CA

67450.11 List of Influent Waste Streams and Treatment Process(ES) for Influent Waste Streams Eligible for Treatment Pursuant to Permit by Rule

(a)

The following hazardous wastes are eligible for treatment by TTUs operating pursuant to section 67450.2(a) or by FTUs operating pursuant to section 67450.2(b) provided treatment of the waste is not regulated under the federal Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C., section 6901 et seq.), the waste is not reactive pursuant to section 66261.23 or extremely hazardous pursuant to sections 66261.107 or 66261.110, the waste to be treated is a hazardous waste only because it contains one or more constituents listed in this section, the only treatment technologies used are the ones listed in this section for the waste stream(s) eligible to be treated, the treatment is conducted only for the purpose of treating eligible constituent(s), all treatment is conducted in tanks or containers, and all discharges to air comply with applicable federal, state and local air pollution control statutes and regulations: (1) Aqueous wastes containing hexavalent chromium may be treated by the following process: (A) Reduction of hexavalent chromium to trivalent chromium with sodium bisulfite, sodium metabisulfite, sodium thiosulfate, ferrous sulfate, ferrous sulfide or sulfur dioxide, provided both pH and addition of the reducing agent are automatically controlled. (2) Aqueous wastes containing

metals listed in section 66261.24(a)(2) and/or fluoride salts may be treated by the following technologies: (A) pH adjustment or neutralization. (B) Precipitation or crystallization. (C) Phase separation by filtration, centrifugation or gravity settling. (D) Ion exchange. (E) Reverse osmosis. (F) Metallic replacement. (G) Plating the metal onto an electrode. (H) Electrodialysis. (I) Electrowinning or electrolytic recovery. (J) Chemical stabilization using silicates and/or cementitious types of reactions. (K) Evaporation. (L) Adsorption. (3) Aqueous wastes with total organic carbon less than ten percent as measured by EPA Method 9060 described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, 3rd Edition, U.S. Environmental Protection Agency, 1986 and less than one percent total volatile organic compounds as measured by EPA Method 8240 described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, 3rd Edition, U.S. Environmental Protection Agency, 1986 may be treated by the following technologies: (A) Phase separation by filtration, centrifugation or gravity settling, but excluding super critical fluid extraction. (B) Adsorption. (C) Distillation. (D) Biological processes conducted in tanks or containers and utilizing naturally occurring microorganisms. (E) Photodegradation using ultraviolet light, with or without the addition of hydrogen peroxide or ozone, provided the treatment is conducted in an enclosed system: (F) Air stripping or steam stripping. (4) Sludges, dusts, solid metal objects and metal workings which contain or are contaminated with metals listed in section 66261.24(a)(2) and/or fluoride salts, may be treated by the following technologies: (A) Chemical stabilization using silicates and/or cementitious types of reactions. (B) Physical processes which change only the physical properties of the waste such as grinding, shredding, crushing, or compacting. (C) Drying to remove water. (D) Separation based on differences in physical properties such as size,

magnetism or density. (5) Alum, gypsum, lime, sulfur or phosphate sludges may be treated by the following technologies: (A) Chemical stabilization using silicates and/or cementitious types of reactions. (B) Drying to remove water. (C) Phase separation by filtration, centrifugation or gravity settling. (6) Wastes listed in section 66261.120 which meet the criteria and requirements for special waste classification in section 66261.122 may be treated by the following technologies: (A) Chemical stabilization using silicates and/or cementitious types of reactions. (B) Drying to remove water. (C) Phase separation by filtration, centrifugation or gravity settling. (D) Screening to separate components based on size. (E) Separation based on differences in physical properties such as size, magnetism or density. (7) Wastes, except asbestos, which have been classified by the Department as special wastes pursuant to section 66261.124, may be treated by the following technologies: (A) Chemical stabilization using silicates and/or cementitious types of reactions. (B) Drying to remove water. (C) Phase separation by filtration, centrifugation or gravity settling. (D) Magnetic separation. (8) Inorganic acid or alkaline wastes may be treated by the following technology: (A) pH adjustment or neutralization. (9) Soils contaminated with metals listed in section 66261.24(a)(2) may be treated by the following technologies: (A) Chemical stabilization using silicates and/or cementitious types of reactions. (B) Screening to separate components based on size. (C) Magnetic separation. (10) Used oil as defined in Health and Safety Code section 25250.1, unrefined oil waste, mixed oil, oil mixed with water and oil/water separation sludges may be treated by the following technologies: (A) Phase separation by filtration, centrifugation or gravity settling, but excluding super critical fluid extraction. (B) Distillation. (C) Neutralization. (D) Separation based on differences in physical properties such as size, magnetism or density. (E) Reverse osmosis. (F) Biological

