmium	0.050
Chromium (total)	0.33
Cyanide (total) (mg/kg)	1.8
Lead	0.15
Mercury	0.009
Nickel	1.0
Selenium	0.16
Silver	0.30
Thallium	0.020
Zinc	70

(E) Catalyst inert support media separated from one of the following wastes listed in §261.32—Spent hydrotreating catalyst (EPA Hazardous Waste No. K171), and Spent hydrorefining catalyst (EPA Hazardous Waste No. K172).

(2) A one-time notification and certification must be placed in the facility’s files and sent to the EPA region or authorized state for K061, K062 or F006 HTMR residues that meet the generic exclusion levels for all constituents

(d) Any solid waste described in paragraph (c) of this section is not a hazardous waste if it meets the following criteria:

(1) In the case of any solid waste, it does not exhibit any of the characteristics of hazardous waste identified in

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subpart C of this part. (However, wastes that exhibit a characteristic at the point of generation may still be subject to the requirements of part 268, even if they no longer exhibit a characteristic at the point of land disposal.)

(2) In the case of a waste which is a listed waste under subpart D of this part, contains a waste listed under subpart D of this part or is derived from a waste listed in subpart D of this part, it also has been excluded from paragraph (c) of this section under §§260.20 and 260.22 of this chapter.

(e) [Reserved]

(f) Notwithstanding paragraphs (a) through (d) of this section and provided the debris as defined in part 268 of this chapter does not exhibit a characteristic identified at subpart C of this part, the following materials are not subject to regulation under 40 CFR parts 260, 261 to 266, 268, or 270:

(1) Hazardous debris as defined in part 268 of this chapter that has been treated using one of the required extraction or destruction technologies specified in Table 1 of §268.45 of this chapter; persons claiming this exclusion in an enforcement action will have the burden of proving by clear and convincing evidence that the material meets all of the exclusion requirements; or

(2) Debris as defined in part 268 of this chapter that the Regional Administrator, considering the extent of contamination, has determined is no longer contaminated with hazardous waste.

(g)(1) A hazardous waste that is listed in subpart D of this part solely because it exhibits one or more characteristics of ignitability as defined under §261.21, corrosivity as defined under §261.22, or reactivity as defined under §261.23 is not a hazardous waste, if the waste no longer exhibits any characteristic of hazardous waste identified in subpart C of this part.

(2) The exclusion described in paragraph (g)(1) of this section also pertains to:

(i) Any mixture of a solid waste and a hazardous waste listed in subpart D of this part solely because it exhibits the characteristics of ignitability, corrosivity, or reactivity as regulated

under paragraph (a)(2)(iv) of this section; and

(ii) Any solid waste generated from treating, storing, or disposing of a hazardous waste listed in subpart D of this part solely because it exhibits the characteristics of ignitability, corrosivity, or reactivity as regulated under paragraph (c)(2)(i) of this section.

(3) Wastes excluded under this section are subject to part 268 of this chapter (as applicable), even if they no longer exhibit a characteristic at the point of land disposal.

(4) Any mixture of a solid waste excluded from regulation under §261.4(b)(7) and a hazardous waste listed in subpart D of this part solely because it exhibits one or more of the characteristics of ignitability, corrosivity, or reactivity as regulated under paragraph (a)(2)(iv) of this section is not a hazardous waste, if the mixture no longer exhibits any characteristic of hazardous waste identified in subpart C of this part for which the hazardous waste listed in subpart D of this part was listed.

(h)(1) Hazardous waste containing radioactive waste is no longer a hazardous waste when it meets the eligibility criteria and conditions of 40 CFR part 266, Subpart N (“eligible radioactive mixed waste”).

(2) The exemption described in paragraph (h)(1) of this section also pertains to:

(i) Any mixture of a solid waste and an eligible radioactive mixed waste; and

(ii) Any solid waste generated from treating, storing, or disposing of an eligible radioactive mixed waste.

(3) Waste exempted under this section must meet the eligibility criteria and specified conditions in 40 CFR 266.225 and 40 CFR 266.230 (for storage and treatment) and in 40 CFR 266.310 and 40 CFR 266.315 (for transportation

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and disposal). Waste that fails to satisfy these eligibility criteria and conditions is regulated as hazardous waste.

[57 FR 7632, Mar. 3, 1992; 57 FR 23063, June 1, 1992, as amended at 57 FR 37263, Aug. 18, 1992; 57 FR 41611, Sept. 10, 1992; 57 FR 49279, Oct. 30, 1992; 59 FR 38545, July 28, 1994; 60 FR 7848, Feb. 9, 1995; 63 FR 28637, May 26, 1998; 63 FR 42184, Aug. 6, 1998; 66 FR 27297, May 16, 2001; 66 FR 50333, Oct. 3, 2001; 70 FR 34561, June 14, 2005; 70 FR 57784, Oct. 4, 2005; 71 FR 40258, July 14, 2006]

§261.4 Exclusions.

(a) *Materials which are not solid wastes.* The following materials are not solid wastes for the purpose of this part:

(1)(i) Domestic sewage; and

(ii) Any mixture of domestic sewage and other wastes that passes through a sewer system to a publicly-owned treatment works for treatment. "Domestic sewage" means untreated sanitary wastes that pass through a sewer system.

(2) Industrial wastewater discharges that are point source discharges subject to regulation under section 402 of the Clean Water Act, as amended.

[*Comment:* This exclusion applies only to the actual point source discharge. It does not exclude industrial wastewaters while they are being collected, stored or treated before discharge, nor does it exclude sludges that are generated by industrial wastewater treatment.]

(3) Irrigation return flows.

(4) Source, special nuclear or by-product material as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 *et seq.*

(5) Materials subjected to in-situ mining techniques which are not removed from the ground as part of the extraction process.

(6) Pulping liquors (*i.e.*, black liquor) that are reclaimed in a pulping liquor recovery furnace and then reused in the pulping process, unless it is accumulated speculatively as defined in §261.1(c) of this chapter.

(7) Spent sulfuric acid used to produce virgin sulfuric acid, unless it is accumulated speculatively as defined in §261.1(c) of this chapter.

(8) Secondary materials that are reclaimed and returned to the original process or processes in which they were

generated where they are reused in the production process provided:

(i) Only tank storage is involved, and the entire process through completion of reclamation is closed by being entirely connected with pipes or other comparable enclosed means of conveyance;

(ii) Reclamation does not involve controlled flame combustion (such as occurs in boilers, industrial furnaces, or incinerators);

(iii) The secondary materials are never accumulated in such tanks for over twelve months without being reclaimed; and

(iv) The reclaimed material is not used to produce a fuel, or used to produce products that are used in a manner constituting disposal.

(9)(i) Spent wood preserving solutions that have been reclaimed and are reused for their original intended purpose; and

(ii) Wastewaters from the wood preserving process that have been reclaimed and are reused to treat wood.

(iii) Prior to reuse, the wood preserving wastewaters and spent wood preserving solutions described in paragraphs (a)(9)(i) and (a)(9)(ii) of this section, so long as they meet all of the following conditions:

(A) The wood preserving wastewaters and spent wood preserving solutions are reused on-site at water borne plants in the production process for their original intended purpose;

(B) Prior to reuse, the wastewaters and spent wood preserving solutions are managed to prevent release to either land or groundwater or both;

(C) Any unit used to manage wastewaters and/or spent wood preserving solutions prior to reuse can be visually or otherwise determined to prevent such releases;

(D) Any drip pad used to manage the wastewaters and/or spent wood preserving solutions prior to reuse complies with the standards in part 265, subpart W of this chapter, regardless of whether the plant generates a total of less than 100 kg/month of hazardous waste; and

(E) Prior to operating pursuant to this exclusion, the plant owner or operator prepares a one-time notification stating that the plant intends to claim

Waste

Characterization

Questions & Records

Waste Characterization Record

To meet the waste characterization recordkeeping requirements of Rule 307 (MAC R 299.9307), consider creating a record that details your answers to the waste characterization questions provided below. This detail would ensure thorough documentation of your determination and would be in addition to the following records that should already be assembled and available at the site of generation for each waste stream requiring review:

- the waste type
- a narrative description of the waste
- the source of waste
- any test results obtained from sampling and analyzing the waste
- a description of the sampling procedure used
- details on how the sample was determined to be representative of the waste stream
- a copy of any Safety Data Sheets (SDS) or other reference materials relied upon for making the waste determination, including calculations to evaluate subpart BB and CC applicability (ppmv VOC content of the waste)

Waste Characterization Basic Steps

1. Is waste listed? Review lists of waste types & codes in rules.
2. Is waste characteristic? Analytic test or by knowledge (MSDS, knowledge of process, etc.).
3. Does an exclusion or exemption apply?
4. Do other regulations apply? (liquid industrial or solid waste, etc.).
5. Create & maintain records of characterization for at least 3 years from the date waste was last shipped offsite.
6. Re-characterize if there is a change in process or materials.



Waste Characterization Questions

The questions below do not address radioactive waste, infectious or pathogenic medical waste, or Toxic Substance Control Act applicability. Consult with a specialist on these topics if you have a waste that may be subject to these regulations. To locate assistance on these topics, contact the Environmental Assistance Center at 1-800-662-9278 or deg-assist@michigan.gov. When reviewing each question, advance to the next question if you answer NO.

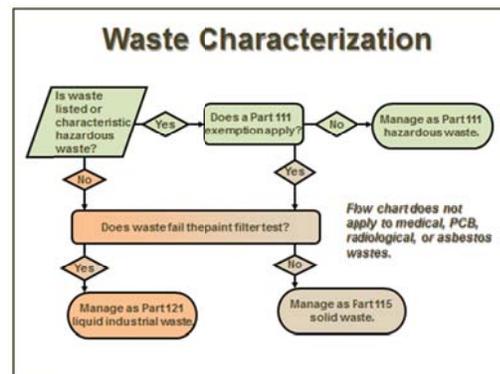
Listed Review

1. Is this an unused raw material?
If Yes: Is there a SDS available?
If Yes: Is material a commercial chemical product listed in Part 111 Table 205a, 205b, or 205c (P or U listed)?
If Yes = Waste is a listed hazardous waste, advance to listed waste exclusion review.
2. Does the waste contain solvents or is it a wastewater treatment waste not discharged directly to the wastewater treatment plant pursuant to a permit issued by the treatment authority?
If Yes: Does the solvent or process generating the waste make the waste a hazardous waste, by definition because it is listed in Part 111, Table 203a (F listed)?
If Yes = Waste is a listed hazardous waste, advance to listed waste exclusion review.
3. Does the process generating the waste make the waste a hazardous waste, by definition because the process waste is listed in Part 111 Table 204a (K listed)?
If Yes = Waste is a listed hazardous waste, advance to listed waste exclusion review.

Listed Waste Exclusion Review

Do any exclusions or exemptions apply?

If Yes: Specify the exclusion found in Rule 202 (waste), Rule 203 (hazardous waste) 204 (exclusion), Rule 205 (CESQG), Rule 206 (recyclable material), Rule 228 (universal waste), etc. and include any relevant documentation substantiating the exclusion applicability in your waste



characterization record, then advance to question 4 to determine if waste exhibits any characteristics that make it a hazardous waste.

If No – Waste remains a listed hazardous waste that must be managed using the listed hazardous waste code. Continue to step 4 to identify any hazardous waste characteristics that apply and must be included on labeling, manifesting, etc.

If analytical data exists, consider whether the process generating the waste changed since the analysis was conducted. Also consider instituting measures to ensure environmental staff is informed by operations and purchasing staff in advance of making any changes. This will allow for the waste to be evaluated prior to waste origination and the waste implications to be considered before the change. Also consider supplementing the characterization records with periodic analysis, even if process and materials are not known to have changed. This will help confirm continued proper management of the waste and that a change was not overlooked, possibly resulting in improper disposal. If re-characterization is necessary, start over at step 1 and create a new waste characterization record.

Characteristic Review

4. Does the waste exhibit a characteristic that makes it a characteristic hazardous waste? Review each characteristic:

- ✓ **Ignitable** - Review whether the waste exhibits a flashpoint ≤ 140 F (using the Penske Martin closed cup test)
- ✓ **Toxic** - Are there constituents on the SDS' for the materials used in the process found in Part 111, Table 201a?
If Yes: Presume the waste exceeds the limit(s) in table 201a and manage the waste as a characteristic hazardous waste for the relevant constituent(s) and waste code(s) or sample and analyze the waste using the Toxicity Characteristic Leaching Procedure or totals test using the 20X rule to determine whether it meets or exceeds the TCLP extract concentration in Table 201a.
If it meets or exceeds the limit, the waste is a characteristic hazardous waste for the relevant waste codes (D004 through D043).
- ✓ **Corrosive** - Review whether the waste exhibits a pH ≤ 2 or ≥ 12.5 (D002)
- ✓ **Reactive** - Review whether the waste is reactive and reacts violently at standard atmospheric conditions or meets any U.S. DOT reactive class standards.
If Yes: Waste is a characteristic hazardous waste, be sure to use all the applicable hazardous waste codes when managing the waste.

Ensure that the product manufacturer has listed all the hazardous constituents on the SDS and not just those relevant to occupational exposure when characterizing waste.

Characteristic Waste Exclusion Review

Do any exclusions or exemptions apply?

If Yes: Specify the exclusion found in Rule 202 (waste), Rule 203 (hazardous waste) 204 (exclusion), Rule 205 (CESQG), Rule 206 (recyclable material), Rule 228 (universal waste), etc. and include any relevant documentation substantiating the exclusion applicability in your waste characterization record, then advance to question 6 to determine what waste regulations apply to the waste.



Be sure to list all relevant waste codes when managing hazardous, conditionally exempt small quantity generator, or liquid industrial waste. Even exempted hazardous waste subject to liquid industrial waste manifesting must be managed listing relevant hazardous waste codes.

Other Waste Regulations Review (Liquid Industrial Waste or Solid Waste)

5. Does the waste pass the paint filter test?

If Yes: Manage as a solid waste to meet the applicable Part 115 requirements

If No: Manage as a liquid industrial waste to meet the applicable Part 121 requirements.

Additional Considerations

When characterizing unknown waste, consider whether you can deduce with certainty the use or type of material it is by looking at the process or location where the waste is found and prior activity associated with the generating facility. Waste with no existing information requires extensive testing and the cost associated with testing can be substantial.

Waste Characterization Record

Form completed by:

Waste description:

Waste source:

Waste type:

Waste codes:

Waste sample details (date, location(s), collection procedure, analysis method, etc.):

Product name for SDS considered:

Subpart BB or CC applicability:

LDR underlying hazardous constituents:

Date Form Completed:

Date Waste Sampled:

Waste Characterization Record

Listed Review

1. Is this an unused raw material that is commercial chemical product listed in Part 111 Table 205a, 205b, or 205c (P or U listed)?
2. Does the waste contain solvents that meets the listing in Table 203a or is the waste a wastewater treatment sludge meeting the listing in Table 203a (F listed)?
3. Does the process generating the waste make the waste a hazardous waste, by definition because the process waste is listed in Part 111 Table 204a (K listed)?

Listed Waste Exclusion Review

List any exclusion relied upon to exclude waste from hazardous waste regulation (e.g. continued use).

Characteristic Review

4. Does the waste exhibit a characteristic that makes it a characteristic hazardous waste?

Ignitable:

Toxic/Acutely Toxic:

Corrosive:

Reactive:

Characteristic Waste Exclusion Review

List any exclusion or partial exclusion relied upon to exclude waste from full hazardous waste regulation (e.g. CESQG, universal waste, scrap metal or solvent rags being recycled, etc.).

Other Waste Regulations Review

5. Does the waste pass the paint filter test?

Attach all supporting documents (lab results, SDS's, calculations, etc.)

Interpretive Memos & Letters

Reed Sneller
G.R.

STATE OF MICHIGAN



JOHN ENGLER, Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY

"Better Service for a Better Environment"

HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973

INTERNET: www.deq.state.mi.us

RUSSELL J. HARDING, Director

REPLY TO:

WASTE MANAGEMENT DIVISION
PO BOX 30241
LANSING MI 48909-7741

August 31, 2001

RECEIVED

SEP 05 2001

WASTE MANAGEMENT DIVISION
GRAND RAPIDS

Mr. Alan Wilds
8135 Donna Place
Williamsville, New York 14221-7311

Dear Mr. Wilds:

This is in response to your August 10, 2001 letter requesting confirmation of the regulatory status of used and unused dental amalgam under Part 111, Hazardous Waste Management, of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). You state that you have had previous discussions with Michigan Department of Environmental Quality (MDEQ), Waste Management Division (WMD) staff regarding the collection and recycling of this amalgam waste.

Your client, SolmeteX, United Parcel Service of America (UPS), and recycling facilities wish to provide a national recycling program through which dentists can recycle their dental amalgam waste. The amalgam waste will be from one of two sources:

1. Unused excess amalgam prepared for restoration work, and
2. Amalgam removed from patients' teeth during repair work.

The amalgam consists of approximately 50 percent mercury, 25 percent silver and smaller quantities of tin, copper and zinc. The amalgam is in solid form.

Amalgam removed from teeth is collected in traps. These traps contain the amalgam particles and prevent them from being discharged with wastewater.

Unused excess amalgam in solid form is defined as scrap metal under Part 111 of the NREPA. Scrap metal exhibiting a characteristic of a hazardous waste is not subject to hazardous waste regulation and may be shipped to a recycling facility as appropriate by other transportation laws and regulations.

If the trap does not contain liquid it may also be regulated as scrap metal. If the trap contains liquid and the wastewater is discharged through a sewer system to a publicly owned treatment works or through a discharge to a surface water body, the trap and its contents are regulated as a "sludge" as defined in Part 111 of the NREPA. Sludges that only exhibit a characteristic of a hazardous waste and are recycled are not subject to regulation as hazardous waste. Liquid wastes not regulated as hazardous waste are subject to the requirements of Part 121, Liquid Industrial Waste, of the NREPA. However, in this case the trap is sealed and placed into a container. It is our interpretation that this type of material is not subject to Part 121 of the

NREPA. Therefore, sealed traps containing small amounts of liquid are not subject to the requirements of Part 121 of the NREPA.

Under the circumstances discussed above, the amalgam may be shipped for recycling under appropriate Department of Transportation regulations. If you have any questions, please contact Mr. Jack Schinderle, at 517-373-8410, or you may contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Jim Sygo". The signature is stylized and overlaps the printed name below it.

Jim Sygo, Chief
Waste Management Division
517-373-9523

cc: Ms. De Montgomery, MDEQ
Ms. Joy Taylor-Morgan, MDEQ
Mr. Steve Kratzer, MDEQ
Mr. Jack Schinderle, MDEQ
RCRA Committee

GR



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING



STEVEN E. CHESTER
DIRECTOR

March 25, 2003

RECEIVED

MAR 27 2003

WASTE AND HAZARDOUS MATERIALS
DIVISION - GRAND RAPIDS

Ms. Terri Zick, CHMM
CTI and Associates, Inc.
12482 Emerson Drive
Brighton, Michigan 48116

Dear Ms. Zick:

This is in response to your January 6, 2003 letter to the Department of Environmental Quality (DEQ) requesting clarification of certain issues pursuant to Part 111, Hazardous Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Part 111). I offer the following response to your questions by topic.

Aerosol Containers

Part 111 does not regulate the residues of hazardous waste that remain in an empty container. An empty container is defined under Part 111 according to the type of waste that the container held.

The Part 111 administrative rules state a container that has held a hazardous waste that is a compressed gas is empty when the pressure in the container approaches atmospheric. A container or an inner liner that is removed from a container which has held an acute hazardous waste or a severely toxic hazardous waste is empty if any of the following criteria are met:

- (a) The container or inner liner has been triple rinsed using a solvent that is capable of removing the commercial chemical product or manufacturing chemical intermediate.
- (b) The container or inner liner has been cleaned by another method that has been shown, in scientific literature or by tests conducted by the generator, to achieve equivalent removal.
- (c) In the case of a container, the inner liner that prevented contact of the commercial chemical product or manufacturing chemical intermediate with the container has been removed.

A container or an inner liner that is removed from a container that has held a hazardous waste, except for a waste which is a compressed gas, an acute hazardous waste, or a severely toxic hazardous waste, is empty if both of the following conditions are met:

- (a) All wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container, such as pouring, pumping, and aspirating.

(b) Not more than 2.5 centimeters (1 inch) of residue remains on the bottom of the container or inner liner, or either of the following conditions is met:

(i) Not more than 3% by weight of the total capacity of the container remains in the container or inner liner if the container is less than or equal to 110 gallons in size.

(ii) Not more than 0.3% by weight of the total capacity of the container remains in the container or inner liner if the container is more than 110 gallons in size.

An aerosol container may contain both a compressed gas and a liquid component. These materials in the aerosol container may be acute or severely toxic hazardous wastes, or not, as well as liquid or gaseous.

The scenarios put forth in your letter involve situations where either the propellant or the liquid components of the aerosol container, or both, exhibit a characteristic of a hazardous waste. The rules address the gaseous component and the liquid component independently. However, due to the potential mixing of hazardous and non-regulated contents in the aerosol container and the inherent difficulty in properly characterizing the remaining contents, the DEQ advises generators of aerosol containers to utilize the criteria for defining empty containers of both the compressed gas and the liquid fraction.

This dual criterion is also necessary when both components exhibit a hazardous waste characteristic, if one or more component is a listed hazardous waste, and if one or both components are acutely hazardous or severely toxic.

Aerosol containers that contain hazardous waste and are not empty are subject to land disposal restrictions, including a determination of underlying hazardous constituents (UHC), when necessary. You asked whether the information contained on the material safety data sheet (MSDS) is adequate to make this determination.

As defined in the Code of Federal Regulations, Title 40, Part 268, Section 2, underlying hazardous constituent means any constituent listed in Sec. 268.48, Table UTS--Universal Treatment Standards, except fluoride, selenium, sulfides, vanadium, and zinc, which can reasonably be expected to be present at the point of generation of the hazardous waste at a concentration above the constituent-specific UTS treatment standards. In order to determine whether the MSDS can be solely utilized to determine UHC compliance, the concentrations of constituents expected to be present must be identified on the MSDS in concentrations low enough to compare to the UTS treatment standards.

Clean-up Media

The Part 111 administrative rules adopt by reference the federal land disposal restriction (LDR) requirements found in the Code of Federal Regulations, Title 40, Part 268. The LDR requirements contain alternate treatment standards for soils containing hazardous waste.

You state that soils and other man-made media are often used to contain and clean up spills. You ask about the application of the LDR standards to soils or man-made media when the spill is cleaned up immediately.

We are currently discussing the questions in your letter with the United States Environmental Protection Agency (US EPA). I will provide answers when I get a clear understanding from the US EPA.

On-site Treatment

The Part 111 administrative rules allow generator treatment in tanks or containers under the conditions identified in R 299.9503(1)(i). The DEQ allows generator treatment under rule 503(1)(i) in either a satellite accumulation area or generator accumulation area. This exemption from construction permit and operating license applies to most any treatment that can be safely performed by the generator in accumulation tanks or containers. The DEQ does not authorize or approve any specific generator treatment.

If you have any questions regarding this letter please contact me at the number below.

Sincerely,



Jack Schinderle
Hazardous Waste and Radiological Protection
Section
Waste and Hazardous Materials Division
517-373-8410

cc: Mr. Steve Sliver, DEQ
RCRA Committee

RCRA Committee

William Yocum, Lansing District Office
Trisha Peters, Saginaw Bay District Office
Tina Straw, OCI
Reed Sneller, Grand Rapids District Office
Phillip Roycraft, Cadillac District Office
Nadine Deak, Kalamazoo District Office
Lynne King, SE Michigan District Office
Leonard Switzer, Marquette District Office
Lawrence AuBuchon, SE Michigan District Office
Judy Schaefer, ESSD
Jenny Bennett, Gaylord District Office
Jack Schinderle
Elizabeth Bols, Grand Rapids District Office
Christine Kearns, C&E Section
Cheryl Howe



STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

*As Directed
SPR*
DEQ

JENNIFER M. GRANHOLM
GOVERNOR

STEVEN E. CHESTER
DIRECTOR

September 29, 2003

Ms. Mary King, PE, CHMM
EHS & Quality Manager
Micronutrients
1550 Research Way
Indianapolis, Indiana 46231

RECEIVED

OCT 08 2003

WASTE AND HAZARDOUS MATERIALS
DIVISION - GRAND RAPIDS

Dear Ms. King:

This is in response to your August 28, 2003, letter requesting concurrence that certain materials are not regulated as wastes pursuant to Part 111, Hazardous Waste Management, of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). You provided additional information in a September 11, 2003, correspondence.

Micronutrients processes spent etchants (both ammonium hydroxide and hydrochloric acid) from the printed wire board industry. These spent etchants contain copper from dissolving copper from printed wire boards and are processed to produce a copper micronutrient animal feed known as *Micronutrients TBCC*[®]. The spent etchants replace copper solutions derived from dissolving copper from copper oxides, copper containing sludges, copper mine concentrates, or scrap copper. The information provided supports the claim that the etchants are preferred over these other ingredients because they are of higher purity, consistent, and eliminate one or more processing steps.

Micronutrients has provided specifications for receipt of incoming spent etchants. Those etchants that do not meet specifications are rejected for use in the process.

As you know, the spent etchants may not be reclaimed prior to being used or reused. Indiana and the United States Environmental Protection Agency have reviewed the process and determined that reclamation does not occur prior to use/reuse. The Michigan Department of Environmental Quality (MDEQ) is deferring to the reclamation determination previously made by these agencies.

Based on the information submitted, and provided that there is no speculative accumulation, use constituting disposal, or burning for energy recovery, the MDEQ concurs that the spent etchants used to produce *Micronutrients TBCC*[®] are not wastes pursuant to R 299.9202(3). Additionally, these spent etchants are not subject to regulation under Part 121, Liquid Industrial Wastes, of NREPA.

If the process, end uses or feedstocks change this interpretation may change. If you have any questions regarding this letter, please contact me at the telephone number below.

Sincerely,

Jack Schinderle
Hazardous Waste and Radiological Protection
Waste and Hazardous Materials Division
517-373-8410

cc: RCRA Committee



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

Handwritten signature
DEQ
STEVEN E. CHESTER
DIRECTOR

June 4, 2004

RECEIVED

JUN 08 2004

WASTE AND HAZARDOUS MATERIALS
DIVISION - GRAND RAPIDS

Mr. John A. Prokes
Regional Environmental Director
Environmental Testing & Consulting, Inc.
2530 Three Mile Road North
Traverse City, Michigan 49686

Dear Mr. Prokes:

The Department of Environmental Quality (DEQ), Waste and Hazardous Materials Division (WHMD), has reviewed the petition in support of exempting certain ink waste under Part 111, Hazardous Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. The petition was submitted September 10, 2003, and supplemented February 10, 2004, in support of the claim that the United States Postal Service's (USPS's) automated facer canceled system (AFCS) ink should be exempt pursuant to R 299.9204(2)(f) of the administrative rules promulgated pursuant to Part 111.

Wastes that fail the test for the toxicity characteristic because chromium is present, that do not fail the test for the toxicity characteristic for any other constituent, and are not hazardous waste for any other characteristic or listing are not hazardous waste if it is shown by the generator that the following conditions are met:

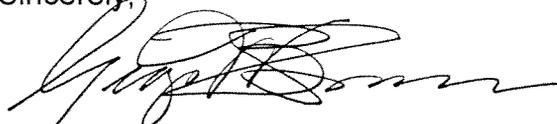
1. The chromium in the waste is exclusively, or nearly exclusively, trivalent chromium.
2. The waste is generated from an industrial process that uses trivalent chromium exclusively, or nearly exclusively, and the process does not generate hexavalent chromium.
3. The waste is typically and frequently managed in nonoxidizing environments.

The USPS's Processing and Distribution Centers in Michigan generate waste ink during equipment cleaning. The chromium is found in the specially-formulated ink used to cancel stamps. The USPS may use alcohol, water, and/or detergents to clean the equipment. When alcohol is used, the flash point of the resulting waste material may exhibit the hazardous waste characteristic of ignitability. Waste ink and ink solutions that exhibit the characteristic of ignitability are not eligible for the exclusion of R 299.9204(2)(f). Because the USPS is converting to aqueous or high flash cleaning systems, the future ink cleanup wastes will not exhibit the characteristic of ignitability or any other characteristic except for chromium.

The USPS has, through contractors, demonstrated that the waste AFCS ink is not hazardous for any reason except for exhibiting the toxicity characteristic for chromium, which meets the conditions outlined in R 299.9204(2)(f). Therefore, this waste is not a hazardous waste, and the DEQ will proceed to amend the administrative rules to include USPS AFCS ink waste in R 299.9204(2)(g) at the next opportunity.

If you have any questions regarding this letter, please contact Mr. Jack Schinderle, Hazardous Waste and Radiological Protection Section, WHMD, at 517-373-8410, or you may contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "George W. Bruchmann". The signature is fluid and cursive, with a large initial "G" and "B".

George W. Bruchmann, Chief
Waste and Hazardous Materials Division
517-373-9523

cc: Ms. Liane Shekter Smith, DEQ
WHMD District Supervisors, DEQ
Ms. Ronda Blayer, DEQ
Mr. Jack Schinderle, DEQ



STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

RERO SUREARR



JENNIFER M. GRANHOLM
GOVERNOR

STEVEN E. CHESTER
DIRECTOR

September 29, 2009

RECEIVED

Mr. Timothy J. Hylla, Vice President
EMA
10627 Midwest Industrial Drive
St. Louis, Missouri 63132

OCT 01 2009

WASTE AND HAZARDOUS MATERIALS
DIVISION - GRAND RAPIDS

Dear Mr. Hylla:

This is in response to your request for concurrence under Part 111, of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, that certain previously used solvents are legitimately reused when used to clean tankers in an out-of-state tank wash program. Michigan administrative rule, R 299.9202, excludes certain material from regulation as a waste when they are legitimately used or reused.

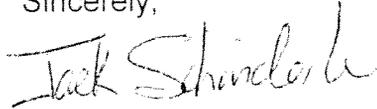
Based on the information provided, the example solvent stream appears to be an effective substitute for commercially available solvents. The Michigan Department of Environmental Quality, Waste and Hazardous Materials Division, concurs that these relatively clean solvents reused under the tanker wash programs approved by the states of Missouri and Indiana and meeting the following conditions are not wastes pursuant to Part 111.

In order to ensure that the solvent reuse is effective the solvent must meet the specifications below:

- 1) The material is a solvent or solvent blend.
- 2) A load of material is used to clean multiple tankers.
- 3) The solvent material does not contain metals at characteristic levels.
- 4) Any participating generator must maintain documentation, available for inspection, demonstrating acceptance into the program, including contracts, and conformance with all specifications.
- 5) The out-of-state truck wash programs are operated in accordance with that state's applicable laws and approvals.
- 6) The reuse material does not leave a heel in the tanker requiring removal to obtain an empty container as defined in R 299.9207 of the Part 111 Rules. All the material must be reused.
- 7) All the material must be reused. Components may not be separated during storage or handling.
- 8) The reuse solvent must contain less than two parts per million of polychlorinated biphenyl.
- 9) The reuse material must be evaluated to ensure it is compatible with the process, including any storage.
- 10) The material must be re-evaluated whenever there is a change to the process generating the solvent or there is a change in any aspect of the reuse.

If you have any questions related to this letter, please contact me by telephone at the number below or via e-mail at schinderlej@michigan.gov.

Sincerely,

A handwritten signature in black ink that reads "Jack Schinderle". The signature is written in a cursive style with a large, prominent "J" and "S".

Jack Schinderle, Chief
Waste Tracking and Data Management Unit
Hazardous Waste Section
Waste and Hazardous Materials Division
517-373-8410

cc: RCRA Committee

INTEROFFICE COMMUNICATION

November 15, 2000

TO: Environmental Response Division and Storage Tank Division District Supervisors

FROM: Jim Sygo, Chief, Waste Management Division

SUBJECT: Guidance for Requirements for Remedial Activities under Part 111, Hazardous Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA)

In order to maintain compliance with the requirements of Part 111 during remedial activities, one must first determine whether contaminated soils and other residuals are regulated as hazardous waste. This document is intended to make Department of Environmental Quality (Department) staff aware of Part 111 requirements that may affect activities during remedial actions. Excavated soils, soil cuttings, condensate from air stripping operations, purge waters, etc., generated under actions taken pursuant to Part 201, Environmental Remediation, and Part 213, Leaking Underground Storage Tanks, of the NREPA may be subject to portions of Part 111.

In order to determine if Part 111 is applicable, any impacted media must be evaluated to determine whether they contain hazardous waste. The hazardous waste determination must evaluate both the hazardous waste listings (Attachment A) and hazardous waste characteristics (Attachment B) identified in the Part 111 administrative rules and the Resource Conservation and Recovery Act of 1976 (RCRA). Any remedial waste that contains a listed hazardous waste and/or exhibits a hazardous waste characteristic is subject to the applicable provisions of Part 111 and RCRA.

The process of identifying hazardous waste listings (Attachment A) for remedial actions can be difficult because the hazardous waste designation is dependent upon the source of the waste and upon the process by which it is generated instead of contaminant concentrations. Determining whether contamination is the result of listed hazardous waste is also more difficult at older remedial sites due to a lack of records. However, it is very important that available information is sought out and evaluated to determine proper management. There is no presumption of listing. The contaminated media must be managed as listed hazardous waste only if the contamination can be attributed to a listed hazardous waste identified under the current version of the Part 111 administrative rules or the federal RCRA. Environmental media (soil and groundwater) contaminated with a listed hazardous waste is subject to Part 111 and RCRA as long as it contains the listed constituents. The Waste Management Division (WMD) does not consider environmental media to contain listed hazardous waste if the concentrations in the media are less than the Type A and/or Type B criteria as defined by the administrative rules promulgated pursuant to Part 201 of the NREPA (R 299.95711).

Example: A product tank containing unused xylene leaks contaminating surrounding soil. Attachment A identifies the commercial chemical product xylene as U239 when disposed. Therefore, the contaminated soil containing concentrations of xylene over the Type B criteria must be managed as hazardous waste when generated.

November 15, 2000

Example: A lagoon is undergoing closure that once treated wastewaters from electroplating operations. Upon evaluation of the available records, it is determined that the electroplating processes employed at the facility generate a sludge that is deposited in the lagoon that meets the F006 listing. Therefore, the contaminated soil and groundwater containing F006 constituents over the Type B criteria must be managed as hazardous waste when generated.

Example: An old dump site is being remediated. Solvent contamination is discovered in the underlying soils and groundwater. A thorough search of available information confirms that generally solvents were disposed, however, they do not specifically link the specific solvents discovered to any current Part 111 listings. The soil and groundwater are not considered listed hazardous waste and must be evaluated for hazardous waste characteristics to determine Part 111 applicability.

The process of identifying waste by a hazardous waste characteristic (Attachment B) is more straightforward. If the media does not exhibit a hazardous waste characteristic, it is not subject to regulation under Part 111 or RCRA.

Example: Soil has been contaminated by historic spills of gasoline. Upon evaluating gasoline for potential listings, it is determined that gasoline is not a listed hazardous waste. However, it is determined that lead is detected in Toxicity Characteristic Leaching Procedure extract at concentrations above the 5.0 mg/l regulatory level under the toxicity characteristic. The soil must be managed as hazardous waste when generated.

If the media is determined to be hazardous waste, it must be understood that excavation or generation may subject site activities to hazardous waste management requirements. Tanks, wastepiles, and treatment units may be subject to permitting and technical requirements of Part 111. Additionally, wastes that remain in-situ and would be determined to be a hazardous waste if generated must be protected from future site activities by having a deed restriction placed on the property, pursuant to Section 20120(c) of the NREPA. This deed restriction must be registered to ensure that future owners and operators are aware of the character of the media and the regulations that may govern future management of the media.

It is important to perform these waste classifications early in a remediation project or incident response. This helps the Department avoid authorizing illegal waste piles and helps make proper handling and disposal decisions.

The WMD staff involved in implementing the hazardous waste program should be consulted by other programs to determine the applicability of Part 111 for their projects.

If you have questions, please contact Jack Schinderle of the Hazardous Waste Program Section, at 373-8410, or you may contact me, at 373-9523.

Attachments

A handwritten signature in black ink, appearing to read "Jack Schinderle", is located in the bottom right corner of the page. The signature is written in a cursive style with a large loop at the end.

WMD District Supervisors

Page 2

November 15, 2000

cc: George Bruchmann, WMD
Frank Ruswick, WMD
JoAnn Merrick, WMD
Ken Burda, WMD
Steve Buda, WMD
De Montgomery, WMD
WMD District Supervisors
Jack Schinderle, WMD

cc/att: Alan Howard, ERD
Roger Przybysz/Andrea Zajac, STD
Phil Schrantz, ERD
Lynelle Marolf, ERD

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

November 25, 1992

David Bozaan
Groundwater Technology
223 Wilmington West Chester Pike
Chadds Ford, PA 19317

Dear Mr. Bozaan:

Thank you for your October 23, 1991 letter to David Bussard concerning recovered petroleum products. I apologize for the long delay in answering your questions. I understand that you have since contacted and received responses from most of the states in which you conduct business. As a matter of policy, we always suggest that members of the regulated community do just that, since states can promulgate stricter standards.

1. The "Free Product" Issue.

In your letter, you referred to a preamble statement from the Toxicity Characteristic final rule (published on March 29, 1990, at 55 Federal Register 11836) that defines wastes as hazardous under the Resource Conservation and Recovery Act (RCRA) Subtitle C regulations. The statement in question refers to cleanups of contaminated soil and groundwater from petroleum product storage tanks regulated under RCRA's Subtitle I program for underground storage tanks (USTs). It reads:

"Moreover, the UST cleanup activities involving the most contaminated media and debris are also likely to involve free product recovery. Free product recovery would not be subject to Subtitle C requirements because the material being recovered is not a waste."

This statement was intended to describe the status of recovered "free product," or products that had been stored, spilled, and were subsequently recovered for use or reuse in their normal manner. If the product was going to be discarded instead of used in its normal manner, it would be a waste (and, potentially, a hazardous waste). In order to qualify for an exemption, the generator has the burden of proving that a material is not a solid waste, or is conditionally excluded from regulation (40 CFR 261.2); a generalized assertion that a material is being recycled does not necessarily satisfy this burden. The Agency discussed this issue in more detail with respect to commercial chemical products in the preamble to the Land Disposal Restrictions Third Third Final Rule (55 FR 22671, June 1, 1990). In that preamble (see attached), the Agency described some of the considerations that may be appropriate in characterizing the legitimacy of a claim that a spilled material is not a solid waste based on its being recycled. You should continue to deal with the implementing agencies for detailed guidance on what will satisfy this

burden. Generally, you will likely be asked to show that the material is suitable for, and actually is used as fuel, or to make a fuel.

2. Commercial Chemical Products.

Under the Subtitle C regulations defining materials as “solid wastes” potentially subject to the hazardous waste requirements, commercial chemical products that are reclaimed are not wastes (see 40 CFR 261.2(c)(3)). Although the regulation specifically says “commercial chemical products listed in 40 CFR 261.33,” we meant also to include commercial chemical products that are not specifically listed in 40 CFR 261.33 as well (for example, a commercial chemical product that exhibits the ignitability characteristic identified at 40 CFR 261.21). We clarified this principle in a technical correction notice published on April 11, 1985 (55 Federal Register 14219, copy enclosed).

In addition, the regulations at 40 CFR 261.2(c)(2) state that, when used as fuels, commercial chemical products listed in 40 CFR 261.33 are not solid wastes if they are themselves fuels. The same logic applies to commercial chemical products that are not specifically listed, but that exhibit a hazardous characteristic. Although the April 11, 1985 technical correction notice could be read to imply that commercial chemical products burned for energy recovery are wastes, please be assured that a commercial chemical product normally used as a fuel (such as gasoline) is considered to be used in a manner consistent with its normal product use if it is burned for energy recovery or used to produce a fuel. Thus, it would not be a waste [see 40 CFR 261.2(c) (2) (ii)].

3. Specific Questions.

Q) Is recovered free product regulated as a Subtitle C waste if the waste disposal facility which receives the material puts it into a fuels blending program? (If yes, then gasoline, we presume, would be classified as a D001 ignitable hazardous waste).

A) Recovered free product that is normally used as a fuel is not regulated as a RCRA Subtitle C waste if it is used as an ingredient to make a fuel (e.g., by blending into fuel). Gasoline is not regulated as a RCRA Subtitle C hazardous waste when it is put into a fuel blending program. In contrast, a commercial chemical product that is not normally used as a fuel, e.g., a pesticide, would be a RCRA Subtitle C waste if put into a fuel blending program.

Q) Would free product recovered from a UST corrective action (Part 280, Subpart F) be excluded from being regulated as a D018 to D043 toxicity characteristic hazardous waste?

A) Commercial chemical products normally used as fuels, that are free product recovered from a UST corrective action under 40 CFR Part 280, Subpart F, and that are put into a fuel blending program, are not regulated as wastes and thus would be excluded from regulation as a D018 to D043 waste (as well as any other EPA hazardous waste number). If the same commercial chemical product is sent for disposal, however (e.g., in

a landfill), it is a waste and thus may be a hazardous waste¹.

Commercial chemical products that are not normally used as fuels would be wastes if they are to be burned for energy recovery². Thus, typically, recovered free products that are not normally used as fuels would be regulated as hazardous wastes if they were sent to be burned or used in fuel, and exhibited one of the hazardous waste characteristics (or were specifically listed).