processes conducted in tanks or containers and utilizing naturally occurring microorganisms. (11) Containers of 110 gallons or less capacity which are not constructed of wood, paper, cardboard, fabric or any other similar absorptive material, which have been emptied as specified in Title 40 Code of Federal Regulations section 261.7 revised July 1, 1990) or inner liners removed from empty containers that once held hazardous waste or hazardous material and which are not excluded from regulation pursuant to this chapter may be treated by the following technologies provided the treated containers and rinseate are managed in compliance with the applicable requirements of this chapter: (A) Rinsing with a suitable liquid capable of dissolving or removing the hazardous constituents which the container held. (B) Physical processes such as crushing, shredding, grinding or puncturing, that change only the physical properties of the container or inner liner, provided the container or inner liner is first rinsed as provided in subsection (a)(11)(A) of this section and the rinseate is removed from the container or inner liner. (12) Multi-component resins may be treated by the following process: (A) Mixing the resin components in accordance with the manufacturer's instructions. (13) A waste stream technology combination certified by the Department pursuant to Section 25200.1.5 of the Health and Safety Code as appropriate for authorization under Permit by Rule.

(1)

Aqueous wastes containing hexavalent chromium may be treated by the following process: (A) Reduction of hexavalent chromium to trivalent chromium with sodium bisulfite, sodium metabisulfite, sodium thiosulfate, ferrous sulfate, ferrous sulfide or sulfur dioxide, provided both pH and addition of the reducing agent are automatically controlled.

(A)

Reduction of hexavalent chromium to trivalent chromium with sodium bisulfite, sodium metabisulfite, sodium thiosulfate, ferrous sulfate, ferrous sulfide or sulfur dioxide, provided both pH and addition of the reducing agent are automatically controlled.

(2)

Aqueous wastes containing metals listed in section 66261.24(a)(2) and/or fluoride salts may be treated by the following technologies: (A) pH adjustment or neutralization. (B) Precipitation or crystallization. (C) Phase separation by filtration, centrifugation or gravity settling. (D) Ion exchange. (E) Reverse osmosis. (F) Metallic replacement. (G) Plating the metal onto an electrode. (H) Electrodialysis. (I) Electrowinning or electrolytic recovery. (J) Chemical stabilization using silicates and/or cementitious types of reactions. (K) Evaporation. (L) Adsorption.

(A)

pH adjustment or neutralization.

(B)

Precipitation or crystallization.

(C)

Phase separation by filtration, centrifugation or gravity settling.

(D)

Ion exchange.

(E)

Reverse osmosis.

(F)

Metallic replacement.

(G)

Plating the metal onto an electrode.

(H)

Electrodialysis.

(I)

Electrowinning or electrolytic recovery.

(J)

Chemical stabilization using silicates and/or cementitious types of reactions.

(K)

Evaporation.

(L)

Adsorption.

(3)

Aqueous wastes with total organic carbon less than ten percent as measured by EPA Method 9060 described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, 3rd Edition, U.S. Environmental Protection Agency, 1986 and less than one percent total volatile organic compounds as measured by EPA Method 8240 described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, 3rd Edition, U.S. Environmental Protection Agency, 1986 may be treated by the following technologies: (A) Phase separation by filtration, centrifugation or gravity settling, but excluding super critical fluid extraction. (B) Adsorption. (C) Distillation. (D) Biological processes conducted in tanks or containers and utilizing naturally occurring microorganisms. (E) Photodegradation using ultraviolet light, with or without the addition of hydrogen peroxide or ozone, provided the treatment is conducted in an enclosed system: (F) Air stripping or steam stripping.

(A)

Phase separation by filtration, centrifugation or gravity settling, but excluding super critical fluid extraction.

(B)

Adsorption.

(C)

Distillation.

(D)

Biological processes conducted in tanks or containers and utilizing naturally occurring microorganisms.

(E)

Photodegradation using ultraviolet light, with or without the addition of hydrogen peroxide or ozone, provided the treatment is conducted in an enclosed system:

(F)

Air stripping or steam stripping.

(4)

Sludges, dusts, solid metal objects and metal workings which contain or are contaminated with metals listed in section 66261.24(a)(2) and/or fluoride salts, may be treated by the following technologies: (A) Chemical stabilization using silicates and/or cementitious types of reactions. (B) Physical processes which change only the physical properties of the waste such as grinding, shredding, crushing, or compacting. (C) Drying to remove water. (D) Separation based on differences in physical properties such as size, magnetism or density.

(A)

Chemical stabilization using silicates and/or cementitious types of reactions.

(B)

Physical processes which change only the physical properties of the waste such as grinding, shredding, crushing, or compacting.

(C)

Drying to remove water.

(D)

Separation based on differences in physical properties such as size, magnetism or density.

(5)

Alum, gypsum, lime, sulfur or phosphate sludges may be treated by the following technologies: (A) Chemical stabilization using silicates and/or cementitious types of reactions. (B) Drying to remove water. (C) Phase separation by filtration, centrifugation or gravity settling.