Q) Is recovered free product excluded from Subtitle C regulation if it is reused as gasoline by either: 1) being refined by a refinery for resale, or 2) being added to a large bulk storage tank for resale without processing?

A) Gasoline that is recovered and used as a fuel, either by sending to a refinery for re-refining, or combining with other gasoline directly for resale, with no processing (or with some processing, for that matter), is not a waste and thus is excluded from RCRA Subtitle C regulation.

I hope this letter responds to your questions. If you have further questions, please contact Julie Lyddon of my staff at (202) 260-8551. I would, however, encourage you to continue checking with the implementing agency (RCRA-authorized state or EPA regional office) whenever you have questions about specific sites or circumstances.

Sincerely,

Jeffery D. Denit
Deputy Director,
Office of Solid Waste

FaxBack # 11713

¹ Note that petroleum-contaminated media and debris identified as D018 through D043 wastes are excluded from regulation as a hazardous waste under 40 CFR 261.4 (b) (10).

² See footnote 1.

LDR Resources

Land Disposal Restriction

Michigan's land disposal restrictions are found in Rule 311 (MAC R 299.9311) of the Part 111 rules of Act 451, the Michigan Natural Resource and Environmental Protection Act. They adopt the federal land disposal restrictions found in [40 CFR, Part 268](#). The land disposal restrictions (LDRs) require most hazardous waste to be treated prior to being disposed. The LDRs apply to hazardous waste generated by small and large quantity generators of hazardous waste. They do not apply to hazardous waste generated by conditionally exempt small quantity generators of hazardous waste.

The land disposal restrictions require that small and large quantity generators of hazardous waste provide an initial notice for each hazardous waste shipped to each treatment, storage and disposal facility. The notice must state whether the waste must be treated prior to being land disposed and identify the underlying hazardous constituents (UHCs) in the waste. Notification is required even if the waste is destined for non-land based disposal (e.g. incineration). Most disposal vendors assist generators with completion of their LDR notifications. However, it is ultimately the responsibility of the generator to complete the notice.

To determine whether treatment is required and identify the UHCs for a waste, review the standards found in 40 CFR [268.40](#) for hazardous waste, 40 CFR [268.45](#) for contaminated debris, or 40 CFR [268.49](#) for contaminated soil. For each waste stream, the generator must review the hazardous waste codes associated with each waste listed in the relevant LDR table, identify the UHCs associated with the waste, and whether the waste meets or exceeds the limits and requires treatment prior to land disposal.

LDR records must be maintained on-site for at least three years from the date the waste was last shipped for disposal. See the excerpt from 40 CFR 268.40 that follows for more detail on the LDR standards, along with the LDR example notification and UHC form.

(3) The wastes meet the applicable alternate treatment standards established pursuant to a petition granted under § 268.44;

(4) Persons have been granted an extension to the effective date of a prohibition pursuant to § 268.5, with respect to these wastes covered by the extension.

(g) To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards specified in § 268.40, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents in excess of the applicable Subpart D levels, the waste is prohibited from land disposal, and all requirements of this part 268 are applicable, except as otherwise specified.

[61 FR 15663, Apr. 8, 1996, as amended at 61 FR 33683, June 28, 1996; 62 FR 1997, Jan. 14, 1997; 62 FR 32979, June 17, 1997; 62 FR 37699, July 14, 1997; 63 FR 51264, Sept. 24, 1998]

Subpart D—Treatment Standards

§ 268.40 Applicability of treatment standards.

(a) A prohibited waste identified in the table “Treatment Standards for Hazardous Wastes” may be land disposed only if it meets the requirements found in the table. For each waste, the table identifies one of three types of treatment standard requirements:

(1) All hazardous constituents in the waste or in the treatment residue must be at or below the values found in the table for that waste (“total waste standards”); or

(2) The hazardous constituents in the extract of the waste or in the extract of the treatment residue must be at or below the values found in the table (“waste extract standards”); or

(3) The waste must be treated using the technology specified in the table (“technology standard”), which are described in detail in § 268.42, Table 1—Technology Codes and Description of Technology-Based Standards.

(b) For wastewaters, compliance with concentration level standards is based

on maximums for any one day, except for D004 through D011 wastes for which the previously promulgated treatment standards based on grab samples remain in effect. For all nonwastewaters, compliance with concentration level standards is based on grab sampling. For wastes covered by the waste extract standards, the test Method 1311, the Toxicity Characteristic Leaching Procedure found in “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,” EPA Publication SW-846, as incorporated by reference in § 260.11, must be used to measure compliance. An exception is made for D004 and D008, for which either of two test methods may be used: Method 1311, or Method 1310B, the Extraction Procedure Toxicity Test. For wastes covered by a technology standard, the wastes may be land disposed after being treated using that specified technology or an equivalent treatment technology approved by the Administrator under the procedures set forth in § 268.42(b).

(c) When wastes with differing treatment standards for a constituent of concern are combined for purposes of treatment, the treatment residue must meet the lowest treatment standard for the constituent of concern.

(d) Notwithstanding the prohibitions specified in paragraph (a) of this section, treatment and disposal facilities may demonstrate (and certify pursuant to 40 CFR 268.7(b)(5)) compliance with the treatment standards for organic constituents specified by a footnote in the table “Treatment Standards for Hazardous Wastes” in this section, provided the following conditions are satisfied:

(1) The treatment standards for the organic constituents were established based on incineration in units operated in accordance with the technical requirements of 40 CFR part 264, subpart O, or based on combustion in fuel substitution units operating in accordance with applicable technical requirements;

(2) The treatment or disposal facility has used the methods referenced in paragraph (d)(1) of this section to treat the organic constituents; and

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(3) The treatment or disposal facility may demonstrate compliance with organic constituents if good-faith analytical efforts achieve detection limits for the regulated organic constituents that do not exceed the treatment standards specified in this section by an order of magnitude.

(e) For characteristic wastes (D001–D043) that are subject to treatment standards in the following table “Treatment Standards for Hazardous Wastes,” and are not managed in a wastewater treatment system that is regulated under the Clean Water Act (CWA), that is CWA-equivalent, or that is injected into a Class I nonhazardous deep injection well, all underlying hazardous constituents (as defined in §268.2(i)) must meet Universal Treatment Standards, found in §268.48, Table Universal Treatment Standards, prior to land disposal as defined in §268.2(c) of this part.

(f) The treatment standards for F001–F005 nonwastewater constituents carbon disulfide, cyclohexanone, and/or methanol apply to wastes which contain only one, two, or three of these constituents. Compliance is measured for these constituents in the waste extract from test Method 1311, the Toxicity Characteristic Leaching Procedure found in “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods”, EPA Publication SW-846, as incorporated by reference in §260.11. If the waste contains any of these three constituents along with any of the other 25 constituents found in F001–F005, then compliance with treatment standards for carbon disulfide, cyclohexanone, and/or methanol are not required.

(g) Between August 26, 1996 and March 4, 1999 the treatment standards for the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste numbers K156–K161; and in 40 CFR 261.33 as EPA Hazardous Waste numbers P127, P128, P185, P188–P192, P194, P196–P199, P201–P205, U271, U277–U280, U364–U367, U372,

U373, U375–U379, U381–U387, U389–U396, U400–U404, U407, and U409–U411; and soil contaminated with these wastes; may be satisfied by either meeting the constituent concentrations presented in the table “Treatment Standards for Hazardous Wastes” in this section, or by treating the waste by the following technologies: combustion, as defined by the technology code CMBST at §268.42 Table 1, for nonwastewaters; and, biodegradation as defined by the technology code BIODG, carbon adsorption as defined by the technology code CARBN, chemical oxidation as defined by the technology code CHOXD, or combustion as defined as technology code CMBST at §268.42 Table 1, for wastewaters.

(h) Prohibited D004–D011 mixed radioactive wastes and mixed radioactive listed wastes containing metal constituents, that were previously treated by stabilization to the treatment standards in effect at that time and then put into storage, do not have to be re-treated to meet treatment standards in this section prior to land disposal.

(i) [Reserved]

(j) Effective September 4, 1998, the treatment standards for the wastes specified in 40 CFR 261.33 as EPA Hazardous Waste numbers P185, P191, P192, P197, U364, U394, and U395 may be satisfied by either meeting the constituent concentrations presented in the table “Treatment Standards for Hazardous Wastes” in this section, or by treating the waste by the following technologies: combustion, as defined by the technology code CMBST at §268.42 Table 1 of this Part, for nonwastewaters; and, biodegradation as defined by the technology code BIODG, carbon adsorption as defined by the technology code CARBN, chemical oxidation as defined by the technology code CHOXD, or combustion as defined as technology code CMBST at §268.42 Table 1 of this Part, for wastewaters.

TREATMENT STANDARDS FOR HAZARDOUS WASTES
 [Note: NA means not applicable]

Waste code	Waste description and treatment/Regulatory subcategory ¹	Regulated hazardous constituent			Nonwastewaters
		Common name	CAS ² number	Wastewaters	
D001 ^a	Ignitable Characteristic Wastes, except for the § 261.21(a)(1) High TOC Subcategory.	NA	NA	DEACT and meet § 268.48 standards ^e ; or RORGS; or CMBST	Concentration ⁵ in mg/kg unless noted as "mg/L TOLP"; or Technology Code ⁴
	High TOC Ignitable Characteristic Liquids Subcategory based on 40 CFR 261.21(a)(1)—Greater than or equal to 10% total organic carbon. (Note: This subcategory consists of nonwastewaters only.)	NA	NA	DEACT and meet § 268.48 standards ^e ; or RORGS; or CMBST	DEACT and meet § 268.48 standards ^e ; or RORGS; or CMBST
D002 ^a	Corrosive Characteristic Wastes.	NA	NA	DEACT and meet § 268.48 standards ^a	DEACT and meet § 268.48 standards ^a
D002, D004, D005, D006, D007, D008, D009, D010, D011	Radioactive high level wastes generated during the reprocessing of fuel rods. (Note: This subcategory consists of nonwastewaters only.)	Corrosivity (pH) Arsenic Barium Cadmium Chromium (Total) Lead Mercury Selenium Silver	NA 7440-38-2 7440-39-3 7440-43-9 7440-47-3 7439-92-1 7439-97-6 7782-49-2 7440-22-4	NA NA NA NA NA NA NA NA	HLVIT HLVIT HLVIT HLVIT HLVIT HLVIT HLVIT HLVIT
D003 ^a	Reactive Sulfides Subcategory based on 261.23(a)(5).	NA	NA	DEACT	DEACT
	Explosives Subcategory based on 261.23(a)(6),(7), and (8).	NA	NA	DEACT and meet § 268.48 standards ^a	DEACT and meet § 268.48 standards ^a
	Unexploded ordnance and other explosive devices which have been the subject of an emergency response.	NA	NA	DEACT	DEACT
	Other Reactives Subcategory based on 261.23(a)(1).	NA	NA	DEACT and meet § 268.48 standards ^a	DEACT and meet § 268.48 standards ^a

	NA	NA	NA	NA	DEACT and meet §268.48 standards ^a
	Water Reactive Subcategory based on 261.23(a)(2), (3), and (4). (Note: This subcategory consists of nonwastewaters only).				
	Reactive Cyanides Subcategory based on 261.23(a)(5).	Cyanides (Total) ⁷ Cyanides (Amenable) ⁷	57-12-5 57-12-5	Reserved 0.86	590 30
D004 ⁹	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for arsenic based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Arsenic	7440-38-2	1.4 and meet §268.48 standards ^a	5.0 mg/L TCLP and meet §268.48 standards ^a
D005 ⁹	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for barium based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Barium	7440-39-3	1.2 and meet §268.48 standards ^a	21 mg/L TCLP and meet §268.48 standards ^a
D006 ⁹	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for cadmium based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Cadmium	7440-43-9	0.69 and meet §268.48 standards ^a	0.11 mg/L TCLP and meet §268.48 standards ^a
	Cadmium Containing Batteries Subcategory. (Note: This subcategory consists of nonwastewaters only).	Cadmium	7440-43-9	NA	RTHRM
	Radioactively contaminated cadmium containing batteries. (Note: This subcategory consists of nonwastewaters only)	Cadmium	7440-43-9	NA	Macroencapsulation in accordance with 40 CFR 268.45.
D007 ⁹	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for chromium based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Chromium (Total)	7440-47-3	2.77 and meet §268.48 standards ^a	0.60 mg/L TCLP and meet §268.48 standards ^a
D008 ⁹	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for lead based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Lead	7439-92-1	0.69 and meet §268.48 standards ^a	0.75 mg/L TCLP and meet §268.48 standards ^a
	Lead Acid Batteries Subcategory. (Note: This standard only applies to lead acid batteries that are identified as RCRA hazardous wastes and that are not excluded elsewhere from regulation under the land disposal restrictions of 40 CFR 268 or exempted under other EPA regulations (see 40 CFR 266.80). This subcategory consists of nonwastewaters only.)	Lead	7439-92-1	NA	RLEAD
	Radioactive Lead Solids Subcategory. (Note: These lead solids include, but are not limited to, all forms of lead shielding and other elemental forms of lead. These lead solids do not include treatment residuals such as hydroxide sludges, other wastewater treatment residuals, or incinerator ashes that can undergo conventional pozzolanic stabilization, nor do they include organo-lead materials that can be incinerated and stabilized as ash. This subcategory consists of nonwastewaters only.)	Lead	7439-92-1	NA	MACRO

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued
 [Note: NA means not applicable]

Waste code	Waste description and treatment/Regulatory subcategory ¹	Regulated hazardous constituent			Wastewaters	Nonwastewaters
		Common name	CAS ² number	Concentration ³ in mg/L, or Technology Code ⁴	Concentration ⁵ in mg/kg unless noted as "mg/L TCLP"; or Technology Code ⁴	
D009 ^a	Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain greater than or equal to 260 mg/kg total mercury that also contain organics and are not incinerator residues. (High Mercury-Organic Subcategory)	Mercury	7439-97-6	NA	IMERC; OR RMERC	
	Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain greater than or equal to 260 mg/kg total mercury that are inorganic, including incinerator residues and residues from RMERC. (High Mercury-Inorganic Subcategory)	Mercury	7439-97-6	NA	RMERC	
	Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain less than 260 mg/kg total mercury and that are residues from RMERC only. (Low Mercury Subcategory)	Mercury	7439-97-6	NA	0.20 mg/L TCLP and meet § 268.48 standards ^a	
	All other nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain less than 260 mg/kg total mercury and that are residues from RMERC. (Low Mercury Subcategory)	Mercury	7439-97-6	NA	0.025 mg/L TCLP and meet § 268.48 standards ^a	
	All D009 wastewaters.	Mercury	7439-97-6	0.15 mg/L TCLP and meet § 268.48 standards ^a	NA	
	Elemental mercury contaminated with radioactive materials. (Note: This subcategory consists of nonwastewaters only.)	Mercury	7439-97-6	NA	AMLGM	
	Hydraulic oil contaminated with Mercury Radioactive Materials Subcategory. (Note: This subcategory consists of nonwastewaters only.)	Mercury	7439-97-6	NA	IMERC	
	Radioactively contaminated mercury containing batteries. (Note: This subcategory consists of nonwastewaters only.)	Mercury	7439-97-6	NA	Macroencapsulation in accordance with 40 CFR 268.45.	

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D010 ^a	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for selenium based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Selenium	7782-49-2	0.82 and meet §268.48 standards ^a	5.7 mg/L TCLP and meet §268.48 standards ^a
D011 ^a	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for silver based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Silver	7440-22-4	0.43 and meet §268.48 standards ^a	0.14 mg/L TCLP and meet §268.48 standards ^a
	Radioactively contaminated silver containing batteries. Note: This sub-category consists of nonwastewaters only)	Silver	7440-22-4	NA	Macroencapsulation in accordance with 40 CFR 268.45.
D012 ^a	Wastes that are TC for Endrin based on the TCLP in SW846 Method 1311.	Endrin	72-20-8	BIODG; or CMBST	0.13 and meet §268.48 standards ^a
		Endrin aldehyde	7421-93-4	BIODG; or CMBST	0.13 and meet §268.48 standards ^a
D013 ^a	Wastes that are TC for Lindane based on the TCLP in SW846 Method 1311.	alpha-BHC	319-84-6	CARBN; or CMBST	0.066 and meet §268.48 standards ^a
		beta-BHC	319-85-7	CARBN; or CMBST	0.066 and meet §268.48 standards ^a
		delta-BHC	319-86-8	CARBN; or CMBST	0.066 and meet §268.48 standards ^a
		gamma-BHC (Lindane)	58-89-9	CARBN; or CMBST	0.066 and meet §268.48 standards ^a
D014 ^a	Wastes that are TC for Methoxychlor based on the TCLP in SW846 Method 1311.	Methoxychlor	72-43-5	WETOX or CMBST	0.18 and meet §268.48 standards ^a
D015 ^a	Wastes that are TC for Toxaphene based on the TCLP in SW846 Method 1311.	Toxaphene	8001-35-2	BIODG or CMBST	2.6 and meet §268.48 standards ^a
D016 ^a	Wastes that are TC for 2,4-D (2,4-Dichlorophenoxyacetic acid) based on the TCLP in SW846 Method 1311.	2,4,-D (2,4-Dichlorophenoxyacetic acid)	94-75-7	CHOXD, BIODG, or CMBST	10 and meet §268.48 standards ^a
D017 ^a	Wastes that are TC for 2,4,5-TP (Silvex) based on the TCLP in SW846 Method 1311.	2,4,5-TP (Silvex)	93-72-1	CHOXD or CMBST	7.9 and meet §268.48 standards ^a

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued
 [Note: NA means not applicable]

Waste code	Waste description and treatment/Regulatory subcategory ¹	Regulated hazardous constituent		Wastewaters Concentration ³ in mg/L, or Technology Code ⁴	Nonwastewaters Concentration ⁵ in mg/kg unless noted as "mg/L TCLP"; or Technology Code ⁴
		Common name	CAS ² number		
D018 ⁹	Wastes that are TC for Benzene based on the TCLP in SW846 Method 1311.	Benzene	71–43–2	0.14 and meet § 268.48 standards ^a	10 and meet § 268.48 standards ^a
D019 ⁹	Wastes that are TC for Carbon tetrachloride based on the TCLP in SW846 Method 1311.	Carbon tetrachloride	56–23–5	0.057 and meet § 268.48 standards ^a	6.0 and meet § 268.48 standards ^a
D020 ⁹	Wastes that are TC for Chlordane based on the TCLP in SW846 Method 1311.	Chlordane (alpha and gamma isomers)	57–74–9	0.0033 and meet § 268.48 standards ^a	0.26 and meet § 268.48 standards ^a
D021 ⁹	Wastes that are TC for Chlorobenzene based on the TCLP in SW846 Method 1311.	Chlorobenzene	108–90–7	0.057 and meet § 268.48 standards ^a	6.0 and meet § 268.48 standards ^a
D022 ⁹	Wastes that are TC for Chloroform based on the TCLP in SW846 Method 1311.	Chloroform	67–66–3	0.046 and meet § 268.48 standards ^a	6.0 and meet § 268.48 standards ^a
D023 ⁹	Wastes that are TC for o-Cresol based on the TCLP in SW846 Method 1311.	o-Cresol	95–48–7	0.11 and meet § 268.48 standards ^a	5.6 and meet § 268.48 standards ^a
D024 ⁹	Wastes that are TC for m-Cresol based on the TCLP in SW846 Method 1311.	m-Cresol (difficult to distinguish from p-cresol)	108–39–4	0.77 and meet § 268.48 standards ^a	5.6 and meet § 268.48 standards ^a
D025 ⁹	Wastes that are TC for p-Cresol based on the TCLP in SW846 Method 1311.	p-Cresol (difficult to distinguish from m-cresol)	106–44–5	0.77 and meet § 268.48 standards ^a	5.6 and meet § 268.48 standards ^a
D026 ⁹	Wastes that are TC for Cresols (Total) based on the TCLP in SW846 Method 1311.	Cresol-mixed isomers (Cresylic acid) (sum of o-, m-, and p-cresol concentrations)	1319–77–3	0.88 and meet § 268.48 standards ^a	11.2 and meet § 268.48 standards ^a
D027 ⁹	Wastes that are TC for p-Dichlorobenzene based on the TCLP in SW846 Method 1311.	p-Dichlorobenzene (1,4-Dichlorobenzene)	106–46–7	0.090 and meet § 268.48 standards ^a	6.0 and meet § 268.48 standards ^a

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D028 ⁹	Wastes that are TC for 1,2-Dichloroethane based on the TCLP in SW846 Method 1311.	1,2-Dichloroethane	107-06-2	0.21 and meet \$268.48 standards ^a	6.0 and meet \$268.48 standards ^a
D029 ⁹	Wastes that are TC for 1,1-Dichloroethylene based on the TCLP in SW846 Method 1311.	1,1-Dichloroethylene	75-35-4	0.025 and meet \$268.48 standards ^a	6.0 and meet \$268.48 standards ^a
D030 ⁹	Wastes that are TC for 2,4-Dinitrotoluene based on the TCLP in SW846 Method 1311.	2,4-Dinitrotoluene	121-14-2	0.32 and meet \$268.48 standards ^a	140 and meet \$268.48 standards ^a
D031 ⁹	Wastes that are TC for Heptachlor based on the TCLP in SW846 Method 1311.	Heptachlor	76-44-8	0.0012 and meet \$268.48 standards ^a	0.066 and meet \$268.48 standards ^a
D032 ⁹	Wastes that are TC for Hexachlorobenzene based on the TCLP in SW846 Method 1311.	Hexachlorobenzene	1024-57-3	0.016 and meet \$268.48 standards ^a	0.066 and meet \$268.48 standards ^a
D033 ⁹	Wastes that are TC for Hexachlorobutadiene based on the TCLP in SW846 Method 1311.	Hexachlorobutadiene	118-74-1	0.055 and meet \$268.48 standards ^a	10 and meet \$268.48 standards ^a
D034 ⁹	Wastes that are TC for Hexachloroethane based on the TCLP in SW846 Method 1311.	Hexachloroethane	87-68-3	0.055 and meet \$268.48 standards ^a	5.6 and meet \$268.48 standards ^a
D035 ⁹	Wastes that are TC for Methyl ethyl ketone based on the TCLP in SW846 Method 1311.	Methyl ethyl ketone	67-72-1	0.055 and meet \$268.48 standards ^a	30 and meet \$268.48 standards ^a
D036 ⁹	Wastes that are TC for Nitrobenzene based on the TCLP in SW846 Method 1311.	Nitrobenzene	78-93-3	0.28 and meet \$268.48 standards ^a	36 and meet \$268.48 standards ^a
D037 ⁹	Wastes that are TC for Pentachlorophenol based on the TCLP in SW846 Method 1311.	Pentachlorophenol	98-95-3	0.068 and meet \$268.48 standards ^a	14 and meet \$268.48 standards ^a
D038 ⁹	Wastes that are TC for Pyridine based on the TCLP in SW846 Method 1311.	Pyridine	87-86-5	0.089 and meet \$268.48 standards ^a	7.4 and meet \$268.48 standards ^a
			110-86-1	0.014 and meet \$268.48 standards ^a	16 and meet \$268.48 standards ^a

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued
 [Note: NA means not applicable]

Waste code	Waste description and treatment/Regulatory subcategory ¹	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS ² number		
D039 ⁹	Wastes that are TC for Tetrachloroethylene based on the TCLP in SW846 Method 1311.	Tetrachloroethylene	127-18-4	Concentration ³ in mg/L, or Technology Code ⁴ 0.056 and meet § 268.48 standards ^a	Concentration ⁵ in mg/kg unless noted "mg/L TCLP" ¹ , or Technology Code ⁴ 6.0 and meet § 268.48 standards ^a
D040 ⁹	Wastes that are TC for Trichloroethylene based on the TCLP in SW846 Method 1311.	Trichloroethylene	79-01-6	0.054 and meet § 268.48 standards ^a	6.0 and meet § 268.48 standards ^a
D041 ⁹	Wastes that are TC for 2,4,5-Trichlorophenol based on the TCLP in SW846 Method 1311.	2,4,5-Trichlorophenol	95-95-4	0.18 and meet § 268.48 standards ^a	7.4 and meet § 268.48 standards ^a
D042 ⁹	Wastes that are TC for 2,4,6-Trichlorophenol based on the TCLP in SW846 Method 1311.	2,4,6-Trichlorophenol	88-06-2	0.035 and meet § 268.48 standards ^a	7.4 and meet § 268.48 standards ^a
D043 ⁹	Wastes that are TC for Vinyl chloride based on the TCLP in SW846 Method 1311.	Vinyl chloride	75-01-4	0.27 and meet § 268.48 standards ^a	6.0 and meet § 268.48 standards ^a
F001, F002, F003, F004, & F005	F001, F002, F003, F004 and/or F005 solvent wastes that contain any combination of one or more of the following spent solvents: acetone, benzene, n-butyl alcohol, carbon disulfide, carbon tetrachloride, chlorinated fluoro-carbons, chlorobenzene, o-cresol, m-cresol, p-cresol, cyclohexanone, o-dichlorobenzene, 2-ethoxyethanol, ethyl acetate, ethyl benzene, ethyl ether, isobutyl alcohol, methanol, methylene chloride, methyl ethyl ketone, methyl isobutyl ketone, nitrobenzene, 2-nitropropane, pyridine, tetrachloroethylene, toluene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, trichloroethylene, trichlorofluoromethane, and/or xylenes (except as specifically noted in other subcategories). See further details of these listings in § 261.31.	Acetone Benzene n-Butyl alcohol Carbon disulfide Carbon tetrachloride Chlorobenzene m-Cresol (difficult to distinguish from p-Cresol) p-Cresol (difficult to distinguish from m-cresol) Cresol-mixed isomers (Cresylic acid) (sum of o-, m-, and p-cresol concentrations) Cyclohexanone o-Dichlorobenzene Ethyl acetate Ethyl benzene Ethyl ether	67-64-1 71-43-2 71-36-3 75-15-0 56-23-5 108-90-7 95-48-7 108-39-4 106-44-5 1319-77-3 108-94-1 95-50-1 141-78-6 100-41-4 60-29-7	0.28 0.14 5.6 3.8 0.057 0.057 0.11 0.77 0.77 0.88 0.36 0.088 0.34 0.057 0.12	160 10 2.6 NA 6.0 6.0 5.6 5.6 5.6 11.2 NA 6.0 33 10 160

			<p>isobutyl alcohol Methanol Methylene chloride Methyl ethyl ketone Methyl isobutyl ketone Nitrobenzene Pyridine Tetrachloroethylene Toluene 1,1,1-Trichloroethane 1,1,2-Trichloroethane 1,1,2-Trichloro-1,2,2-trifluoroethane Trichloroethylene Trichlorofluoromethane Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)</p>	<p>78-83-1 67-56-1 75-9-2 78-93-3 108-10-1 98-95-3 110-86-1 127-18-4 108-88-3 71-55-6 79-00-5 76-13-1 79-01-6 75-69-4 1330-20-7</p>	<p>5.6 NA 0.089 0.28 0.14 0.068 0.014 0.056 0.080 0.054 0.054 0.057 0.054 0.020 0.32</p>	<p>170 NA 30 33 33 14 16 6.0 10 6.0 6.0 30 6.0 30 30</p>
	<p>F003 and/or F005 solvent wastes that contain any combination of one or more of the following three solvents as the only listed F001-5 solvents: carbon disulfide, cyclohexanone, and/or methanol. (formerly 268.41(c))</p>	<p>Carbon disulfide Cyclohexanone Methanol</p>	<p>75-15-0 108-94-1 67-56-1</p>	<p>3.8 0.36 5.6</p>	<p>4.8 mg/L TCLP 0.75 mg/L TCLP 0.75 mg/L TCLP</p>	
	<p>F005 solvent waste containing 2-Nitropropane as the only listed F001-5 solvent.</p>	<p>2-Nitropropane</p>	<p>79-46-9</p>	<p>(WETOX or CHOXD) fb CARBN; or CMBST</p>	<p>CMBST</p>	
	<p>F005 solvent waste containing 2-Ethoxyethanol as the only listed F001-5 solvent.</p>	<p>2-Ethoxyethanol</p>	<p>110-80-5</p>	<p>BIODG; or CMBST</p>	<p>CMBST</p>	
F006	<p>Wastewater treatment sludges from electroplating operations except from the following processes: (1) Sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum.</p>	<p>Cadmium Chromium (Total)⁷ Cyanides (Total)⁷ Cyanides (Amenable)⁷ Lead Nickel Silver</p>	<p>7440-43-9 7440-47-3 57-12-5 57-12-5 7439-92-1 7440-02-0 7440-22-4</p>	<p>0.69 2.77 1.2 0.86 0.69 3.98 NA</p>	<p>0.11 mg/L TCLP 0.60 mg/L TCLP 590 30 0.75 mg/L TCLP 11 mg/L TCLP 0.14 mg/L TCLP</p>	
F007	<p>Spent cyanide plating bath solutions from electroplating operations.</p>	<p>Cadmium Chromium (Total)⁷ Cyanides (Total)⁷ Cyanides (Amenable)⁷ Lead Nickel Silver</p>	<p>7440-43-9 7440-47-3 57-12-5 57-12-5 7439-92-1 7440-02-0 7440-22-4</p>	<p>NA 2.77 1.2 0.86 0.69 3.98 NA</p>	<p>0.11 mg/L TCLP 0.60 mg/L TCLP 590 30 0.75 mg/L TCLP 11 mg/L TCLP 0.14 mg/L TCLP</p>	
F008	<p>Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.</p>	<p>Cadmium Chromium (Total)⁷ Cyanides (Total)⁷ Cyanides (Amenable)⁷ Lead Nickel</p>	<p>7440-43-9 7440-47-3 57-12-5 57-12-5 7439-92-1 7440-02-0</p>	<p>NA 2.77 1.2 0.86 0.69 3.98</p>	<p>0.11 mg/L TCLP 0.60 mg/L TCLP 590 30 0.75 mg/L TCLP 11 mg/L TCLP</p>	

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued
 [Note: NA means not applicable]

Waste code	Waste description and treatment/Regulatory subcategory ¹	Regulated hazardous constituent		Wastewaters Concentration ³ in mg/L, or Technology Code ⁴	Nonwastewaters Concentration ⁵ in mg/kg unless noted "mg/L TCLP"; or Technology Code ⁴
		Common name	CAS ² number		
		Silver	7440-22-4	NA	0.14 mg/L TCLP
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.	Cadmium Chromium (Total) ⁷ Cyanides (Total) ⁷ Cyanides (Amenable) ⁷ Lead Nickel Silver	7440-43-9 7440-47-3 57-12-5 57-12-5 7439-92-1 7440-02-0 7440-22-4	NA 2.77 1.2 0.86 0.69 3.98 NA	0.11 mg/L TCLP 0.60 mg/L TCLP 590 30 0.75 mg/L TCLP 11 mg/L TCLP 0.14 mg/L TCLP
F010	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.	Cyanides (Total) ⁷ Cyanides (Amenable) ⁷	57-12-5 57-12-5	1.2 0.86	590 NA
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.	Cadmium Chromium (Total) ⁷ Cyanides (Total) ⁷ Cyanides (Amenable) ⁷ Lead Nickel Silver	7440-43-9 7440-47-3 57-12-5 57-12-5 7439-92-1 7440-02-0 7440-22-4	NA 2.77 1.2 0.86 0.69 3.98 NA	0.11 mg/L TCLP 0.60 mg/L TCLP 590 30 0.75 mg/L TCLP 11 mg/L TCLP 0.14 mg/L TCLP
F012	Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process.	Cadmium Chromium (Total) ⁷ Cyanides (Total) ⁷ Cyanides (Amenable) ⁷ Lead Nickel Silver	7440-43-9 7440-47-3 57-12-5 57-12-5 7439-92-1 7440-02-0 7440-22-4	NA 2.77 1.2 0.86 0.69 3.98 NA	0.11 mg/L TCLP 0.60 mg/L TCLP 590 30 0.75 mg/L TCLP 11 mg/L TCLP 0.14 mg/L TCLP
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process.	Chromium (Total) ⁷ Cyanides (Total) ⁷ Cyanides (Amenable) ⁷	7440-47-3 57-12-5 57-12-5	2.77 1.2 0.86	0.60 mg/L TCLP 590 30

§ 268.42 Treatment standards expressed as specified technologies.

NOTE: For the requirements previously found in this section in Table 2—Technology-Based Standards By RCRA Waste Code, and Table 3—Technology-Based Standards for Specific Radioactive Hazardous Mixed Waste, refer to §268.40.

(a) The following wastes in the table in §268.40 “Treatment Standards for

Hazardous Wastes,” for which standards are expressed as a treatment method rather than a concentration level, must be treated using the technology or technologies specified in the table entitled “Technology Codes and Description of Technology-Based Standards” in this section.

TABLE 1—TECHNOLOGY CODES AND DESCRIPTION OF TECHNOLOGY-BASED STANDARDS

Technology code	Description of technology-based standards
ADGAS:	Venting of compressed gases into an absorbing or reacting media (i.e., solid or liquid)—venting can be accomplished through physical release utilizing valves/piping; physical penetration of the container; and/or penetration through detonation.
AMLGM:	Amalgamation of liquid, elemental mercury contaminated with radioactive materials utilizing inorganic reagents such as copper, zinc, nickel, gold, and sulfur that result in a nonliquid, semi-solid amalgam and thereby reducing potential emissions of elemental mercury vapors to the air.
BIODG:	Biodegradation of organics or non-metallic inorganics (i.e., degradable inorganics that contain the elements of phosphorus, nitrogen, and sulfur) in units operated under either aerobic or anaerobic conditions such that a surrogate compound or indicator parameter has been substantially reduced in concentration in the residuals (e.g., Total Organic Carbon can often be used as an indicator parameter for the biodegradation of many organic constituents that cannot be directly analyzed in wastewater residues).
CARBN:	Carbon adsorption (granulated or powdered) of non-metallic inorganics, organo-metallics, and/or organic constituents, operated such that a surrogate compound or indicator parameter has not undergone breakthrough (e.g., Total Organic Carbon can often be used as an indicator parameter for the adsorption of many organic constituents that cannot be directly analyzed in wastewater residues). Breakthrough occurs when the carbon has become saturated with the constituent (or indicator parameter) and substantial change in adsorption rate associated with that constituent occurs.
CHOXD:	Chemical or electrolytic oxidation utilizing the following oxidation reagents (or waste reagents) or combinations of reagents: (1) Hypochlorite (e.g., bleach); (2) chlorine; (3) chlorine dioxide; (4) ozone or UV (ultraviolet light) assisted ozone; (5) peroxides; (6) persulfates; (7) perchlorates; (8) permangantes; and/or (9) other oxidizing reagents of equivalent efficiency, performed in units operated such that a surrogate compound or indicator parameter has been substantially reduced in concentration in the residuals (e.g., Total Organic Carbon can often be used as an indicator parameter for the oxidation of many organic constituents that cannot be directly analyzed in wastewater residues). Chemical oxidation specifically includes what is commonly referred to as alkaline chlorination.
CHRED:	Chemical reduction utilizing the following reducing reagents (or waste reagents) or combinations of reagents: (1) Sulfur dioxide; (2) sodium, potassium, or alkali salts or sulfites, bisulfites, metabisulfites, and polyethylene glycols (e.g., NaPEG and KPEG); (3) sodium hydrosulfide; (4) ferrous salts; and/or (5) other reducing reagents of equivalent efficiency, performed in units operated such that a surrogate compound or indicator parameter has been substantially reduced in concentration in the residuals (e.g., Total Organic Halogens can often be used as an indicator parameter for the reduction of many halogenated organic constituents that cannot be directly analyzed in wastewater residues). Chemical reduction is commonly used for the reduction of hexavalent chromium to the trivalent state.
CMBST:	High temperature organic destruction technologies, such as combustion in incinerators, boilers, or industrial furnaces operated in accordance with the applicable requirements of 40 CFR part 264, subpart O, or 40 CFR part 265, subpart O, or 40 CFR part 266, subpart H, and in other units operated in accordance with applicable technical operating requirements; and certain non-combustive technologies, such as the Catalytic Extraction Process.
DEACT:	Deactivation to remove the hazardous characteristics of a waste due to its ignitability, corrosivity, and/or reactivity.
FSUBS:	Fuel substitution in units operated in accordance with applicable technical operating requirements.
HLVIT:	Vitrification of high level mixed radioactive wastes in units in compliance with all applicable radioactive protection requirements under control of the Nuclear Regulatory Commission.
IMERC:	Incineration of wastes containing organics and mercury in units operated in accordance with the technical operating requirements of 40 CFR part 264 subpart O and part 265 subpart O. All wastewater and nonwastewater residues derived from this process must then comply with the corresponding treatment standards per waste code with consideration of any applicable subcategories (e.g., High or Low Mercury Subcategories).
INCIN:	Incineration in units operated in accordance with the technical operating requirements of 40 CFR part 264 subpart O and part 265 subpart O.
LLEXT:	Liquid-liquid extraction (often referred to as solvent extraction) of organics from liquid wastes into an immiscible solvent for which the hazardous constituents have a greater solvent affinity, resulting in an extract high in organics that must undergo either incineration, reuse as a fuel, or other recovery/reuse and a raffinate (extracted liquid waste) proportionately low in organics that must undergo further treatment as specified in the standard.

TABLE 1—TECHNOLOGY CODES AND DESCRIPTION OF TECHNOLOGY-BASED STANDARDS—Continued

Technology code	Description of technology-based standards
MACRO:	Macroencapsulation with surface coating materials such as polymeric organics (e.g., resins and plastics) or with a jacket of inert inorganic materials to substantially reduce surface exposure to potential leaching media. Macroencapsulation specifically does not include any material that would be classified as a tank or container according to 40 CFR 260.10.
NEUTR:	Neutralization with the following reagents (or waste reagents) or combinations of reagents: (1) Acids; (2) bases; or (3) water (including wastewaters) resulting in a pH greater than 2 but less than 12.5 as measured in the aqueous residuals.
NLDBR:	No land disposal based on recycling.
POLYM:	Formation of complex high-molecular weight solids through polymerization of monomers in high-TOC D001 non-wastewaters which are chemical components in the manufacture of plastics.
PRECP:	Chemical precipitation of metals and other inorganics as insoluble precipitates of oxides, hydroxides, carbonates, sulfides, sulfates, chlorides, fluorides, or phosphates. The following reagents (or waste reagents) are typically used alone or in combination: (1) Lime (i.e., containing oxides and/or hydroxides of calcium and/or magnesium); (2) caustic (i.e., sodium and/or potassium hydroxides); (3) soda ash (i.e., sodium carbonate); (4) sodium sulfide; (5) ferric sulfate or ferric chloride; (6) alum; or (7) sodium sulfate. Additional flocculating, coagulation or similar reagents/processes that enhance sludge dewatering characteristics are not precluded from use.
RBERY:	Thermal recovery of Beryllium.
RCGAS:	Recovery/reuse of compressed gases including techniques such as reprocessing of the gases for reuse/resale; filtering/adsorption of impurities; remixing for direct reuse or resale; and use of the gas as a fuel source.
RCORR:	Recovery of acids or bases utilizing one or more of the following recovery technologies: (1) Distillation (i.e., thermal concentration); (2) ion exchange; (3) resin or solid adsorption; (4) reverse osmosis; and/or (5) incineration for the recovery of acid—Note: this does not preclude the use of other physical phase separation or concentration techniques such as decantation, filtration (including ultrafiltration), and centrifugation, when used in conjunction with the above listed recovery technologies.
RLEAD:	Thermal recovery of lead in secondary lead smelters.
RMERC:	Retorting or roasting in a thermal processing unit capable of volatilizing mercury and subsequently condensing the volatilized mercury for recovery. The retorting or roasting unit (or facility) must be subject to one or more of the following: (a) a National Emissions Standard for Hazardous Air Pollutants (NESHAP) for mercury; (b) a Best Available Control Technology (BACT) or a Lowest Achievable Emission Rate (LAER) standard for mercury imposed pursuant to a Prevention of Significant Deterioration (PSD) permit; or (c) a state permit that establishes emission limitations (within meaning of section 302 of the Clean Air Act) for mercury. All wastewater and nonwastewater residues derived from this process must then comply with the corresponding treatment standards per waste code with consideration of any applicable subcategories (e.g., High or Low Mercury Subcategories).
RMETL:	Recovery of metals or inorganics utilizing one or more of the following direct physical/removal technologies: (1) Ion exchange; (2) resin or solid (i.e., zeolites) adsorption; (3) reverse osmosis; (4) chelation/solvent extraction; (5) freeze crystallization; (6) ultrafiltration and/or (7) simple precipitation (i.e., crystallization)—Note: This does not preclude the use of other physical phase separation or concentration techniques such as decantation, filtration (including ultrafiltration), and centrifugation, when used in conjunction with the above listed recovery technologies.
RORGS:	Recovery of organics utilizing one or more of the following technologies: (1) Distillation; (2) thin film evaporation; (3) steam stripping; (4) carbon adsorption; (5) critical fluid extraction; (6) liquid-liquid extraction; (7) precipitation/crystallization (including freeze crystallization); or (8) chemical phase separation techniques (i.e., addition of acids, bases, demulsifiers, or similar chemicals);—Note: this does not preclude the use of other physical phase separation techniques such as a decantation, filtration (including ultrafiltration), and centrifugation, when used in conjunction with the above listed recovery technologies.
RTHRM:	Thermal recovery of metals or inorganics from nonwastewaters in units identified as industrial furnaces according to 40 CFR 260.10 (1), (6), (7), (11), and (12) under the definition of "industrial furnaces".
RZINC:	Resmelting in high temperature metal recovery units for the purpose of recovery of zinc.
STABL:	Stabilization with the following reagents (or waste reagents) or combinations of reagents: (1) Portland cement; or (2) lime/pozzolans (e.g., fly ash and cement kiln dust)—this does not preclude the addition of reagents (e.g., iron salts, silicates, and clays) designed to enhance the set/cure time and/or compressive strength, or to overall reduce the leachability of the metal or inorganic.
SSTRP:	Steam stripping of organics from liquid wastes utilizing direct application of steam to the wastes operated such that liquid and vapor flow rates, as well as temperature and pressure ranges, have been optimized, monitored, and maintained. These operating parameters are dependent upon the design parameters of the unit, such as the number of separation stages and the internal column design, thus, resulting in a condensed extract high in organics that must undergo either incineration, reuse as a fuel, or other recovery/reuse and an extracted wastewater that must undergo further treatment as specified in the standard.
VTD:	Vacuum thermal desorption of low-level radioactive hazardous mixed waste in units in compliance with all applicable radioactive protection requirements under control of the Nuclear Regulatory Commission.
WETOX:	Wet air oxidation performed in units operated such that a surrogate compound or indicator parameter has been substantially reduced in concentration in the residuals (e.g., Total Organic Carbon can often be used as an indicator parameter for the oxidation of many organic constituents that cannot be directly analyzed in wastewater residues).