(A)

Chemical stabilization using silicates and/or cementitious types of reactions.

(B)

Drying to remove water.

(C)

Phase separation by filtration, centrifugation or gravity settling.

(6)

Wastes listed in section 66261.120 which meet the criteria and requirements for special waste classification in section 66261.122 may be treated by the following technologies: (A) Chemical stabilization using silicates and/or cementitious types of reactions. (B) Drying to remove water. (C) Phase separation by filtration, centrifugation or gravity settling. (D) Screening to separate components based on size. (E) Separation based on differences in physical properties such as size, magnetism or density.

(A)

Chemical stabilization using silicates and/or cementitious types of reactions.

(B)

Drying to remove water.

(C)

Phase separation by filtration, centrifugation or gravity settling.

(D)

Screening to separate components based on size.

(E)

Separation based on differences in physical properties such as size, magnetism or density.

(7)

Wastes, except asbestos, which have been classified by the Department as special wastes pursuant to section 66261.124, may be treated by the following technologies: (A) Chemical stabilization using silicates and/or cementitious types of reactions. (B) Drying to remove water. (C) Phase separation by filtration, centrifugation or gravity settling. (D) Magnetic separation.

(A)

Chemical stabilization using silicates and/or cementitious types of reactions.

(B)

Drying to remove water.

(C)

Phase separation by filtration, centrifugation or gravity settling.

(D)

Magnetic separation.

(8)

Inorganic acid or alkaline wastes may be treated by the following technology: (A) pH adjustment or neutralization.

(A)

pH adjustment or neutralization.

(9)

Soils contaminated with metals listed in section 66261.24(a)(2) may be treated by the following technologies: (A) Chemical stabilization using silicates and/or cementitious

types of reactions. (B) Screening to separate components based on size. (C) Magnetic separation.

(A)

Chemical stabilization using silicates and/or cementitious types of reactions.

(B)

Screening to separate components based on size.

(C)

Magnetic separation.

(10)

Used oil as defined in Health and Safety Code section 25250.1, unrefined oil waste, mixed oil, oil mixed with water and oil/water separation sludges may be treated by the following technologies: (A) Phase separation by filtration, centrifugation or gravity settling, but excluding super critical fluid extraction. (B) Distillation. (C) Neutralization. (D) Separation based on differences in physical properties such as size, magnetism or density. (E) Reverse osmosis. (F) Biological processes conducted in tanks or containers and utilizing naturally occurring microorganisms.

(A)

Phase separation by filtration, centrifugation or gravity settling, but excluding super critical fluid extraction.

(B)

Distillation.

(C)

Neutralization.

(D)

Separation based on differences in physical properties such as size, magnetism or density.

(E)

Reverse osmosis.

(F)

Biological processes conducted in tanks or containers and utilizing naturally occurring microorganisms.

(11)

Containers of 110 gallons or less capacity which are not constructed of wood, paper, cardboard, fabric or any other similar absorptive material, which have been emptied as specified in Title 40 Code of Federal Regulations section 261.7 revised July 1, 1990) or inner liners removed from empty containers that once held hazardous waste or hazardous material and which are not excluded from regulation pursuant to this chapter may be treated by the following technologies provided the treated containers and rinseate are managed in compliance with the applicable requirements of this chapter: (A) Rinsing with a suitable liquid capable of dissolving or removing the hazardous constituents which the container held. (B) Physical processes such as crushing, shredding, grinding or puncturing, that change only the physical properties of the container or inner liner, provided the container or inner liner is first rinsed as provided in subsection (a)(11)(A) of this section and the rinseate is removed from the container or inner liner.

(A)

Rinsing with a suitable liquid capable of dissolving or removing the hazardous constituents which the container held.

(B)

Physical processes such as crushing, shredding, grinding or puncturing, that change only the physical properties of the container or inner liner, provided the container or inner liner is first rinsed as provided in subsection (a)(11)(A) of this section and the rinseate is removed from the container or inner liner.

(12)

Multi-component resins may be treated by the following process: (A) Mixing the resin components in accordance with the manufacturer's instructions.

(A)

Mixing the resin components in accordance with the manufacturer's instructions.

(13)

A waste stream technology combination certified by the Department pursuant to Section 25200.1.5 of the Health and Safety Code as appropriate for authorization under Permit by Rule.

(b)

For purposes of this section an aqueous waste is defined as a waste containing water, and less than or equal to one percent of suspended solids, as measured by Method 209C described in "Standard Methods for Examination of Water and Wastewater," 16th Edition, published jointly by the American Public Health Association, the American Water Works Association, and the American Pollution Control Federation, 1985.

(c)

Treatment residuals and effluents generated from the operation of a TTU or FTU shall be subject to the requirements of chapter 6.5 of division 20 of the Health and Safety Code and of this division, and shall be the responsibility of the generator of the waste influent treated by the TTU or FTU. Treatment residuals and effluents generated during closure of a TTU or FTU shall be subject to the requirements of chapter 6.5 of division 20 of the Health and Safety Code and of this division and shall be the responsibility of the TTU or FTU owner or operator.