TABLE 1—ALTERNATIVE TREATMENT STANDARDS FOR HAZARDOUS DEBRIS¹—Continued

Technology description	Performance and/or design and operating standard	Contaminant restrictions ²
<p>3. <i>Sealing</i>: Application of an appropriate material which adheres tightly to the debris surface to avoid exposure of the surface to potential leaching media. When necessary to effectively seal the surface, sealing entails pretreatment of the debris surface to remove foreign matter and to clean and roughen the surface. Sealing materials include epoxy, silicone, and urethane compounds, but paint may not be used as a sealant.</p>	<p>Sealing must avoid exposure of the debris surface to potential leaching media and sealant must be resistant to degradation by the debris and its contaminants and materials into which it may come into contact after placement (leachate, other waste, microbes).</p>	<p>None.</p>

¹ Hazardous debris must be treated by either these standards or the waste-specific treatment standards for the waste contaminating the debris. The treatment standards must be met for each type of debris contained in a mixture of debris types, unless the debris is converted into treatment residue as a result of the treatment process. Debris treatment residuals are subject to the waste-specific treatment standards for the waste contaminating the debris.

² Contaminant restriction means that the technology is not BDAT for that contaminant. If debris containing a restricted contaminant is treated by the technology, the contaminant must be subsequently treated by a technology for which it is not restricted in order to be land disposed (and excluded from Subtitle C regulation).

³ "Clean debris surface" means the surface, when viewed without magnification, shall be free of all visible contaminated soil and hazardous waste except that residual staining from soil and waste consisting of light shadows, slight streaks, or minor discolorations, and soil and waste in cracks, crevices, and pits may be present provided that such staining and waste and soil in cracks, crevices, and pits shall be limited to no more than 5% of each square inch of surface area.

⁴ Acids, solvents, and chemical reagents may react with some debris and contaminants to form hazardous compounds. For example, acid washing of cyanide-contaminated debris could result in the formation of hydrogen cyanide. Some acids may also react violently with some debris and contaminants, depending on the concentration of the acid and the type of debris and contaminants. Debris treaters should refer to the safety precautions specified in Material Safety Data Sheets for various acids to avoid applying an incompatible acid to a particular debris/contaminant combination. For example, concentrated sulfuric acid may react violently with certain organic compounds, such as acrylonitrile.

⁵ If reducing the particle size of debris to meet the treatment standards results in material that no longer meets the 60 mm minimum particle size limit for debris, such material is subject to the waste-specific treatment standards for the waste contaminating the material, unless the debris has been cleaned and separated from contaminated soil and waste prior to size reduction. At a minimum, simple physical or mechanical means must be used to provide such cleaning and separation of nondebris materials to ensure that the debris surface is free of caked soil, waste, or other nondebris material.

⁶ Dioxin-listed wastes are EPA Hazardous Waste numbers FO20, FO21, FO22, FO23, FO26, and FO27.

⁷ Thermal desorption is distinguished from Thermal Destruction in that the primary purpose of Thermal Desorption is to volatilize contaminants and to remove them from the treatment chamber for subsequent destruction or other treatment.

⁸ The demonstration "Equivalent Technology" under § 268.42(b) must document that the technology treats contaminants subject to treatment to a level equivalent to that required by the performance and design and operating standards for other technologies in this table such that residual levels of hazardous contaminants will not pose a hazard to human health and the environment absent management controls.

⁹ Any soil, waste, and other nondebris material that remains on the debris surface (or remains mixed with the debris) after treatment is considered a treatment residual that must be separated from the debris using, at a minimum, simple physical or mechanical means. Examples of simple physical or mechanical means are vibratory or trommel screening or water washing. The debris surface need not be cleaned to a "clean debris surface" as defined in note 3 when separating treated debris from residue; rather, the surface must be free of caked soil, waste, or other nondebris material. Treatment residuals are subject to the waste-specific treatment standards for the waste contaminating the debris.

[57 FR 37277, Aug. 18, 1992, as amended at 59 FR 48103, Sept. 19, 1994; 63 FR 28738, May 26, 1998; 71 FR 40279, July 14, 2006]

§ 268.46 Alternative treatment standards based on HTMR.

For the treatment standards previously found in this section, refer to § 268.40.

[59 FR 48103, Sept. 19, 1994]

§ 268.48 Universal treatment standards.

(a) Table UTS identifies the hazardous constituents, along with the

nonwastewater and wastewater treatment standard levels, that are used to regulate most prohibited hazardous wastes with numerical limits. For determining compliance with treatment standards for underlying hazardous constituents as defined in § 268.2(i), these treatment standards may not be exceeded. Compliance with these treatment standards is measured by an analysis of grab samples, unless otherwise noted in the following Table UTS.

UNIVERSAL TREATMENT STANDARDS

[Note: NA means not applicable]

Regulated constituent common name	CAS ¹ number	Wastewater standard	Nonwastewater standard
		Concentration ² in mg/l	Concentration ³ in mg/kg unless noted as "mg/l TCLP"
<i>Organic Constituents</i>			
Acenaphthylene	208–96–8	0.059	3.4
Acenaphthene	83–32–9	0.059	3.4
Acetone	67–64–1	0.28	160
Acetonitrile	75–05–8	5.6	38
Acetophenone	96–86–2	0.010	9.7
2-Acetylaminofluorene	53–96–3	0.059	140
Acrolein	107–02–8	0.29	NA
Acrylamide	79–06–1	19	23
Acrylonitrile	107–13–1	0.24	84
Aldrin	309–00–2	0.021	0.066
4-Aminobiphenyl	92–67–1	0.13	NA
Aniline	62–53–3	0.81	14
o-Anisidine (2-methoxyaniline)	90–04–0	0.010	0.66
Anthracene	120–12–7	0.059	3.4
Aramite	140–57–8	0.36	NA
alpha-BHC	319–84–6	0.00014	0.066
beta-BHC	319–85–7	0.00014	0.066
delta-BHC	319–86–8	0.023	0.066
gamma-BHC	58–89–9	0.0017	0.066
Benzene	71–43–2	0.14	10
Benz(a)anthracene	56–55–3	0.059	3.4
Benzal chloride	98–87–3	0.055	6.0
Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205–99–2	0.11	6.8
Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207–08–9	0.11	6.8
Benzo(g,h,i)perylene	191–24–2	0.0055	1.8
Benzo(a)pyrene	50–32–8	0.061	3.4
Bromodichloromethane	75–27–4	0.35	15
Bromomethane/Methyl bromide	74–83–9	0.11	15
4-Bromophenyl phenyl ether	101–55–3	0.055	15
n-Butyl alcohol	71–36–3	5.6	2.6
Butyl benzyl phthalate	85–68–7	0.017	28
2-sec-Butyl-4,6-dinitrophenol/Dinoseb	88–85–7	0.066	2.5
Carbon disulfide	75–15–0	3.8	4.8 mg/l TCLP

UNIVERSAL TREATMENT STANDARDS—Continued

[Note: NA means not applicable]

Regulated constituent common name	CAS ¹ number	Wastewater standard	Nonwastewater standard
		Concentration ² in mg/l	Concentration ³ in mg/kg unless noted as "mg/l TCLP"
Carbon tetrachloride	56-23-5	0.057	6.0
Chlordane (alpha and gamma isomers)	57-74-9	0.0033	0.26
p-Chloroaniline	106-47-8	0.46	16
Chlorobenzene	108-90-7	0.057	6.0
Chlorobenzilate	510-15-6	0.10	NA
2-Chloro-1,3-butadiene	126-99-8	0.057	0.28
Chlorodibromomethane	124-48-1	0.057	15
Chloroethane	75-00-3	0.27	6.0
bis(2-Chloroethoxy)methane	111-91-1	0.036	7.2
bis(2-Chloroethyl)ether	111-44-4	0.033	6.0
Chloroform	67-66-3	0.046	6.0
bis(2-Chloroisopropyl)ether	39638-32-9	0.055	7.2
p-Chloro-m-cresol	59-50-7	0.018	14
2-Chloroethyl vinyl ether	110-75-8	0.062	NA
Chloromethane/Methyl chloride	74-87-3	0.19	30
2-Chloronaphthalene	91-58-7	0.055	5.6
2-Chlorophenol	95-57-8	0.044	5.7
3-Chloropropylene	107-05-1	0.036	30
Chrysene	218-01-9	0.059	3.4
p-Cresidine	120-71-8	0.010	0.66
o-Cresol	95-48-7	0.11	5.6
m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6
p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
Cyclohexanone	108-94-1	0.36	0.75 mg/l TCLP
o,p'-DDD	53-19-0	0.023	0.087
p,p'-DDD	72-54-8	0.023	0.087
o,p'-DDE	3424-82-6	0.031	0.087
p,p'-DDE	72-55-9	0.031	0.087
o,p'-DDT	789-02-6	0.0039	0.087
p,p'-DDT	50-29-3	0.0039	0.087
Dibenz(a,h)anthracene	53-70-3	0.055	8.2
Dibenz(a,e)pyrene	192-65-4	0.061	NA
1,2-Dibromo-3-chloropropane	96-12-8	0.11	15
1,2-Dibromoethane/Ethylene dibromide	106-93-4	0.028	15

UNIVERSAL TREATMENT STANDARDS—Continued

[Note: NA means not applicable]

Regulated constituent common name	CAS ¹ number	Wastewater standard	Nonwastewater standard
		Concentration ² in mg/l	Concentration ³ in mg/kg unless noted as "mg/l TCLP"
Dibromomethane	74–95–3	0.11	15
m-Dichlorobenzene	541–73–1	0.036	6.0
o-Dichlorobenzene	95–50–1	0.088	6.0
p-Dichlorobenzene	106–46–7	0.090	6.0
Dichlorodifluoromethane	75–71–8	0.23	7.2
1,1-Dichloroethane	75–34–3	0.059	6.0
1,2-Dichloroethane	107–06–2	0.21	6.0
1,1-Dichloroethylene	75–35–4	0.025	6.0
trans-1,2-Dichloroethylene	156–60–5	0.054	30
2,4-Dichlorophenol	120–83–2	0.044	14
2,6-Dichlorophenol	87–65–0	0.044	14
2,4-Dichlorophenoxyacetic acid/2,4-D	94–75–7	0.72	10
1,2-Dichloropropane	78–87–5	0.85	18
cis-1,3-Dichloropropylene	10061–01–5	0.036	18
trans-1,3-Dichloropropylene	10061–02–6	0.036	18
Dieldrin	60–57–1	0.017	0.13
Diethyl phthalate	84–66–2	0.20	28
p-Dimethylaminoazobenzene	60–11–7	0.13	NA
2,4-Dimethylaniline (2,4-xylidine)	95–68–1	0.010	0.66
2,4-Dimethyl phenol	105–67–9	0.036	14
Dimethyl phthalate	131–11–3	0.047	28
Di-n-butyl phthalate	84–74–2	0.057	28
1,4-Dinitrobenzene	100–25–4	0.32	2.3
4,6-Dinitro-o-cresol	534–52–1	0.28	160
2,4-Dinitrophenol	51–28–5	0.12	160
2,4-Dinitrotoluene	121–14–2	0.32	140
2,6-Dinitrotoluene	606–20–2	0.55	28
Di-n-octyl phthalate	117–84–0	0.017	28
Di-n-propylnitrosamine	621–64–7	0.40	14
1,4-Dioxane	123–91–1	12.0	170
Diphenylamine (difficult to distinguish from diphenylnitrosamine)	122–39–4	0.92	13
Diphenylnitrosamine (difficult to distinguish from diphenylamine)	86–30–6	0.92	13
1,2-Diphenylhydrazine	122–66–7	0.087	NA
Disulfoton	298–04–4	0.017	6.2

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UNIVERSAL TREATMENT STANDARDS—Continued

[Note: NA means not applicable]

Regulated constituent common name	CAS ¹ number	Wastewater standard	Nonwastewater standard
		Concentration ² in mg/l	Concentration ³ in mg/kg unless noted as "mg/l TCLP"
Endosulfan I	959-98-8	0.023	0.066
Endosulfan II	33213-65-9	0.029	0.13
Endosulfan sulfate	1031-07-8	0.029	0.13
Endrin	72-20-8	0.0028	0.13
Endrin aldehyde	7421-93-4	0.025	0.13
Ethyl acetate	141-78-6	0.34	33
Ethyl benzene	100-41-4	0.057	10
Ethyl cyanide/Propanenitrile	107-12-0	0.24	360
Ethyl ether	60-29-7	0.12	160
bis(2-Ethylhexyl)phthalate	117-81-7	0.28	28
Ethyl methacrylate	97-63-2	0.14	160
Ethylene oxide	75-21-8	0.12	NA
Famphur	52-85-7	0.017	15
Fluoranthene	206-44-0	0.068	3.4
Fluorene	86-73-7	0.059	3.4
Heptachlor	76-44-8	0.0012	0.066
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-HpCDD)	35822-46-9	0.000035	.0025
1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-HpCDF)	67562-39-4	0.000035	.0025
1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-HpCDF)	55673-89-7	0.000035	.0025
Heptachlor epoxide	1024-57-3	0.016	0.066
Hexachlorobenzene	118-74-1	0.055	10
Hexachlorobutadiene	87-68-3	0.055	5.6
Hexachlorocyclopentadiene	77-47-4	0.057	2.4
HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001
HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
Hexachloroethane	67-72-1	0.055	30
Hexachloropropylene	1888-71-7	0.035	30
Indeno(1,2,3-c,d) pyrene	193-39-5	0.0055	3.4
Iodomethane	74-88-4	0.19	65
Isobutyl alcohol	78-83-1	5.6	170
Isodrin	465-73-6	0.021	0.066
Isosafrole	120-58-1	0.081	2.6
Kepona	143-50-0	0.0011	0.13
Methacrylonitrile	126-98-7	0.24	84

UNIVERSAL TREATMENT STANDARDS—Continued

[Note: NA means not applicable]

Regulated constituent common name	CAS ¹ number	Wastewater standard	Nonwastewater standard
		Concentration ² in mg/l	Concentration ³ in mg/kg unless noted as "mg/l TCLP"
Methanol	67–56–1	5.6	0.75 mg/l TCLP
Methapyrilene	91–80–5	0.081	1.5
Methoxychlor	72–43–5	0.25	0.18
3-Methylcholanthrene	56–49–5	0.0055	15
4,4-Methylene bis(2-chloroaniline)	101–14–4	0.50	30
Methylene chloride	75–09–2	0.089	30
Methyl ethyl ketone	78–93–3	0.28	36
Methyl isobutyl ketone	108–10–1	0.14	33
Methyl methacrylate	80–62–6	0.14	160
Methyl methanesulfonate	66–27–3	0.018	NA
Methyl parathion	298–00–0	0.014	4.6
Naphthalene	91–20–3	0.059	5.6
2-Naphthylamine	91–59–8	0.52	NA
o-Nitroaniline	88–74–4	0.27	14
p-Nitroaniline	100–01–6	0.028	28
Nitrobenzene	98–95–3	0.068	14
5-Nitro-o-toluidine	99–55–8	0.32	28
o-Nitrophenol	88–75–5	0.028	13
p-Nitrophenol	100–02–7	0.12	29
N-Nitrosodiethylamine	55–18–5	0.40	28
N-Nitrosodimethylamine	62–75–9	0.40	2.3
N-Nitroso-di-n-butylamine	924–16–3	0.40	17
N-Nitrosomethylethylamine	10595–95–6	0.40	2.3
N-Nitrosomorpholine	59–89–2	0.40	2.3
N-Nitrosopiperidine	100–75–4	0.013	35
N-Nitrosopyrrolidine	930–55–2	0.013	35
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3268–87–9	0.000063	0.005
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	39001–02–0	0.000063	0.005
Parathion	56–38–2	0.014	4.6
Total PCBs (sum of all PCB isomers, or all Aroclors) ⁸	1336–36–3	0.10	10
Pentachlorobenzene	608–93–5	0.055	10
PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
PeCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001
Pentachloroethane	76–01–7	0.055	6.0

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UNIVERSAL TREATMENT STANDARDS—Continued

[Note: NA means not applicable]

Regulated constituent common name	CAS ¹ number	Wastewater standard	Nonwastewater standard
		Concentration ² in mg/l	Concentration ³ in mg/kg unless noted as "mg/l TCLP"
Pentachloronitrobenzene	82-68-8	0.055	4.8
Pentachlorophenol	87-86-5	0.089	7.4
Phenacetin	62-44-2	0.081	16
Phenanthrene	85-01-8	0.059	5.6
Phenol	108-95-2	0.039	6.2
1,3-Phenylenediamine	108-45-2	0.010	0.66
Phorate	298-02-2	0.021	4.6
Phthalic acid	100-21-0	0.055	28
Phthalic anhydride	85-44-9	0.055	28
Pronamide	23950-58-5	0.093	1.5
Pyrene	129-00-0	0.067	8.2
Pyridine	110-86-1	0.014	16
Safrole	94-59-7	0.081	22
Silvex/2,4,5-TP	93-72-1	0.72	7.9
1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001
1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0
1,1,2,2-Tetrachloroethane	79-34-5	0.057	6.0
Tetrachloroethylene	127-18-4	0.056	6.0
2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4
Toluene	108-88-3	0.080	10
Toxaphene	8001-35-2	0.0095	2.6
Tribromomethane/Bromoform	75-25-2	0.63	15
1,2,4-Trichlorobenzene	120-82-1	0.055	19
1,1,1-Trichloroethane	71-55-6	0.054	6.0
1,1,2-Trichloroethane	79-00-5	0.054	6.0
Trichloroethylene	79-01-6	0.054	6.0
Trichlorofluoromethane	75-69-4	0.020	30
2,4,5-Trichlorophenol	95-95-4	0.18	7.4
2,4,6-Trichlorophenol	88-06-2	0.035	7.4
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T	93-76-5	0.72	7.9
1,2,3-Trichloropropane	96-18-4	0.85	30
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.057	30

UNIVERSAL TREATMENT STANDARDS—Continued

[Note: NA means not applicable]

Regulated constituent common name	CAS ¹ number	Wastewater standard	Nonwastewater standard
		Concentration ² in mg/l	Concentration ³ in mg/kg unless noted as "mg/l TCLP"
tris-(2,3-Dibromopropyl) phosphate	126–72–7	0.11	0.10
Vinyl chloride	75–01–4	0.27	6.0
Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330–20–7	0.32	30
<i>Inorganic Constituents</i>			
Antimony	7440–36–0	1.9	1.15 mg/l TCLP
Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
Barium	7440–39–3	1.2	21 mg/l TCLP
Beryllium	7440–41–7	0.82	1.22 mg/l TCLP
Cadmium	7440–43–9	0.69	0.11 mg/l TCLP
Chromium (Total)	7440–47–3	2.77	0.60 mg/l TCLP
Cyanides (Total) ⁴	57–12–5	1.2	590
Cyanides (Amenable) ⁴	57–12–5	0.86	30
Fluoride ⁵	16984–48–8	35	NA
Lead	7439–92–1	0.69	0.75 mg/l TCLP
Mercury—Nonwastewater from Retort	7439–97–6	NA	0.20 mg/l TCLP
Mercury—All Others	7439–97–6	0.15	0.025 mg/l TCLP
Nickel	7440–02–0	3.98	11 mg/l TCLP
Selenium ⁷	7782–49–2	0.82	5.7 mg/l TCLP
Silver	7440–22–4	0.43	0.14 mg/l TCLP
Sulfide ⁵	18496–25–8	14	NA
Thallium	7440–28–0	1.4	0.20 mg/l TCLP
Vanadium ⁵	7440–62–2	4.3	1.6 mg/l TCLP
Zinc ⁵	7440–66–6	2.61	4.3 mg/l TCLP

FOOTNOTES TO TABLE UTS

- 1 CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with its salts and/or esters, the CAS number is given for the parent compound only.
- 2 Concentration standards for wastewaters are expressed in mg/l and are based on analysis of composite samples.
- 3 Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR part 264, subpart O or 40 CFR part 265, subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in 40 CFR 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

FOOTNOTES TO TABLE UTS—Continued

- 4 Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010C or 9012B, found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in 40 CFR 260.11, with a sample size of 10 grams and a distillation time of one hour and 15 minutes.
- 5 These constituents are not "underlying hazardous constituents" in characteristic wastes, according to the definition at § 268.2(i).
- 6 [Reserved]
- 7 This constituent is not an underlying hazardous constituent as defined at § 268.2(i) of this Part because its UTS level is greater than its TC level, thus a treatment selenium waste would always be characteristically hazardous, unless it is treated to below its characteristic level.
- 8 This standard is temporarily deferred for soil exhibiting a hazardous characteristic due to D004–D011 only.

[59 FR 48103, Sept. 19, 1994, as amended at 60 FR 302, Jan. 3, 1995; 61 FR 15654, Apr. 8 1996; 61 FR 33690, June 28, 1996; 62 FR 7596, Feb. 19, 1997; 63 FR 24626, May 4, 1998; 63 FR 28739, May 26, 1998; 63 FR 47417, Sept. 4, 1998; 64 FR 25417, May 11, 1999; 65 FR 14475, Mar. 17, 2000; 70 FR 34590, June 14, 2005; 70 FR 9178, Feb. 24, 2005; 71 FR 40279, July 14, 2006; 75 FR 13008, Mar. 18, 2010; 76 FR 34156, June 13, 2011]

§ 268.49 Alternative LDR treatment standards for contaminated soil.

(a) *Applicability.* You must comply with LDRs prior to placing soil that exhibits a characteristic of hazardous waste, or exhibited a characteristic of

hazardous waste at the time it was generated, into a land disposal unit. The following chart describes whether you must comply with LDRs prior to placing soil contaminated by listed hazardous waste into a land disposal unit:

If LDRs	And if LDRs	And if	Then you
Applied to the listed waste when it contaminated the soil*.	Apply to the listed waste now.	Must comply with LDRs
Didn't apply to the listed waste when it contaminated the soil*.	Apply to the listed waste now.	The soil is determined to contain the listed waste when the soil is first generated.	Must comply with LDRs.
Didn't apply to the listed waste when it contaminated the soil*.	Apply to the listed waste now.	The soil is determined not to contain the listed waste when the soil is first generated.	Needn't comply with LDRs.
Didn't apply to the listed waste when it contaminated the soil*.	Don't apply to the listed waste now.	Needn't comply with LDRs.

* For dates of LDR applicability, see 40 CFR Part 268 Appendix VII. To determine the date any given listed hazardous waste contaminated any given volume of soil, use the last date any given listed hazardous waste was placed into any given land disposal unit or, in the case of an accidental spill, the date of the spill.

(b) Prior to land disposal, contaminated soil identified by paragraph (a) of this section as needing to comply with LDRs must be treated according to the applicable treatment standards specified in paragraph (c) of this section or according to the Universal Treatment Standards specified in 40 CFR 268.48 applicable to the contaminating listed hazardous waste and/or the applicable characteristic of hazardous waste if the soil is characteristic. The treatment standards specified in paragraph (c) of this section and the Universal Treat-

ment Standards may be modified through a treatment variance approved in accordance with 40 CFR 268.44.

(c) *Treatment standards for contaminated soils.* Prior to land disposal, contaminated soil identified by paragraph (a) of this section as needing to comply with LDRs must be treated according to all the standards specified in this paragraph or according to the Universal Treatment Standards specified in 40 CFR 268.48.

For D001 [except High (>10%) TOC Subcategory], D002 - D043, and F039 wastes; UHCs, which can reasonably be expected to be present at the point of generation at a concentration above the constituent-specific Universal Treatment Standard, must be indicated on the Underlying Hazardous Constituents Form. UHCs need not be determined for lab packs managed under the alternative treatment standards for lab packs.

No UHCs

UHCs identified on attached Underlying Hazardous Constituents Form

CERTIFICATION STATEMENTS

A. RESTRICTED WASTE REQUIRING TREATMENT

I am the initial generator of the restricted waste(s) listed on the reverse side which must be treated to the applicable treatment standard prior to land disposal.

B. RESTRICTED WASTE MEETING TREATMENT STANDARDS AT THE POINT OF GENERATION

I am the initial generator of the EPA hazardous waste number(s) listed on the reverse side. I have determined that the waste meets all applicable treatment standards set forth in 40 CFR Part 268 and therefore, can be land disposed without further treatment.

"I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR part 268 subpart D. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment."

C. LAB PACKS MANAGED UNDER ALTERNATIVE TREATMENT STANDARDS

The lab packs identified on the reverse side do not contain any of the wastes specified in Appendix IV and are managed under the alternative treatment standards in 40 CFR 268.42(c).

"I certify under penalty of law that I personally have examined and am familiar with the waste and that the lab pack contains only wastes that have not been excluded under appendix IV to 40 CFR part 268 and that this lab pack will be sent to a combustion facility in compliance with the alternative treatment standards for lab packs at 40 CFR 269.42(c). I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment."

D. RESTRICTED WASTE CONSISTING OF CONTAMINATED SOIL NOT MEETING TREATMENT STANDARDS

The contaminated soil identified on the reverse side does not meet the soil treatment standard in 40 CFR 268.49(c).

"I certify under penalty of law that I personally have examined this contaminated soil and it [does/does not] contain listed hazardous waste and [does/does not] exhibit a characteristic of hazardous waste and requires treatment to meet the soil treatment standards as provided by 268.49(c)."

E. DECHARACTERIZED WASTE CONTAINING UNDERLYING HAZARDOUS CONSTITUENTS REQUIRING FURTHER TREATMENT

The decharacterized hazardous waste listed on the reverse side contain underlying hazardous constituents requiring further treatment.

"I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet universal treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

F. RESTRICTED WASTE SUBJECT TO A VARIANCE OR EXEMPTION

The waste identified on the reverse side is exempt from LDR standards and subject to a nationwide variance which expires on _____.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Generator Signature

Date

UNDERLYING HAZARDOUS CONSTITUENTS FORM

Generator Name:				Manifest Number:			
ORGANIC CONSTITUENTS		WW(mg/l)	NWW(mg/kg)	ORGANIC CONSTITUENTS		WW(mg/l)	NWW(mg/kg)
Acenaphthylene		0.059	3.4	o,p'-DDT		0.0039	0.087
Acenaphthene		0.059	3.4	p,p'-DDT		0.0039	0.087
Acetone		0.28	160	Dibenz(a,h)anthracene		0.055	8.2
Acetonitrile		5.6	38	Dibenz(a,e)pyrene		0.061	NA
Acetophenone		0.01	9.7	1,2-Dibromo-3-chloropropane		0.11	15
2-Acetylaminofluorene		0.059	140	1,2-Dibromoethane/Ethylene dibromide		0.028	15
Acrolein		0.29	NA	Dibromomethane		0.11	15
Acrylamide		19	23	m-Dichlorobenzene		0.036	6
Acrylonitrile		0.24	84	o-Dichlorobenzene		0.088	6
Aldicarb sulfone ^o		0.056	0.28	p-Dichlorobenzene		0.09	6
Aldrin		0.021	0.066	Dichlorodifluoromethane		0.23	7.2
4-Aminobiphenyl		0.13	NA	1,1-Dichloroethane		0.059	6
Aniline		0.81	14	1,2-Dichloroethane		0.21	6
o-Anisidine		0.01	0.66	1,1-Dichloroethylene		0.025	6
Anthracene		0.059	3.4	trans-1,2-Dichloroethylene		0.054	30
Aramite		0.36	NA	2,4-Dichlorophenol		0.044	14
alpha-BHC		0.00014	0.066	2,6-Dichlorophenol		0.044	14
beta-BHC		0.00014	0.066	2,4-Dichlorophenoxyacetic acid/2,4-D		0.72	10
delta-BHC		0.023	0.066	1,2-Dichloropropane		0.85	18
gamma-BHC		0.0017	0.066	cis-1,3-Dichloropropylene		0.036	18
Barban ^o		0.056	1.4	trans-1,3-Dichloropropylene		0.036	18
Bendiocarb ^o		0.056	1.4	Dieldrin		0.017	0.13
Benomyl ^l		0.056	1.4	Diethyl phthalate		0.2	28
Benzene		0.14	10	p-Dimethylaminoazobenzene		0.13	NA
Benz(a)anthracene		0.059	3.4	2,4-Dimethylaniline		0.01	0.66
Benzal chloride		0.055	6	2,4-Dimethyl phenol		0.036	14
Benzo(b)fluoranthene		0.11	6.8	Dimethyl phthalate		0.047	28
Benzo(k)fluoranthene		0.11	6.8	Di-n-butyl phthalate		0.057	28
Benzo(g,h,i)perylene		0.0055	1.8	1,4-Dinitrobenzene		0.32	2.3
Benzo(a)pyrene		0.061	3.4	4,6-Dinitro-o-cresol		0.28	160
Bromodichloromethane		0.35	15	2,4-Dinitrophenol		0.12	160
Bromomethane/Methyl bromide		0.11	15	2,4-Dinitrotoluene		0.32	140
4-Bromophenyl phenyl ether		0.055	15	2,6-Dinitrotoluene		0.55	28
n-Butyl alcohol		5.6	2.6	Di-n-octyl phthalate		0.017	28
Butylate ^o		0.042	1.4	Di-n-propylnitrosamine		0.4	14
Butyl benzyl phthalate		0.017	28	1,4-Dioxane		12	170
2-sec-Butyl-4,6-dinitrophenol/Dinoseb		0.066	2.5	Diphenylamine		0.92	13
Carbaryl ^l		0.006	0.14	Diphenylnitrosamine		0.92	13
Carbenzadim ^o		0.056	1.4	1,2-Diphenylhydrazine		0.087	NA
Carbofuran ^o		0.006	0.14	Disulfoton		0.017	6.2
Carbofuran phenol ^o		0.056	1.4	Dithiocarbamates (total) ^o		0.028	28
Carbon disulfide		3.8	4.8*	Endosulfan I		0.023	0.066
Carbon tetrachloride		0.057	6	Endosulfan II		0.029	0.13
Carbosulfan ^o		0.028	1.4	Endosulfan sulfate		0.029	0.13
Chlordane (a&g isomers)		0.0033	0.26	Endrin		0.0028	0.13
p-Chloroaniline		0.46	16	Endrin aldehyde		0.025	0.13
Chlorobenzene		0.057	6	EPTC ^o		0.042	1.4
Chlorobenzilate		0.1	NA	Ethyl acetate		0.34	33
2-Chloro-1,3-butadiene		0.057	0.28	Ethyl benzene		0.057	10
Chlorodibromomethane		0.057	15	Ethyl cyanide/Propanenitrile		0.24	360
Chloroethane		0.27	6	Ethyl ether		0.12	160
bis(2-Chloroethoxy)methane		0.036	7.2	Ethyl methacrylate		0.14	160
bis(2-Chloroethyl)ether		0.033	6	Ethylene oxide		0.12	NA
Chloroform		0.046	6	bis(2-ethylhexyl)phthalate		0.28	28
bis(2-Chloroisopropyl)ether		0.055	7.2	Famphur		0.017	15
p-Chloro-m-cresol		0.018	14	Fluoranthene		0.068	3.4
2-Chloroethyl vinyl ether		0.062	NA	Fluorene		0.059	3.4
Chloromethane/Methyl chloride		0.19	30	Formetate hydrochloride ^o		0.056	1.4
2-Chloronaphthalene		0.055	5.6	Heptachlor		0.0012	0.066
2-Chlorophenol		0.044	5.7	1,2,3,4,6,7,8-HpCDD		0.000035	0.0025
3-Chloropropylene		0.036	30	1,2,3,4,6,7,8-HpCDF		0.000035	0.0025
Chrysene		0.059	3.4	1,2,3,4,7,8,9-HpCDF		0.000035	0.0025
p-Cresidine		0.01	0.66	Heptachlor epoxide		0.016	0.066
o-Cresol		0.11	5.6	Hexachlorobenzene		0.055	10
m-Cresol		0.77	5.6	Hexachlorobutadiene		0.055	5.6
p-Cresol		0.77	5.6	Hexachlorocyclopentadiene		0.057	2.4
m-Cumenyl methylcarbamate ^o		0.056	1.4	HxCDDs (All Hexachlorodibenzo-p-dioxins)		0.000063	0.001
Cyclohexanone		0.36	0.75*	HxCDFs (All Hexachlorodibenzofurans)		0.000063	0.001
o,p'-DDD		0.023	0.087	Hexachloroethane		0.055	30
p,p'-DDD		0.023	0.087	Hexachloropropylene		0.035	30
o,p'-DDE		0.031	0.087	Indeno(1,2,3-c,d) pyrene		0.0055	3.4
p,p'-DDE		0.031	0.087	Iodomethane		0.19	65

UNDERLYING HAZARDOUS CONSTITUENTS FORM

ORGANIC CONSTITUENTS	WW(mg/l)	NWW(mg/kg)	ORGANIC CONSTITUENTS	WW(mg/l)	NWW(mg/kg)
Isobutyl alcohol	5.6	170	Thiodicarb ^o	0.019	1.4
Isodrin	0.021	0.066	Thiophanate-methyl ^o	0.056	1.4
Isosafrole	0.081	2.6	Toluene	0.08	10
Kepone	0.0011	0.13	Toxaphene	0.0095	2.6
Methacrylonitrile	0.24	84	Triallate ^o	0.042	1.4
Methanol	5.6	0.75*	Tribromomethane/Bromoform	0.63	15
Methapyrilene	0.081	1.5	1,2,4-Trichlorobenzene	0.055	19
Methiocarb ^o	0.056	1.4	1,1,1-Trichloroethane	0.054	6
Methomyl ^o	0.028	0.14	1,1,2-Trichloroethane	0.054	6
Methoxychlor	0.25	0.18	Trichloroethylene	0.054	6
3-Methylcholanthrene	0.0055	15	Trichlorofluoromethane	0.02	30
4,4-Methylene bis(2-chloroaniline)	0.5	30	2,4,5-Trichlorophenol	0.18	7.4
Methylene chloride	0.089	30	2,4,6-Trichlorophenol	0.035	7.4
Methyl ethyl ketone	0.28	36	2,4,5-Trichlorophenoxyacetic acid/2,4,5-T	0.72	7.9
Methyl isobutyl ketone	0.14	33	1,2,3-Trichloropropane	0.85	30
Methyl methacrylate	0.14	160	1,1,2-Trichloro-1,2,2-trifluoroethane	0.057	30
Methyl methanesulfonate	0.018	NA	Triethylamine ^o	0.081	1.5
Methyl parathion	0.014	4.6	tris-(2,3-Dibromopropyl) phosphate	0.11	0.1
Metolcarb ^o	0.056	1.4	Vernolate ^o	0.042	1.4
Mexacarbate ^o	0.056	1.4	Vinyl chloride	0.27	6
Molinate ^o	0.042	1.4	Xylenes-mixed isomers (sum of o-, m-, and p-	0.32	30
Naphthalene	0.059	5.6			
2-Naphthylamine	0.52	NA	INORGANIC CONSTITUENTS	WW(mg/l)	NWW(mg/kg)
o-Nitroaniline	0.27	14	Antimony	1.9	1.15*
p-Nitroaniline	0.028	28	Arsenic	1.4	5.0*
Nitrobenzene	0.068	14	Barium	1.2	21*
5-Nitro-o-toluidine	0.32	28	Beryllium	0.82	1.22*
o-Nitrophenol	0.028	13	Cadmium	0.69	0.11*
p-Nitrophenol	0.12	29	Chromium (Total)	2.77	0.60*
N-Nitrosodiethylamine	0.4	28	Cyanides (Total) ^o	1.2	590
N-Nitrosodimethylamine	0.4	2.3	Cyanides (Amenable) ^o	0.86	30
N-Nitroso-di-n-butylamine	0.4	17	Fluoride ^o	35	NA
N-Nitrosomethylethylamine	0.4	2.3	Lead	0.69	0.75*
N-Nitrosomorpholine	0.4	2.3	Mercury—Nonwastewater from Retort	NA	0.20*
N-Nitrosopiperidine	0.013	35	Mercury—All Others	0.15	0.025*
N-Nitrosopyrrolidine	0.013	35	Nickel	3.98	11*
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	0.000063	0.005	Selenium ^o	0.82	5.7*
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	0.000063	0.005	Silver	0.43	0.14*
Oxamyl ^o	0.056	0.28	Sulfide ^o	14	NA
Parathion	0.014	4.6	Thallium	1.4	0.20*
Total PCBs (sum of all PCB isomers, or all	0.1	10	Vanadium ^o	4.3	1.6*
Pebulate ^o	0.042	1.4	Zinc ^o	2.61	4.3*
Pentachlorobenzene	0.055	10			
PeCDDs (All Pentachlorodibenzo-p-dioxins)	0.000063	0.001			
PeCDFs (All Pentachlorodibenzofurans)	0.000035	0.001			
Pentachloroethane	0.055	6			
Pentachloronitrobenzene	0.055	4.8			
Pentachlorophenol	0.089	7.4			
Phenacetin	0.081	16			
Phenanthrene	0.059	5.6			
Phenol	0.039	6.2			
1,3-Phenylenediamine	0.01	0.66			
Phorate	0.021	4.6			
Phthalic acid	0.055	28			
Phthalic anhydride	0.055	28			
Physostigmine ^o	0.056	1.4			
Physostigmine salicylate ^o	0.056	1.4			
Promecarb ^o	0.056	1.4			
Pronamide	0.093	1.5			
Propham ^o	0.056	1.4			
Propoxur ^o	0.056	1.4			
Prosulfocarb ^o	0.042	1.4			
Pyrene	0.067	8.2			
Pyridine	0.014	16			
Safrole	0.081	22			
Silvex/2,4,5-TP	0.72	7.9			
1,2,4,5-Tetrachlorobenzene	0.055	14			
TCDDs (All Tetrachlorodibenzo-p-dioxins)	0.000063	0.001			
TCDFs (All Tetrachlorodibenzofurans)	0.000063	0.001			
1,1,1,2-Tetrachloroethane	0.057	6			
1,1,2,2-Tetrachloroethane	0.057	6			
Tetrachloroethylene	0.056	6			
2,3,4,6-Tetrachlorophenol	0.03	7.4			

*Concentration in mg/l TCLP

Sampling & Analysis



Wastes - Hazardous Waste - Test Methods

You are here: [EPA Home](#) [Wastes](#) [Hazardous Waste](#) [Test Methods](#) [Frequent Questions](#) [TCLP Questions](#)

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TCLP Questions

[TCLP Requirements for the Method of Standard Addition Total Constituent Analysis Instead of TCLP Analysis](#)
[TCLP Versus SPLP](#)
[TCLP Holding Times](#)

[Failing to Meet the Holding Times or Perform the Method as Written](#)
[TCLP Preservation Requirements](#)
[TCLP Duplicate Analysis](#)
[Changing the Acid Strength in the TCLP](#)

TCLP Requirements for the Method of Standard Addition

Question: What are the requirements for performing the method of standard addition when analyzing TCLP extracts for lead by Method 6010B?

Test Methods
 Frequently Asked Questions

Answer: The criteria for the method of standard addition (MSA) are outlined in Sec. 8.4 of Method 1311. In general, when the recovery of the matrix spike is less than 50%, and the analyte of concern is within 20% of the regulatory concentration, the sample must be quantified by MSA. This requirement applies to all TCLP inorganic analytes and the methods used to determine those analytes, including ICP Method 6010B. Generally, most samples will not have to be analyzed by MSA, given the criteria listed in the method. However, the laboratory may choose to apply tighter criteria than those described in the method.

Total Constituent Analysis Instead of TCLP Analysis

Question: Is it acceptable to perform a total constituent analysis instead of a TCLP analysis and then divide the total concentration by 20 to determine if a waste is non-hazardous, as is implied in Section 1.2 of Method 1311, TCLP?