(d)

(1) Notwithstanding subsection (a), cyanide-containing aqueous wastes listed in

subsection (d)(2) are eligible for treatment by TTUs operating pursuant to section 67450.2 subsection (a) or FTUs operating pursuant to section 67450.2 subsection (b) provided that: (A) treatment of the waste is not regulated under the federal Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C., section 6901 et seq.); (B) the waste is not extremely hazardous pursuant to sections 66261.107 or 66261.110 (except for waste identified in paragraphs 2(F) and (G) of subsection (d)); (C) notwithstanding any other basis for a determination that the waste to be treated is a hazardous waste, said waste is hazardous because it contains cyanide or a combination of cyanide and metals listed in section 66261.24 subsection (a)(2); (D) the treatment is conducted solely for the purpose of treating cyanide-containing waste in accordance with processes listed in subsection (d)(3), or (d)(7); or the purpose of treating spent process solutions by electrowinning pursuant to subsection (d)(6); (E) the owner or operator of the TTU and/or FTU is in compliance with the requirements of subsection (d)(4); (F) all treatment is conducted in tanks or containers; and (G) all discharges to air comply with applicable federal, state, and local air pollution control and worker safety statutes and regulations. (2) Cyanide-containing wastes eligible for treatment pursuant to this subsection are:(A) aqueous wastes generated by rinsing workpieces and fixtures holding workpieces that were processed in cyanide-containing solutions; (B) aqueous wastes generated by reverse osmosis or the regeneration of demineralizer (ion exchange) columns that were used for recycling of wastewaters at facilities that maintain zero discharge of wastewaters derived from the treatment of cyanide-containing aqueous waste; (C) aqueous wastes generated by rinsing containers, pumps, hoses, and other equipment used to transfer cyanide solutions onsite; (D) aqueous wastes generated by the following onsite recycling activities: 1. rinsing spent anode bags prior to onsite

reuse; or 2. rinsing empty containers prior to onsite reuse; (E) aqueous wastes generated by onsite laboratories conducting analyses and testing; (F) spent process solutions managed in accordance with the requirements of subsection (d)(6); and (G) spent process solutions managed in accordance with the requirements of subsection (d)(7). (3) The following processes may be used to treat the wastes described in subsections (d)(2)(A)-(E): (A) oxidation by addition of hypochlorite; (B) oxidation by addition of peroxide or ozone, with or without the use of ultraviolet light; (C) alkaline chlorination; (D) electrochemical oxidation; (E) ion exchange; or (F) reverse osmosis. (4) The owners or operators of all sites or facilities subject to subsection (d) shall implement the following to reduce waste generation, and minimize or eliminate releases to work areas and the environment: (A) use holding racks and/or drain boards between all process and rinse tanks to contain plating drag-out, rinse solution drag-out, and return drag-out solutions to process tanks; (B) use countercurrent rinsing to reduce water use and wastewater generation when multiple sequential rinse tanks are used; (C) at a minimum, every four (4) years, review the use of cyanide-containing process baths to determine if a non-cyanide alternative with equivalent results is available as part of: 1. the Source Reduction Evaluation Review and Plan pursuant to Health and Safety Code section 25244.19, 2. an Environmental Management System, or 3. an environmental performance evaluation plan; (D) provide initial and annual training to employees, who handle cyanide process solutions, cyanide-containing rinse waters, or manage cyanide-containing aqueous waste, on how to reduce wastes in the production area, including, but not limited to, procedures to: 1. reduce drag-out of plating baths, 2. minimize contaminants in process baths, 3. extend process bath life, 4. minimize chemical spills and splashes from process and rinse solutions handling practices, and 5. respond to

chemical spills to reduce waste and minimize releases from process and rinse solutions handling practices. (5) Non-aqueous cyanide-containing wastes may not be treated under the authority of subsection (d). (6) Spent process solutions containing recoverable amounts of metal may be treated by electrowinning in order to recover those metals provided that the owner or operator is in compliance with the requirements of subsection (d). Incidental treatment of cyanide contained in the spent process solution by the electrowinning process is also authorized by subsection (d)(6). For the purposes of subsection (d), electrowinning means the electrodeposition of metals from spent process solution. (7) Spent cyanide-containing process solutions may be treated by slow addition to the aqueous waste identified in paragraphs (2)(A) and (C) of subsection (d) for the purpose of reducing cyanide processing hazards, provided that the owner or operator is in compliance with the following requirements. Solutions resulting from the mixing authorized in subsection (d)(7) shall be further treated by processes listed in subsection (d)(3) in accordance with the other provisions of subsection (d). Owners or operators managing cyanide-containing spent process solutions shall ensure the following: (A) the concentration of cyanide in solutions treated in accordance with subsection (d)(3) shall not exceed 5000 milligrams per liter or parts per million (ppm) of total cyanide; (B) residual solids generated by any treatment process allowed in section 67450.11, such as filtercakes and sludges from clarifiers, are either:1. recycled by a facility that recovers metals from the residual solids, or are partially reclaimed for further processing by another metal recovery facility; or 2. determined not amenable for recycling due to technological or economic reasons in accordance with paragraph (7)(C), and; (C) a justification statement is prepared when any residual solids are not recycled in accordance with subparagraph (7)(B)1. in a calendar year. Owners or operators

shall complete this justification statement by January 30, for any shipment of residual solids not recycled in the previous calendar year. The justification statement shall include all the following: 1. chemical composition of the residual solids, including but not limited to, the concentration and type of metals present, cyanide concentration, and water content; and the total weight or volume of the residual solid not recycled during the previous calendar year. 2. chemical composition of the spent process solutions, including but not limited to, the concentration and type of metals present, and cyanide concentration; and the total weight or volume of the spent process solution treated during the previous calendar year. 3. current year cost estimates expressed in dollars per pound or dollars per gallon for the following hazardous waste management options, including transportation: a. offsite disposal of the residual solids including treatment; b. offsite recycling of the residual solids; c. offsite treatment of process solutions; and d. onsite treatment of process solutions. 4. a basis for the decision to not recycle the residual solids as either: a. technological and provide the chemical, physical, hazardous characteristics, or other properties that affect recycling the residual solids; or b. economic and provide a comparison of the hazardous waste management costs including, but be not limited to, all costs listed in subparagraph (7)(C)1. and (7)(C)2. for both managing the residual solids and managing the spent process solutions; (D) the justification statement may include any other information that influenced or formed the basis of the generator's decision to not recycle the residual solids. This supplemental information may include the availability of suitable processing technology and facilities; or the marketability of the residual solid or its reclaimed components; and (E) the following records are maintained at the facility for a minimum of three years from the last date of any activity authorized pursuant to this paragraph of

this subsection and made available to authorized representatives of the Department, the CUPA, or the U.S. EPA upon request:1. written approval from the agency operating the POTW receiving the facility's discharges required by section 67450.3 subsections (a)(7)(A) or (c)(5)((A); 2. written method documented in the waste analysis plan required by section 67450.3 subsections (a)(10)(A) and (c)(8)(A) for ensuring that the concentration of total cyanide does not exceed 5000 milligrams per liter in the aqueous waste resulting from the mixing authorized in subsection (d)(7); and 3. documentation that the residual solids generated by the treatment pursuant to paragraph (7)(B) of this subsection have been either: a. sent offsite for metals recovery or reclamation; or b. determined to be not amenable for recycling in accordance with paragraph (7)(C).

(1)

Notwithstanding subsection (a), cyanide-containing aqueous wastes listed in subsection (d)(2) are eligible for treatment by TTUs operating pursuant to section 67450.2 subsection (a) or FTUs operating pursuant to section 67450.2 subsection (b) provided that: (A) treatment of the waste is not regulated under the federal Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C., section 6901 et seq.); (B) the waste is not extremely hazardous pursuant to sections 66261.107 or 66261.110 (except for waste identified in paragraphs 2(F) and (G) of subsection (d)); (C) notwithstanding any other basis for a determination that the waste to be treated is a hazardous waste, said waste is hazardous because it contains cyanide or a combination of cyanide and metals listed in section 66261.24 subsection (a)(2); (D) the treatment is conducted solely for the purpose of treating cyanide-containing waste in accordance with processes listed in subsection (d)(3), or (d)(7); or the purpose of treating spent process solutions by electrowinning pursuant to subsection (d)(6); (E) the owner or operator of the TTU and/or FTU is in compliance with the requirements of

subsection (d)(4); (F) all treatment is conducted in tanks or containers; and (G) all discharges to air comply with applicable federal, state, and local air pollution control and worker safety statutes and regulations.

(A)

treatment of the waste is not regulated under the federal Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C., section 6901 et seq.);

(B)

the waste is not extremely hazardous pursuant to sections 66261.107 or 66261.110 (except for waste identified in paragraphs 2(F) and (G) of subsection (d));

(C)

notwithstanding any other basis for a determination that the waste to be treated is a hazardous waste, said waste is hazardous because it contains cyanide or a combination of cyanide and metals listed in section 66261.24 subsection (a)(2);

(D)

the treatment is conducted solely for the purpose of treating cyanide-containing waste in accordance with processes listed in subsection (d)(3), or (d)(7); or the purpose of treating spent process solutions by electrowinning pursuant to subsection (d)(6);

(E)

the owner or operator of the TTU and/or FTU is in compliance with the requirements of subsection (d)(4);

(F)

all treatment is conducted in tanks or containers; and

(G)

all discharges to air comply with applicable federal, state, and local air pollution control and worker safety statutes and regulations.