Answer: Section 1.2 of the TCLP *does* allow for a total constituent analysis in lieu of the TCLP extraction. If a waste is 100% solid, as defined by the TCLP method, then the results of the total constituent analysis may be divided by twenty to convert the total results into the maximum leachable concentration. This factor is derived from the 20:1 liquid-to-solid ratio employed in the TCLP. If a waste has filterable liquid, then the concentration of the analyte in each phase (liquid and solid) must be determined. The following equation may be used to calculate this value:

$$\frac{[A \times B] + [C \times D]}{B + [20 (L/kg) \times D]} = E$$

Where:

A = Concentration of the analyte in liquid portion of the sample (mg/L)
 B = Volume of the liquid portion of the sample (L).
 C = Concentration of the analyte in solid portion of the sample (mg/kg)
 D = Weight of the solid portion of the sample (kg)
 E = Maximum theoretical concentration in leachate (mg/L)

The value obtained (E) can be used to show that the maximum theoretical concentration in a leachate from the waste could not exceed the concentration specified in the toxicity characteristic (TC) (40 CFR 261.24).

In addition, if the total constituent analysis results themselves are below the TC limits without dividing by 20, then the same argument holds true, i.e., the maximum theoretical concentration in the leachate could not exceed the TC limits.

Subpart CC

Subpart CC

Pursuant to Rule 306(1)(a)(i) (MAC R 299.9306) of the Part 111 rules of Act 451, the Michigan Natural Resource and Environmental Protection Act, large quantity generators of hazardous waste must meet the [40 CFR 265, Subpart CC](#) requirements when accumulating hazardous waste. The Subpart CC provisions are adopted by reference under Rule 634 (MAC R 299.9634) of the Part 111 rules and require large quantity generators of hazardous waste managing hazardous waste with a volatile organic concentration of 500 ppmv or greater to monitor and control air emissions from their hazardous waste handling activities.

When the volatile organic content (VOC) of the materials used in the process are relatively simple (e.g. one or two products are used in consistent ratios that remain unaltered) a generator can calculate the volatile organic concentration using the percent VOC identified on the manufacturer SDS. A material that is 1% VOC by volume has 10,000 parts per million VOC. To determine the percent VOC by volume, one would multiply the percent VOC on the SDS by 10,000 to come up with a VOC PPMV. For liquids, the weight unit would be liters. For solids the weigh unit would be kilograms. When using SDS, generally the worst case scenario is calculated and it may be easy to exceed the Subpart CC applicability threshold of 500 PPMV.

When a process uses multiple materials at varying ratios over time, calculating the VOC ppmv is too difficult and sampling and analysis is necessary. For additional details on evaluating subpart CC applicability, see the waste determination procedures found under [40 CFR, Part 264.0184](#).

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2. Subpart CC Waste Determination Options

The air emission standards in 40 CFR Parts 264/265, Subpart CC, apply to all tanks, surface impoundments, and containers used to manage hazardous waste at treatment, storage and disposal facilities and large quantity generator sites. However, only units that manage hazardous waste with an average volatile organic (VO) concentration of greater than or equal to 500 parts per million by weight (ppmw) require air emission controls (Sections 264.1082(c)(1) and 265.1083(c)(1)). How must an owner or operator determine the average VO concentration of their waste?

An owner or operator may use either direct measurement or knowledge of the waste to determine the average VO concentration at the point of waste origination. Direct measurement requires analysis in accordance with the requirements of Method 25D of Part 60, Appendix A, or one of the other methods specified in Section 265.1084(a)(3). Results obtained by using any method other than Method 25D must be adjusted to equate to a Method 25D equivalent concentration. This is accomplished by multiplying the total concentration measured by the appropriate fm factors for the constituents in the waste (61 FR 59932, 59942; November 25, 1996).

According to Section 265.1084(a)(4), owners or operators may also use their knowledge of the waste to determine the average VO concentration of the waste. They may use information that they have prepared or information supplied by the generator. Examples of such information include adjusted results obtained from another test method, organic material balances for the source or process generating the waste, documentation that the waste is generated by a process for which no organic-containing materials are used, or other knowledge based on manifests, shipping papers, or waste certification notices (Sections 265.1084(a)(4)(i)-(iii)).

Any applied knowledge or chosen test method does not need to account for any organic compounds present in the waste that have a Henry's Law constant of less than 0.1Y/X at 25°C (61 FR 59932, 59942; November 25, 1996). Appendix VI to Part 265 contains a list of compounds that meet this requirement.

Liquid Industrial Waste

Liquid Industrial Waste Resources

Liquid industrial waste definition, Part 121 of Act 451, Section 12101(n) (MCL 324.12101(n)) –

"Liquid industrial waste" means any brine, by-product, industrial wastewater, leachate, off-specification commercial chemical product, sludge, sanitary sewer clean-out residue, storm sewer clean-out residue, grease trap clean-out residue, spill residue, used oil, or other liquid waste that is produced by, is incident to, or results from industrial, commercial, or governmental activity or any other activity or enterprise determined to be liquid by method 9095 (paint filter liquids test) as described in "Test methods for evaluating solid wastes, physical/chemical methods," United States environmental protection agency publication no. SW-846, and which is discarded. Liquid industrial waste does not include any of the following:

- (i) Hazardous waste regulated and required to be manifested under part 111.
- (ii) Septage waste regulated under part 117.
- (iii) Medical waste regulated under part 138 of the public health code, 1978 PA 368, MCL 333.13801 to 333.13831.
- (iv) A discharge to the waters of the state in accordance with a permit, order, or rule under part 31.
- (v) A liquid generated by a household.
- (vi) A liquid regulated under 1982 PA 239, MCL 287.651 to 287.683.
- (vii) Material managed in accordance with section 12102a.

Materials not specified as liquid industrial waste, Part 121 of Act 451, Section 12102a

The following materials are not liquid industrial wastes when managed as specified:

- (a) A material that is used or reused as an effective substitute for commercial products or returned to the original process, if the material does not require reclamation prior to use or reuse, is not directly burned to recover energy or used to produce a fuel, and is not applied to the land or used in products applied to the land.
- (b) A used oil that is directly burned to recover energy or used to produce a fuel if all of the following requirements are met:
 - (i) The material meets the used oil specifications of R 299.9809(1)(f) of the Michigan administrative code.
 - (ii) The material contains no greater than 2 ppm polychlorinated biphenyls.
 - (iii) The material has a minimum energy content of 17,000 BTU/lb.
 - (iv) The material is expressly authorized as a used oil fuel source, regulated under part 55, or, in another state, regulated under a similar air pollution control authority.
- (c) A liquid fully contained inside a manufactured article, until the liquid is removed or the manufactured equipment is discarded, at which point it becomes subject to this part.
- (d) A liquid waste sample transported for testing to determine its characteristics or composition. The sample becomes subject to this part when discarded.
- (e) A liquid that is not regulated under part 615 that is generated in the drilling, operation, maintenance, or closure of a well, or other drilling operation, including the installation of cathodic protection or directional drilling, if either of the following applies:
 - (i) The liquid is left in place at the point of generation in compliance with part 31, 201, or 213.
 - (ii) The liquid is transported off-site from a location that is not a known facility as defined in section 20101, and all of the following occur:
 - (A) The disposal complies with applicable provisions of part 31 or 115.
 - (B) The disposal is not to a surface water.
 - (C) The landowner of the disposal site has authorized the disposal.
- (f) A liquid vegetable or animal fat oil that is transported directly to a producer of biofuels for the purpose of converting the oil to biofuel.
- (g) An off-specification fuel, including a gasoline blendstock, that was generated in a pipeline as the interface material from the mixture of 2 adjacent fuel products and that will be processed, by blending or by distillation or other refining, to produce a fuel product or fuel products.
- (h) An off-specification fuel, including a gasoline blendstock, that resulted from the commingling of off-specification fuel products or from phase separation in a gasoline and alcohol blend and that will be processed, by distillation or other refining, to produce fuel products.
- (i) An off-specification fuel product transported directly to a distillation or refining facility to produce a fuel product or fuel products regulated pursuant to 40 CFR part 80.
- (j) A liquid or a sludge and associated liquid authorized to be applied to land under part 31 or 115.
- (k) A liquid residue remaining in a container after pouring, pumping, aspirating, or another practice commonly employed to remove liquids has been utilized, if not more than 1 inch of residue remains on the bottom, or, for containers less than or equal to 110 gallons in size, not more than 3% by weight of residue remains in the container, or, for containers greater than 110 gallons in size, not more than 0.3% by weight of residue remains in the container. The liquid residue becomes subject to this part when discarded.

(l) A residual amount of liquid remaining in a container and generated as a result of transportation of a solid waste in that container.

(m) A liquid brine authorized for use as dust and ice control regulated under parts 31 and 615.

(n) Food processing residuals as defined in section 11503, or site-separated material or source-separated material approved by the department under part 115, that, to produce biogas, will be decomposed in a controlled manner under anaerobic conditions using a closed system that complies with part 55.

(o) A liquid approved by the director for use as a biofuel in energy production in compliance with part 55 that is not speculatively accumulated and that is transported directly to the burner of the biofuel.

LIW Waste Codes Included in Uniform Manifest Instructions

WASTE STREAM	WASTE CODE	CONSOLIDATED WASTE CODE
Mixed Solvents	007L	007LC
Pharmaceutical	014L	014LC
Crankcase Oil	017L	017LC
Coolants and Water Soluble Oils	019L	019LC
Other Oil	021L	021LC
Brine	022L	022LC
PCB	026L	026LC
Other wastes	029L	029LC
Antifreeze	030L	030LC
Storm Sewer Cleanouts	031L	031LC
Sanitary Sewer Cleanouts	032L	032LC
X-Ray/Photo Cleaning Solutions	033L	033LC
Water Based Cleaning Solutions	034L	034LC
Car Wash Sludges	035L	035LC
Grease Trap Wastes	036L	036LC

Used Oil Characterization

To characterize used oil, follow the waste characterization steps found in Section 2 of the [Waste Characterization Reference Book](#). You must also perform the following additional steps when evaluating used oil.

In Michigan, Rule 809 of the [Part 111 rules](#) (R 299.9809) defines what is, and is not, subject to regulation as a used oil and liquid industrial waste versus regulation as a hazardous waste. Additionally, Section 12102a(b) of [Part 121](#) specifies when reclaimed used oil can be managed as fuel and is no longer subject to regulation as a waste. To verify the regulatory status of used oil and to meet the requirements of Rule 202(5) of the Part 111 rules, used oil handlers must maintain sufficient documentation to demonstrate the regulatory status of their used oil.

In Michigan, used oil cannot be mixed with halogenated listed hazardous waste, regardless of the generator regulatory status (conditionally exempt small quantity generator [CESQG], small quantity generator or large quantity generator) and retain regulatory status as a used oil.¹

Moreover, used oil that exceeds 1000 parts per million (ppm) total halogen content is presumed to have been mixed with halogenated hazardous waste and is subject to hazardous waste regulation. The used oil generator can successfully rebut this presumption by demonstrating the following utilizing knowledge of the total halogen content of the used oil backed by documentation and/or analytical test data, as appropriate:

1. that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in [40 C.F.R. part 261, Appendix VIII](#);
2. that the used oil is a metalworking oil containing chlorinated paraffins and the used oil is processed through a tolling agreement per 40 C.F.R. §279.24(c). If the used oil containing chlorinated paraffins is reclaimed/recycled in any other manner, the generator must still rebut the presumption that the used oil was mixed with listed halogenated hazardous waste.
3. that the used oil is contaminated with chlorofluorocarbons removed from refrigeration units, the used oil is not mixed with other non-refrigeration used oil, and the chlorofluorocarbons in the oil are reclaimed.

[Rebutting the presumption](#) is generally requires costly laboratory testing. To maintain the value of used oil and ensure it is easily recycled as required under [Part 167](#), be sure to manage your used oil separate from other waste streams. If the used oil is determined to be subject to regulation as used oil (e.g. it is not a presumed or known hazardous waste), it is also subject to regulation as a liquid industrial waste. Consequently, the used oil must be managed to meet both the used oil regulations found in Part 8 of the Part 111 Rules and the liquid industrial waste regulations found in Part 121.

Before evaluating whether used oil can be recycled and reused as a fuel product, the level of polychlorinated biphenyl (PCB) in the oil must be determined. Per Rule 809(1)(f) and the Toxic Substance Control Act, PCB levels in the oil cannot exceed 2 ppm. Moreover, most air use permits limit the PCB level to 1 ppm. Both levels are intended to represent the method detection level for PCBs when testing oil. Thus, these limits represent a practical way to prohibit PCBs in oil that is intended to be burned as fuel.

To market used oil as a product that is not subject to waste regulation, the generator or designated facility managing the used oil must meet the used oil marketer requirements found in Rule 815 of the Part 111 rules and the relevant Part 121 requirements that apply. The used oil marketer must demonstrate the used oil is a “material not specified as a liquid industrial waste” pursuant to [Section 12102a](#)(b) of Part 121 and meets the following “specification used oil” (also called on-specification used oil or on-spec used oil) criteria:

- A maximum arsenic concentration of 5 ppm
- A maximum cadmium concentration of 2 ppm

¹ Under the federal Resource Conservation and Recovery Act (RCRA) listed halogenated hazardous waste generated by a CESQG can be mixed with used oil and the mixture retains its regulatory status as used oil provided the resulting mixture does not exceed 1000 parts ppm total halogen content.

Used Oil Characterization

- A maximum chromium concentration of 10 ppm
- A maximum lead concentration of 100 ppm
- A maximum total halogen concentration of 4,000 ppm
- A minimum flash point of 100 degrees Fahrenheit
- A minimum energy content of 17,000 BTU/hr

If the oil meets all of the above limits, but exceeds the 1,000 ppm total halogens, the used oil marketer must successfully rebut the presumption that the oil contains listed halogenated hazardous waste. Any successfully rebutted oil exceeding 4,000 ppm halogens and otherwise meeting the above contaminant levels, BTU values and exhibiting no detectable PCBs can be managed as “off-specification used oil” that can be burned as fuel but remains subject to all of the used oil requirements of Part 111 and the liquid industrial requirements of Part 121. Therefore, off-specification used oil, when transported, must be documented as specified by Part 121 and transported by an [Act 138](#) permitted and registered liquid industrial waste transporter.

Manifests

Landfill Waste Acceptance



Requested Facility: _____ Unsure Profile Number: _____
 Multiple Generator Locations (Attach Locations) Request Certificate of Disposal Renewal? Original Profile Number: _____

A. GENERATOR INFORMATION (MATERIAL ORIGIN)

- 1. Generator Name: _____
- 2. Site Address: _____
(City, State, ZIP) _____
- 3. County: _____
- 4. Contact Name: _____
- 5. Email: _____
- 6. Phone: _____ 7. Fax: _____
- 8. Generator EPA ID: _____ N/A
- 9. State ID: _____ N/A

C. MATERIAL INFORMATION

- 1. Common Name: _____
Describe Process Generating Material: See Attached
- 2. Material Composition and Contaminants: See Attached

1.	
2.	
3.	
4.	

Total composition must be equal to or greater than 100% $\geq 100\%$
- 3. State Waste Codes: _____ N/A
- 4. Color: _____
- 5. Physical State at 70°F: Solid Liquid Other: _____
- 6. Free Liquid Range Percentage: _____ to _____ N/A
- 7. pH: _____ to _____ N/A
- 8. Strong Odor: Yes No Describe: _____
- 9. Flash Point: <140°F 140°-199°F $\geq 200^\circ$ N/A

E. ANALYTICAL AND OTHER REPRESENTATIVE INFORMATION

- 1. Analytical attached Yes
Please identify applicable samples and/or lab reports:
- 2. Other information attached (such as MSDS)? Yes

G. GENERATOR CERTIFICATION (PLEASE READ AND CERTIFY BY SIGNATURE)

By signing this EZ Profile™ form, I hereby certify that all information submitted in this and all attached documents contain true and accurate descriptions of this material, and that all relevant information necessary for proper material characterization and to identify known and suspected hazards has been provided. Any analytical data attached was derived from a sample that is representative as defined in 40 CFR 261 - Appendix 1 or by using an equivalent method. All changes occurring in the character of the material (i.e., changes in the process or new analytical) will be identified by the Generator and be disclosed to Waste Management prior to providing the material to Waste Management.

If I am an agent signing on behalf of the Generator, I have confirmed with the Generator that information contained in this Profile is accurate and complete.

Name (Print): _____ Date: _____
Title: _____
Company: _____

B. BILLING INFORMATION

SAME AS GENERATOR

- 1. Billing Name: _____
- 2. Billing Address: _____
(City, State, ZIP) _____
- 3. Contact Name: _____
- 4. Email: _____
- 5. Phone: _____ 6. Fax: _____
- 7. WM Hauled? Yes No
- 8. P.O. Number: _____
- 9. Payment Method: Credit Account Cash Credit Card

D. REGULATORY INFORMATION

- 1. EPA Hazardous Waste? Yes* No
Code: _____
- 2. State Hazardous Waste? Yes No
Code: _____
- 3. Is this material non-hazardous due to Treatment, Delisting, or an Exclusion? Yes* No
- 4. Contains Underlying Hazardous Constituents? Yes* No
- 5. From an industry regulated under Benzene NESHAP? Yes* No
- 6. Facility remediation subject to 40 CFR 63 GGGGG? Yes* No
- 7. CERCLA or State-mandated clean-up? Yes* No
- 8. NRC or State-regulated radioactive or NORM waste? Yes* No
- *If Yes, see Addendum (page 2) for additional questions and space.**
- 9. Contains PCBs? → If Yes, answer a, b and c. Yes No
 - a. Regulated by 40 CFR 761? Yes No
 - b. Remediation under 40 CFR 761.61 (a)? Yes No
 - c. Were PCB imported into the US? Yes No
- 10. Regulated and/or Untreated Medical/Infectious Waste? Yes No
- 11. Contains Asbestos? Yes No
→ If Yes: Non-Friable Non-Friable - Regulated Friable

F. SHIPPING AND DOT INFORMATION

- 1. One-Time Event Repeat Event/Ongoing Business
- 2. Estimated Quantity/Unit of Measure: _____
 Tons Yards Drums Gallons Other: _____
- 3. Container Type and Size: _____
- 4. USDOT Proper Shipping Name: _____ N/A

Certification Signature



Only complete this Addendum if prompted by responses on EZ Profile™ (page 1) or to provide additional information. Sections and question numbers correspond to EZ Profile™.

Profile Number: _____

C. MATERIAL INFORMATION

Describe Process Generating Material (Continued from page 1): _____ If more space is needed, please attach additional pages.

Material Composition and Contaminants (Continued from page 1): _____ If more space is needed, please attach additional pages.

5.	
6.	
7.	
8.	
9.	
Total composition must be equal to or greater than 100%	≥100%

D. REGULATORY INFORMATION

Only questions with a "Yes" response in Section D on the EZ Profile™ form (page 1) need to be answered here.

1. EPA Hazardous Waste

a. Please list all USEPA listed and characteristic waste code numbers:

- b. Is the material subject to the Alternative Debris standards (40 CFR 268.45)? Yes No
- c. Is the material subject to the Alternative Soil standards (40 CFR 268.49)? → If Yes, complete question 4. Yes No
- d. Is the material exempt from Subpart CC Controls (40 CFR 264.1083)? Yes No
 → If Yes, please check **one** of the following:
 - Waste meets LDR or treatment exemptions for organics (40 CFR 264.1082(c)(2) or (c)(4))
 - Waste contains VOCs that average <500 ppmw (CFR 264.1082(c)(1)) – will require annual update.

2. State Hazardous Waste → Please list all state waste codes: _____

3. For material that is Treated, Delisted, or Excluded → Please indicate the category, below:
 Delisted Hazardous Waste Excluded Waste under 40 CFR 261.4 → Specify Exclusion: _____
 Treated Hazardous Waste Debris Treated Characteristic Hazardous Waste → If checked, complete question 4.

4. Underlying Hazardous Constituents → Please list all Underlying Hazardous Constituents:

5. Industries regulated under Benzene NESHAP include petroleum refineries, chemical manufacturing plants, coke by-product recovery plants, and TSDFs.

- a. Are you a TSDF? → If yes, please complete Benzene NESHAP questionnaire. If not, continue. Yes No
- b. Does this material contain benzene? Yes No
 1. If yes, what is the flow weighted average concentration? _____ ppmw
- c. What is your facility's current total annual benzene quantity in Megagrams? <1 Mg 1–9.99 Mg ≥10 Mg
- d. Is this waste soil from a remediation? Yes No
 1. If yes, what is the benzene concentration in remediation waste? _____ ppmw
- e. Does the waste contain >10% water/moisture? Yes No
- f. Has material been treated to remove 99% of the benzene or to achieve <10 ppmw? Yes No
- g. Is material exempt from controls in accordance with 40 CFR 61.342? Yes No
 → If yes, specify exemption: _____
- h. Based on your knowledge of your waste and the BWON regulations, do you believe that this waste stream is subject to treatment and control requirements at an off-site TSDF? Yes No

6. 40 CFR 63 GGGGG → Does the material contain <500 ppmw VOHAPs at the point of determination? Yes No

7. CERCLA or State-Mandated clean up → Please submit the Record of Decision or other documentation with process information to assist others in the evaluation for proper disposal. A "Determination of Acceptability" may be needed for CERCLA wastes not going to a CERCLA approved facility.