(2)

Cyanide-containing wastes eligible for treatment pursuant to this subsection are:(A) aqueous wastes generated by rinsing workpieces and fixtures holding workpieces that were processed in cyanide-containing solutions; (B) aqueous wastes generated by reverse osmosis or the regeneration of demineralizer (ion exchange) columns that were used for recycling of wastewaters at facilities that maintain zero discharge of wastewaters derived from the treatment of cyanide-containing aqueous waste; (C) aqueous wastes generated by rinsing containers, pumps, hoses, and other equipment used to transfer cyanide solutions onsite; (D) aqueous wastes generated by the following onsite recycling activities: 1. rinsing spent anode bags prior to onsite reuse; or 2. rinsing empty containers prior to onsite reuse; (E) aqueous wastes generated by onsite laboratories conducting analyses and testing; (F) spent process solutions managed in accordance with the requirements of subsection (d)(6); and (G) spent process solutions managed in accordance with the requirements of subsection (d)(7).

(A)

aqueous wastes generated by rinsing workpieces and fixtures holding workpieces that were processed in cyanide-containing solutions;

(B)

aqueous wastes generated by reverse osmosis or the regeneration of demineralizer (ion exchange) columns that were used for recycling of wastewaters at facilities that maintain zero discharge of wastewaters derived from the treatment of cyanide-containing aqueous waste;

(C)

aqueous wastes generated by rinsing containers, pumps, hoses, and other equipment used to transfer cyanide solutions onsite;

(D)

aqueous wastes generated by the following onsite recycling activities: 1. rinsing spent anode

bags prior to onsite reuse; or 2. rinsing empty containers prior to onsite reuse;

1.

rinsing spent anode bags prior to onsite reuse; or

2.

rinsing empty containers prior to onsite reuse;

(E)

aqueous wastes generated by onsite laboratories conducting analyses and testing;

(F)

spent process solutions managed in accordance with the requirements of subsection (d)(6); and

(G)

spent process solutions managed in accordance with the requirements of subsection (d)(7).

(3)

The following processes may be used to treat the wastes described in subsections (d)(2)(A)-(E): (A) oxidation by addition of hypochlorite; (B) oxidation by addition of peroxide or ozone, with or without the use of ultraviolet light; (C) alkaline chlorination; (D) electrochemical oxidation; (E) ion exchange; or (F) reverse osmosis.

(A)

oxidation by addition of hypochlorite;

(B)

oxidation by addition of peroxide or ozone, with or without the use of ultraviolet light;

(C)

alkaline chlorination;

(D)

electrochemical oxidation;

(E)

ion exchange; or

(F)

reverse osmosis.

(4)

The owners or operators of all sites or facilities subject to subsection (d) shall implement the following to reduce waste generation, and minimize or eliminate releases to work areas and the environment: (A) use holding racks and/or drain boards between all process and rinse tanks to contain plating drag-out, rinse solution drag-out, and return drag-out solutions to process tanks; (B) use countercurrent rinsing to reduce water use and wastewater generation when multiple sequential rinse tanks are used; (C) at a minimum, every four (4) years, review the use of cyanide-containing process baths to determine if a non-cyanide alternative with equivalent results is available as part of: 1. the Source Reduction Evaluation Review and Plan pursuant to Health and Safety Code section 25244.19, 2. an Environmental Management System, or 3. an environmental performance evaluation plan; (D) provide initial and annual training to employees, who handle cyanide process solutions, cyanide-containing rinse waters, or manage cyanide-containing aqueous waste, on how to reduce wastes in the production area, including, but not limited to, procedures to: 1. reduce drag-out of plating baths, 2. minimize contaminants in process baths, 3. extend process bath life, 4. minimize chemical spills and splashes from process and rinse solutions handling practices, and 5. respond to chemical spills to reduce waste and minimize releases from process and rinse solutions handling practices.

(A)

use holding racks and/or drain boards between all process and rinse tanks to contain plating drag-out, rinse solution drag-out, and return drag-out solutions to process tanks;

(B)

use countercurrent rinsing to reduce water use and wastewater generation when multiple sequential rinse tanks are used;

(C)

at a minimum, every four (4) years, review the use of cyanide-containing process baths to determine if a non-cyanide alternative with equivalent results is available as part of: 1. the Source Reduction Evaluation Review and Plan pursuant to Health and Safety Code section 25244.19, 2. an Environmental Management System, or 3. an environmental performance evaluation plan;

1.

the Source Reduction Evaluation Review and Plan pursuant to Health and Safety Code section 25244.19,

2.

an Environmental Management System, or

3.

an environmental performance evaluation plan;

(D)

provide initial and annual training to employees, who handle cyanide process solutions, cyanide-containing rinse waters, or manage cyanide-containing aqueous waste, on how to reduce wastes in the production area, including, but not limited to, procedures to: 1. reduce drag-out of plating baths, 2. minimize contaminants in process baths, 3. extend process bath life, 4. minimize chemical spills and splashes from process and rinse solutions handling practices, and 5. respond to chemical spills to reduce waste and minimize releases from process and rinse solutions handling practices.