8. NRC or state regulated radioactive or NORM Waste → Please identify Isotopes and pCi/g: _____



Additional Profile Information

Profile Number: _____

C. MATERIAL INFORMATION

Material Composition and Contaminants (Continued from page 2):

If more space is needed, please attach additional pages.

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40.	
Total composition must be equal to or greater than 100%	
	≥100%

D. REGULATORY INFORMATION

1. EPA Hazardous Waste

a. Please list all USEPA listed and characteristic waste code numbers (Continued from page 2):



F. Michigan Addendum

- 1. Is this Waste to be solidified by WM prior to disposal into the landfill?
2. Does this exhibit any of the reactivity characteristics as defined by MI Part 111 R 299.9212(3)?
3. Does this waste contain any RCRA herbicides or pesticides?
4. Do you generate any regulated Hazardous Waste?
If "Yes," do you have procedures in place to prevent Hazardous Waste from being mixed with this waste?

G. SOLVENTS OR PAINTS:

Not applicable, this waste does not contain any solvents or paints.
What solvent(s), if any, are in use and for what purpose?
If this waste is from a Paint Spray Booth, please explain in detail how the spray guns are cleaned and what is done with that waste?
After a paint line and/or spray gun is cleaned, is the new paint purged through and disposed of separately?

H. Complete this Section ONLY IF THIS WASTE IS PROPOSED FOR DISPOSAL AT WOODLAND MEADOWS

SPECIAL WASTE DECLARATION

(Check below those Special Wastes that are proposed for disposal by Waste Management:)

- a. Waste from an industrial process.
b. Waste from a pollution control process.
c. Waste containing free liquids.
d. Residue and debris from a cleanup of a spill of a chemical or commercial product or a waste listed in a.-c. and l.-n. of this form.
e. Contaminated residuals, or articles from the cleanup of a facility generating, storing, treating or recycling or disposing of chemical substances, commercial products or wastes listed in a.-d., f or g of this form.
f. Any waste which is non-hazardous as a result of treatment pursuant to Subtitle C of the Resource Conservation and Recovery Act (R.C.R.A.).
g. Chemical containing equipment removed from service, which the chemical composition and concentration are unknown.
h. Drums, or containers capable of holding greater than 25 gallons, whether empty, partially full or full.
i. Friable or non-friable asbestos containing waste from building demolition or cleanup, including wallboard, wall, ceiling or spray coverings, pipe insulation, etc.
j. Commercial products or chemicals which are off-specification, outdated, unused or banned. Outdated or off specification uncontaminated food or beverage products in original consumer containers are not included in this category, unless management of such containers is restricted by applicable regulations.
k. Treated or untreated medical waste. Any waste which was once capable, or is capable of inducing infection from a bio-medical source.
l. Residue / sludges from septic tanks, food service grease traps, or wash waters and wastewaters from commercial laundries, and private or public wastewater treatment facilities.
m. Chemical containing equipment removed from service, in which the chemical concentrations are known (e.g., acetylene tanks, cathode ray tubes, lab equipment, fluorescent lights, etc.)
n. Waste produced from the dismantling or demolition of industrial process equipment, or facilities contaminated with chemicals from the industrial process.
o. Incinerator ash generated at a Resource Recovery Facility. A facility which burns only non-hazardous household, commercial or industrial and qualifies for the hazardous waste exclusion in 40CFR261.4(b).
p. Other, if not specified above.

BY COMPLETING SECTION H., CUSTOMER WARRANTS THAT HE/SHE HAS DISCLOSED ALL OF THE TYPES OF SPECIAL WASTE PROPOSED TO BE DISPOSED BY WASTE MANAGEMENT

Landfill Prohibited Materials

Michigan's solid waste law and rules and federal regulations have restrictions about certain wastes being disposed of in municipal solid waste landfills, also called Type II landfills. There are different requirements for residential waste versus waste from other facilities like businesses, non-profits, municipalities, and hospitals.

Customers should call the local landfill authority and waste hauler to find out their specific disposal options. Also contact the local recycling coordinator regarding recycling and reuse options. A list of local recycling contacts is available at www.michigan.gov/wasterecycling. Facilities can also find waste minimization, management, and disposal information in Chapter 2 of the Michigan Guide to Environmental Health and Safety Regulations at www.michigan.gov/ehsguide.

Certain wastes are allowed in Michigan Type II landfills, but only in de minimis quantities.

These wastes include beverage containers, whole motor vehicle tires, and yard clippings. In order to be considered de minimis, they must satisfy all of the following three criteria:

- Commingled with other waste in the truckload – the items cannot be readily separated from the other waste
- Small in quantity – typical of what a single household would generate
- Present in an incidental manner

➤ **Beverage containers**—Beverage containers are 1 gallon or less in size and hold either a:

- Soft drink
- Soda water, carbonated natural, or mineral water, or other nonalcoholic carbonated drink
- Beer, ale, or other malt drink of whatever alcoholic content
- Mixed wine drink or mixed spirit drink

If a deposit was paid on a beverage container, return the container to any retailer that sells that beverage. If a deposit was not paid because it was purchased out-of-state, recycle the container through a [local recycling program](#).

➤ **Scrap tires**—Whole scrap tires may be accepted at a landfill if set aside for further processing, but are prohibited from disposal in the landfill. Prior to landfill disposal, the tire must be cut or otherwise processed into pieces. Most tire retailers will accept old tires when new tires are purchased. Check with tire retailers if they accept other old tires. Some communities hold special waste collection days. Contact the [local recycling program](#) for more information. Lists of registered scrap tire haulers, recyclers, processors, and end-users, along with other scrap tire management requirements can be found at www.michigan.gov/scraptires.

➤ **Yard clippings**—Leaves, grass clippings, vegetable or other garden debris, and shrubbery, brush and tree trimmings less than 4 feet in length and 2 inches in diameter, are prohibited from landfills and incinerators. The ban does not include diseased or infected yard waste. Also vegetative matter used for home decoration and disposed of in de minimis quantities, such as Christmas trees, wreaths, and potted plants are not subject to the ban on yard clippings. Use yard clippings as mulch or practice backyard composting when possible. Contact your county MSU Extension Office (list is at <http://msue.anr.msu.edu>.) for guidance. Yard clippings may also be sent to composting facilities. Go to www.michigan.gov/degwaste “Solid Waste” “Composting” for recycling details and a list of composting facilities.

The following other wastes also have special landfill restrictions.

➤ **Appliances and other items containing refrigerants**—Coolants often known by the trade name Freon®, are regulated under Section 608 of the Clean Air Act, and should not be disposed of in a solid waste landfill without accompanying documentation attesting to the proper removal of refrigerant from the appliances. See information at <http://www.epa.gov/ozone>. Contact the landfill authority to discuss their requirements if they accept appliances. Other options include salvage yards (look in yellow pages under scrap metal heading) or metal recyclers at www.michigan.gov/degmmd. Companies that service appliances may also remove coolants from old appliances prior to recycling or disposal.

- **Asbestos**—Regulated asbestos waste is prohibited from landfills unless the landfill meets additional requirements under the Clean Air Act. Contact the landfill authority to find out if they accept asbestos waste, and any special labeling and packaging requirements. For information about types of asbestos regulated by both DEQ and the Department of Labor and Economic Growth, and a list of licensed abatement contractors, go to www.michigan.gov/deqair and select “Compliance” “Asbestos NESHAP Program”. Homeowners may remove asbestos from their own residences when doing remodeling or demolition projects, but precautions need to be taken and waste taken to a licensed disposal site.
- **Empty drums**—Drums must be crushed to eliminate voids. Contact the landfill authority to see if they accept. Businesses may find drum recyclers at www.michigan.gov/deqrmmd.
- **Lead acid batteries**—Return used batteries to the retailer when purchasing new ones. Any place that sells lead acid batteries must accept at least the same number of batteries sold. Residents should contact the local recycling program for other options. Facilities can find recyclers at www.michigan.gov/deqrmmd.
- **Liquid waste**—Waste that fails the paint filter test is prohibited from landfill disposal when it is not from a household, unless the landfill has an approved research, development, and demonstration project (RDDP). Go to www.michigan.gov/deqwaste “Hazardous & Liquid Industrial Waste” “Hazardous & Liquid Industrial Waste Management” or contact the [District Office](#) for more information.
- **Low-level radioactive waste**—Call the Environmental Assistance Center at 1-800-662-9278, e-mail radioactivematerial@michigan.gov, contact the U.S. Nuclear Regulatory Commission, Region III at 630-829-9500, or go to www.nrc.gov and www.michigan.gov/deqwaste “Radiological Protection” for management and disposal options.
- **Medical waste**—Some medical waste cannot be landfilled. Contact the landfill authority regarding what they accept.
- Residences can find collection programs for sharps at www.michigan.gov/deqmedwaste and the publication “[The Point is Needles Hurt](#)” provides details about handling needles and syringes from a household. Medical waste producing businesses can also find information on handling requirements and disposal services on this website.
- **Polychlorinated Biphenyls (PCBs)**—Contact the landfill authority to see if they accept small capacitors or fluorescent light ballasts containing PCBs. Contact the U.S. Environmental Protection Agency, Region 5 office, at 312-886-7890 or go to www.epa.gov/pcb for details on management and disposal requirements.
- **Regulated hazardous waste**—Household hazardous waste (HHW) is not prohibited from landfills. However, residents are encouraged to participate in local household hazardous waste collection. To find local collection options, go to www.michigan.gov/wasterecycling. Although not recommended, facilities that are [conditionally exempt small quantity generators](#) of hazardous waste may dispose of solid hazardous waste in a Type II landfill *if the landfill authority will accept it*. Other hazardous waste from facilities is prohibited from disposal in solid waste landfills. Contact the DEQ [District Office](#) with questions and go to www.michigan.gov/deqwaste “Hazardous & Liquid Industrial Waste” “Hazardous & Liquid Industrial Waste Management” for information.
- **Septage**—Waste removed from septic systems is prohibited from being landfilled unless the landfill has an approved research, development, and demonstration project (RDDP), or liquids have been removed so it passes the paint filter test. Discuss disposal of dewatered septage with the landfill authority. To find licensed septage waste haulers and information about caring for your septic system, go to www.michigan.gov/deqseptage.
- **Sewage**—Untreated domestic wastewater sewage is not allowed in landfills. Wastewater treatment plants may contact the landfill authority regarding treated sludge ([biosolids](#)) disposal options.
- **Used oil**—Used oil may not be disposed of in landfills, waste incinerators, or used as dust control. Many oil change locations, auto supply stores, and local recycling programs accept used oil. Do not mix used oil with other wastes unless allowed by the recyclers. Businesses have additional [used oil management requirements](#).

Local waste companies can be located in the yellow pages under the heading “Waste Reduction Disposal & Recycling Services.” Landfill information can also be found at www.michigan.gov/deqwaste under “Solid Waste” and “Solid Waste Facilities.” You may also contact the Office of Waste Management and Radiological Protection staff in the DEQ [District Office](#) or the Environmental Assistance Center at 800-662-9278 for assistance.

Online Resources

Waste Characterization Online Resources

- 1) D, F, K, P, U, and state hazardous waste numbers and descriptions -
Go to www.michigan.gov/deqwaste, select white tab on the left that says “Hazardous Waste and Liquid Industrial Waste,” select teal box in the center that says “Hazardous Waste and Liquid Industrial Waste Management,” scroll down to the bottom of the page and select “Laws and Rules,” then select the link for “[administrative rules](#)” to Part 111. Search for relevant tables:
 - D hazardous waste codes – Search Part 111 rules for Table 201a
 - S hazardous waste codes (state acutely toxic) – Search Part 111 rules for Table 202
 - F hazardous waste codes – Search Part 111 rules for Table 203a
 - K hazardous waste codes – Search Part 111 rules for Table 204a
 - P hazardous waste codes – Search Part 111 rules for Table 205a
 - U hazardous waste codes – Search Part 111 rules for Table 205b
 - U hazardous waste codes (state only) – Search Part 111 rules for Table 205c
- 2) EPA Office of Solid Waste Training on RCRA Subtitle C Exclusions (EPA530-K-02-0221)-
<http://www.epa.gov/osw/inforesources/pubs/training/excl.txt>
- 3) EPA Waste Frequent Questions Search - <http://waste.supportportal.com/>
- 4) RCRA Online Compendium of EPA interpretive memos and letters -
<http://www.epa.gov/wastes/inforesources/online/>
- 5) EPA Guidance Manual on the RCRA Regulations of Recycled Hazardous Waste, March 1986 (PB86-208584) -
<http://www.epa.gov/wastes/hazard/recycling/recycling-guide/rec-guide.pdf>
- 6) Identification and Listing of Hazardous Waste 40 CFR §261.4(b): Exclusions: Solid Wastes which are Not Hazardous Wastes A User-Friendly Reference Document, October 2009 -
<http://www.epa.gov/wastes/hazard/wastetypes/wasteid/pdfs/rcra2614b-ref.pdf>
- 7) Hazardous Waste Listings A User-Friendly Reference Document, DRAFT March 2008 -
<http://www.epa.gov/wastes/hazard/wastetypes/pdfs/listing-ref.pdf>
- 8) Hazardous Waste Characteristics A User-Friendly Reference Document, October 2009
<http://www.epa.gov/wastes/hazard/wastetypes/wasteid/char/hw-char.pdf>
- 9) RCRA Definition of Solid Waste Compendium Volume K: Commercial Chemical Products, August 2011 Version 2.2- <http://www.epa.gov/osw/hazard/dsw/compendium/k-ccp.pdf>
- 10) Fed Sys search access for locating federal register, code of federal regulations and federal statutes -
<http://www.gpo.gov/fdsys/>
- 11) SW-846 (TCLP, Paint Filter, and other test methods -
<http://www.epa.gov/wastes/hazard/testmethods/sw846/>
- 12) DEQ Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria -
http://www.michigan.gov/documents/deq/deq-erd-stats-s3tm_250015_7.pdf
- 13) DEQ Hazardous Waste and Liquid Industrial Waste Inspection Forms – Go to www.michigan.gov/deqwaste, select white tab on the left that says “Hazardous Waste and Liquid Industrial Waste,” select teal box in the center that says “Hazardous Waste and Liquid Industrial Waste Management,” scroll down to the bottom of the page and select “[Hazardous Waste Program Inspection Forms](#)”

- 14) EPA Guidance and summary of information regarding the RCRA Used Oil Rebuttable Presumption, March 2005, EPA Publication Number 905-R03-005 <http://www.epa.gov/epawaste/conservation/materials/usedoil/oil-rebut.pdf>
- 15) EPA Land Disposal Restrictions: Summary of Requirements, Revised August 2001, EPA 530-R-01-007 <http://www.epa.gov/epawaste/hazard/tsd/ldr/ldr-sum.pdf>
- 16) EPA Introduction to Land Disposal Restrictions Training Module, September 2005, EPA 530-K-05-013 <http://www.epa.gov/epawaste/inforesources/pubs/training/ldr05.pdf>

DEQ Waste On-line Resources

GENERAL

1. **WASTE DATA SYSTEM** (review notification, permit/license, and compliance monitoring or enforcement information)
Go to www.michigan.gov/deq, click on "Online Services" in the title bar, then "Waste Data System."
2. **DEQ LOCATIONS AND CONTACT INFORMATION**
Go to www.michigan.gov/deq, click on "Contacts" in the title bar, then "DEQ Locations."
3. **RECYCLING**
Go to www.michigan.gov/deqrecycling, search the Waste Data System (detailed above), and/or contact Christine Grossman for assistance at 517-284-6860 or grossmanc@michigan.gov.
4. **HOUSEHOLD HAZARDOUS WASTE**
Go to www.michigan.gov/deqwaste, click on the "Hazardous and Liquid Industrial Waste" on the blue tab on the left, then select "[Household Hazardous Waste \(HHW\)](#)."
5. **Michigan Environmental, Health, and Safety Guidebook** (book explaining DEQ, OSHA, and state building/plumbing codes implemented by LARA)
Go to www.michigan.gov/ehsguide.

HAZARDOUS WASTE AND LIQUID INDUSTRIAL WASTE

1. **GENERAL** ([laws/rules](#), [permit/license applications](#), [policy and operational memos](#), etc.)
Go to www.michigan.gov/deqwaste, click on "Hazardous and Liquid Industrial Waste," on the blue tab on the left, then "Hazardous Waste and Liquid Industrial Waste Management."
2. **WEBINARS** (recorded 1-hour webinars available for on-demand viewing covering waste characterization, accumulation and inspection/recordkeeping for hazardous waste and liquid industrial waste)
Go to www.michigan.gov/deqwaste and select [Introduction to Hazardous Waste Regulations Webinars](#).
3. **GENERATOR GUIDANCE (large, small, or conditionally exempt generators, liquid industrial waste generators)**
Go to www.michigan.gov/deqwaste, click on "Hazardous and Liquid Industrial Waste" on the blue tab on the left, "Hazardous and Liquid Industrial Waste Management" in the teal box in the center, and then select "[Generators](#)."
4. **WASTE TYPES (universal waste, used oil, electric lamps, electronics, etc.)**
Go to www.michigan.gov/deqwaste, click on "Hazardous and Liquid Industrial Waste" on the blue tab on the left, "Hazardous and Liquid Industrial Waste Management," and then select "[Disposal of Hazardous and Liquid Industrial Waste Types](#)."
5. **INSPECTION/SELF AUDIT FORMS**
Go to www.michigan.gov/deqwaste, click on "Hazardous Waste and Liquid Industrial Waste" on the blue tab on the left, and then select "Hazardous Waste and Liquid Industrial Waste Management." Scroll down the page, and select "[Hazardous Waste Program Inspection Forms](#)" in the lower right.
6. **SITE IDENTIFICATION NUMBER NOTIFICATION FORM AND INSTRUCTIONS**
Go to www.michigan.gov/deqwaste and click on "[Michigan Site Identification Form EQP 5150 \(Rev. 5/2010\) and Directions \(Rev. 7/2005\)](#)."
7. **MANIFESTS**
Go to www.michigan.gov/deqwaste and click on "[Uniform Manifest Information](#)."
8. **TRANSPORTERS (laws/rules, permit/registration applications, participating transporters, etc.)**
Go to www.michigan.gov/deqwaste and click on "[Hazardous Waste & Liquid Industrial Waste Transporters](#)."

SOLID WASTE

1. **GENERAL** ([laws/rules](#), [exemptions and guidance](#), [permit](#) and [license](#) applications, [policy and operational memos](#), [disposal facility map](#), etc.)
Go to www.michigan.gov/deqwaste and click on "Solid Waste."
2. **TRANSPORTERS**
Go to www.michigan.gov/deqwaste, click on "Solid Waste," and "Solid Waste Hauler Resources."

For more information, contact the ENVIRONMENTAL ASSISTANCE CENTER at 800-662-9278.



[close print view](#)

Hazardous Waste Program Inspection Forms

Agency: Environmental Quality

These documents are intended solely for the guidance of governmental personnel and are not intended and cannot be relied upon to create rights, substantive or procedural, enforceable by any party in litigation with the State of Michigan or the United States.

- [Hazardous Waste Transporter Inspection Form EQP 5159](#), (3/2011)
- [Conditionally Exempt Small Quantity Generator Inspection Form EQP 5160](#), (3/2011)
- [Small Quantity Generator Inspection Form EQP 5161](#), (abbreviated) (8/2013)
- [Small Quantity Generator Tank System Inspection Form EQP 5162](#), (abbreviated) (3/2011)
- [Generator Inspection Form EQP 5163](#), (8/2013)
- [Generator Tank Inspection Form EQP 5188](#), (abbreviated) (3/2011)
- [Permitted Treatment, Storage, Disposal Inspection Form EQP 5166](#), (3/2011)
- [Interim Status Treatment, Storage, Disposal Inspection Form EQP 5171](#), (3/2011)
- [TSDF Generator Appendix Inspection Form EQP 5176](#), (3/2011)
- [Used Oil Inspection Form - Burn For Energy Recovery EQP 5179](#), (3/2011)
- [Used Oil Inspection Form - Collection Centers And Aggregation Point EQP 5189](#), (3/2011)
- [Used Oil Inspection Form - Fuel Marketer EQP 5181](#), (3/2011)
- [Used Oil Inspection Form - Generators EQP 5182](#) (3/2011)
- [Used Oil Inspection Form - Oil Processors And Re-Refiners EQP 5183](#), (3/2011)
- [Used Oil Inspection Form - Transporters And Transfer Facilities EQP 5184](#), (3/2011)
- [Universal Waste Large Quantity Handler \(LQH\) Inspection EQP 5185](#), (3/2011)
- [Universal Waste Small Quantity Handler \(SQH\) Inspection EQP 5186](#), (3/2011)
- [Hazardous Waste Inspection EQP 5187](#), (3/2011)
- [Liquid Industrial Waste Inspection Form EQP 5191](#), (3/2011)
- [TSDF Tank Inspection Form EQP 5192](#), (3/2011)