1.

reduce drag-out of plating baths,

2.

minimize contaminants in process baths,

3.

extend process bath life,

4.

minimize chemical spills and splashes from process and rinse solutions handling practices, and

5.

respond to chemical spills to reduce waste and minimize releases from process and rinse solutions handling practices.

(5)

Non-aqueous cyanide-containing wastes may not be treated under the authority of subsection (d).

(6)

Spent process solutions containing recoverable amounts of metal may be treated by electrowinning in order to recover those metals provided that the owner or operator is in compliance with the requirements of subsection (d). Incidental treatment of cyanide contained in the spent process solution by the electrowinning process is also authorized by subsection (d)(6). For the purposes of subsection (d), electrowinning means the electrodeposition of metals from spent process solution.

(7)

Spent cyanide-containing process solutions may be treated by slow addition to the aqueous waste identified in paragraphs (2)(A) and (C) of subsection (d) for the purpose of reducing cyanide processing hazards, provided that the owner or operator is in compliance with the following requirements. Solutions resulting from the mixing authorized in subsection (d)(7) shall be further treated by processes listed in subsection (d)(3) in accordance with the other provisions of subsection (d). Owners or operators managing cyanide-containing spent process solutions shall ensure the

following: (A) the concentration of cyanide in solutions treated in accordance with subsection (d)(3) shall not exceed 5000 milligrams per liter or parts per million (ppm) of total cyanide; (B) residual solids generated by any treatment process allowed in section 67450.11, such as filtercakes and sludges from clarifiers, are either:1. recycled by a facility that recovers metals from the residual solids, or are partially reclaimed for further processing by another metal recovery facility; or 2. determined not amenable for recycling due to technological or economic reasons in accordance with paragraph (7)(C), and; (C) a justification statement is prepared when any residual solids are not recycled in accordance with subparagraph (7)(B)1. in a calendar year. Owners or operators shall complete this justification statement by January 30, for any shipment of residual solids not recycled in the previous calendar year. The justification statement shall include all the following: 1. chemical composition of the residual solids, including but not limited to, the concentration and type of metals present, cyanide concentration, and water content; and the total weight or volume of the residual solid not recycled during the previous calendar year. 2. chemical composition of the spent process solutions, including but not limited to, the concentration and type of metals present, and cyanide concentration; and the total weight or volume of the spent process solution treated during the previous calendar year. 3. current year cost estimates expressed in dollars per pound or dollars per gallon for the following hazardous waste management options, including transportation: a. offsite disposal of the residual solids including treatment; b. offsite recycling of the residual solids; c. offsite treatment of process solutions; and d. onsite treatment of process solutions. 4. a basis for the decision to not recycle the residual solids as either: a. technological and provide the chemical, physical, hazardous characteristics, or other properties that affect recycling the residual solids; or b. economic and provide a comparison of the hazardous waste management costs including, but be not limited to, all costs listed in

subparagraph (7)(C)1. and (7)(C)2. for both managing the residual solids and managing the spent process solutions; (D) the justification statement may include any other information that influenced or formed the basis of the generator's decision to not recycle the residual solids. This supplemental information may include the availability of suitable processing technology and facilities; or the marketability of the residual solid or its reclaimed components; and (E) the following records are maintained at the facility for a minimum of three years from the last date of any activity authorized pursuant to this paragraph of this subsection and made available to authorized representatives of the Department, the CUPA, or the U.S. EPA upon request:1. written approval from the agency operating the POTW receiving the facility's discharges required by section 67450.3 subsections (a)(7)(A) or (c)(5)((A); 2. written method documented in the waste analysis plan required by section 67450.3 subsections (a)(10)(A) and (c)(8)(A) for ensuring that the concentration of total cyanide does not exceed 5000 milligrams per liter in the aqueous waste resulting from the mixing authorized in subsection (d)(7); and 3. documentation that the residual solids generated by the treatment pursuant to paragraph (7)(B) of this subsection have been either: a. sent offsite for metals recovery or reclamation; or b. determined to be not amenable for recycling in accordance with paragraph (7)(C).

(A)

the concentration of cyanide in solutions treated in accordance with subsection (d)(3) shall not exceed 5000 milligrams per liter or parts per million (ppm) of total cyanide;

(B)

residual solids generated by any treatment process allowed in section 67450.11, such as filtercakes and sludges from clarifiers, are either:1. recycled by a facility that recovers metals from the residual solids, or are partially reclaimed for further processing by another metal recovery facility; or 2. determined not amenable for recycling due to technological or

economic reasons in accordance with paragraph (7)(C), and;

1.

recycled by a facility that recovers metals from the residual solids, or are partially reclaimed for further processing by another metal recovery facility; or

2.

determined not amenable for recycling due to technological or economic reasons in accordance with paragraph (7)(C), and;

(C)

a justification statement is prepared when any residual solids are not recycled in accordance with subparagraph (7)(B)1. in a calendar year. Owners or operators shall complete this justification statement by January 30, for any shipment of residual solids not recycled in the previous calendar year. The justification statement shall include all the following: 1. chemical composition of the residual solids, including but not limited to, the concentration and type of metals present, cyanide concentration, and water content; and the total weight or volume of the residual solid not recycled during the previous calendar year. 2. chemical composition of the spent process solutions, including but not limited to, the concentration and type of metals present, and cyanide concentration; and the total weight or volume of the spent process solution treated during the previous calendar year. 3. current year cost estimates expressed in dollars per pound or dollars per gallon for the following hazardous waste management options, including transportation: a. offsite disposal of the residual solids including treatment; b. offsite recycling of the residual solids; c. offsite treatment of process solutions; and d. onsite treatment of process solutions. 4. a basis for the decision to not recycle the residual solids as either: a. technological and provide the chemical, physical, hazardous characteristics, or other properties that affect recycling the residual solids; or b. economic and provide a comparison of the hazardous waste management costs including, but be not limited to, all costs listed in subparagraph (7)(C)1.

and (7)(C)2. for both managing the residual solids and managing the spent process solutions;

1.

chemical composition of the residual solids, including but not limited to, the concentration and type of metals present, cyanide concentration, and water content; and the total weight or volume of the residual solid not recycled during the previous calendar year.

2.

chemical composition of the spent process solutions, including but not limited to, the concentration and type of metals present, and cyanide concentration; and the total weight or volume of the spent process solution treated during the previous calendar year.

3.

current year cost estimates expressed in dollars per pound or dollars per gallon for the following hazardous waste management options, including transportation: a. offsite disposal of the residual solids including treatment; b. offsite recycling of the residual solids; c. offsite treatment of process solutions; and d. onsite treatment of process solutions.

a.

offsite disposal of the residual solids including treatment;

b.

offsite recycling of the residual solids;

c.

offsite treatment of process solutions; and

d.

onsite treatment of process solutions.

4.

a basis for the decision to not recycle the residual solids as either: a. technological and provide the chemical, physical, hazardous characteristics, or other properties that affect recycling the residual

solids; or b. economic and provide a comparison of the hazardous waste management costs including, but be not limited to, all costs listed in subparagraph (7)(C)1. and (7)(C)2. for both managing the residual solids and managing the spent process solutions;

a.

technological and provide the chemical, physical, hazardous characteristics, or other properties that affect recycling the residual solids; or

b.

economic and provide a comparison of the hazardous waste management costs including, but be not limited to, all costs listed in subparagraph (7)(C)1. and (7)(C)2. for both managing the residual solids and managing the spent process solutions;

(D)

the justification statement may include any other information that influenced or formed the basis of the generator's decision to not recycle the residual solids. This supplemental information may include the availability of suitable processing technology and facilities; or the marketability of the residual solid or its reclaimed components; and

(E)

the following records are maintained at the facility for a minimum of three years from the last date of any activity authorized pursuant to this paragraph of this subsection and made available to authorized representatives of the Department, the CUPA, or the U.S. EPA upon request:1. written approval from the agency operating the POTW receiving the facility's discharges required by section 67450.3 subsections (a)(7)(A) or (c)(5)((A); 2. written method documented in the waste analysis plan required by section 67450.3 subsections (a)(10)(A) and (c)(8)(A) for ensuring that the concentration of total cyanide does not exceed 5000 milligrams per liter in the aqueous waste resulting from the mixing authorized in subsection (d)(7); and 3. documentation that the residual solids generated by the treatment pursuant to paragraph (7)(B) of this subsection have been either: a. sent offsite for metals recovery or

reclamation; or b. determined to be not amenable for recycling in accordance with paragraph (7)(C).

1.

written approval from the agency operating the POTW receiving the facility's discharges required by section 67450.3 subsections (a)(7)(A) or (c)(5)((A);

2.

written method documented in the waste analysis plan required by section 67450.3 subsections (a)(10)(A) and (c)(8)(A) for ensuring that the concentration of total cyanide does not exceed 5000 milligrams per liter in the aqueous waste resulting from the mixing authorized in subsection (d)(7); and

3.

documentation that the residual solids generated by the treatment pursuant to paragraph (7)(B) of this subsection have been either: a. sent offsite for metals recovery or reclamation; or b. determined to be not amenable for recycling in accordance with paragraph (7)(C).

a.

sent offsite for metals recovery or reclamation; or

b.

determined to be not amenable for recycling in accordance with paragraph (7)(C).