DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Solid and Hazardous Waste Commission/Hazardous Materials and Waste Management Division

6 CCR 1007-3

HAZARDOUS WASTE

Proposed Acme Manufacturing F006 Delisting

1) Appendix IX of Part 261 is amended by adding Delisting #10 to read as follows:

PART 261, APPENDIX IX – WASTES EXCLUDED UNDER §§ 260.20 AND 260.22

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DELISTING #: 10

FACILITY: Acme Manufacturing

ADDRESS: 4650 S. Leydon St., Unit A, Denver, Colorado 80216

WASTE: Wastewater treatment sludge from the on-site treatment of wastewater generated from zinc and chromate plating on cold rolled steel. EPA hazardous waste code F006 generated after the effective date of this delisting.

CONDITIONS: This delisting is valid only for the waste stream specified above and referenced in the delisting petition submitted on October 18, 2018 and under the following conditions:

a. Changes to Current Operations

1. Acme Manufacturing must notify the Hazardous Materials and Waste Management Division (the Division) at least 30-days prior to implementing any major change to the electroplating processes at the Facility. A major change is any change including alteration of the current wastewater treatment process or incorporating different

chemicals or reagents into the process such that the composition of the wastewater treatment sludge is altered.

2. Acme Manufacturing must notify the Division within 15-days after implementing any change to the wastewater treatment or electroplating processes that causes a significant change in the type or concentration of any hazardous constituent in the waste or causes the waste to exhibit a hazardous waste characteristic. A significant change is defined as an increase in the total waste concentration for any constituent identified below:

Constituent	Average Concentration (ppm)	2xs the Standard Deviation	Concentration Requiring Notification to the Division (Two Standard Deviations above the Average Concentration)
Arsenic	Non-detect	Non-detect	Detection
Barium	13.2	1.4	14.6
Cadmium	Non-detect	Non-detect	Detection
Chromium (Total)	1,740	193	1,933
Chromium VI	Non-detect	Non-detect	Detection
Copper	40.1	6.8	46.9
Cyanide (amenable)	Non-detect	Non-detect	Detection
Cyanide (free/reactive)	Non-detect	Non-detect	Detection
Lead	6.1	1.0	7.1
Mercury	Non-detect	Non-detect	Detection
Nickel	28.8	3.7	32.5
Selenium	Non-detect	Non-detect	Detection
Silver	Non-detect	Non-detect	Detection
Zinc	78,325	8,569	86,894

A significant change also includes the detection of any additional Part 264, Appendix IX hazardous constituents that are not identified in the above table.

3. The Division reserves the right to re-evaluate and, if necessary, remove this approval or modify these conditions in the event that a significant change, as defined above, is reported by Acme Manufacturing. In such case, the Division may remove this delisting or impose temporary requirements on the delisted waste until such time as an appropriate amendment to this delisting can be considered by the Solid and Hazardous Waste Commission.

b. Sampling Requirements

Acme Manufacturing shall conduct annual verification sampling of the delisted waste in January of each year to monitor for any significant change in the type or concentration of any hazardous constituents in the delisted waste. Annual verification sampling shall be submitted to the Division within sixty (60) days of the sampling event for review against initial criteria and sampling methodology.

c. Storage Requirements

1. The delisted waste generated by Acme Manufacturing may not be accumulated on-site for a period in excess of one year.

2. The volume of delisted waste accumulated on-site may not exceed 20 cubic yards at any given time.

3. The delisted waste must be stored in a container that is capable of being closed. The container must be marked or labeled to identify the contents as "delisted waste" and with an accumulation start date. The container must be kept closed except for when waste is being added to or removed from the container.

d. Recordkeeping Requirements

1. Acme Manufacturing shall maintain records of the disposal or recycling of all delisted waste that documents that such activities are in accordance with the delisting petition.

2. Acme Manufacturing shall maintain all records required by paragraph d.i above for a period of at least three years.

e. Disposal Requirements

The delisted waste shall be disposed in a landfill meeting the requirements of the Colorado Solid Waste Regulations (6 CCR 1007-2) or recycled at an appropriate metals reclamation facility.

2) Section 8.93 {Statement of Basis and Purpose for the Rulemaking Hearing of February 19, 2019} is added to Part 8 of the Regulations to read as follows:

Statement of Basis and Purpose
Rulemaking Hearing of February 19, 2019

8.93 **Basis and Purpose**

This amendment to 6 CCR 1007-3, Part 261, Appendix IX is made pursuant to the authority granted to the Solid and Hazardous Waste Commission in § 25-15-302(2), C.R.S.

Amendment of Part 261, Appendix IX to Conditionally Delist F006 Hazardous Waste Generated by Acme Manufacturing located at 4650 S. Leydon St., Unit A in Denver, Colorado 80216.

Appendix IX of Part 261 is being amended to conditionally delist F006 hazardous waste generated at Acme Manufacturing in Denver, Colorado. This delisting will allow Acme Manufacturing to dispose of this waste at a solid waste landfill meeting the requirements of the Colorado Solid Waste Regulations (6 CCR 1007-2) or a metals recycling facility provided it complies with the conditions of the delisting. The Solid and Hazardous Waste Commission (the "Commission") is requiring an annual verification sampling of the delisted waste and the results of that verification sampling must be submitted to the Division within sixty (60) days of the sampling event for review against initial delisting criteria and sampling methodology.

Acme Manufacturing operates a manufacturing facility in Denver, Colorado for the production of steel threaded rods for use in the construction industry. Manufacturing processes at the facility include the zinc plating of steel parts, followed by either a clear or yellow chromate seal. Rinse water from these metal finishing operations is treated on-site in a wastewater treatment unit to remove heavy metals prior to discharging the treated wastewater to the publicly owned treatment works (POTW). The process of treating the wastewater generates wastewater treatment sludge. Pursuant to the listing description at § 261.31, wastewater treatment sludge generated from electroplating operations is classified as F006 hazardous waste.

The basis for the F006 hazardous waste listing is described in Appendix VII of Part 261 of the hazardous waste regulations. Each listing is based on hazardous constituents that are typically contained in the waste described by the listing. The hazardous constituents that formed the basis for the F006 listing include cadmium, hexavalent chromium (Chromium VI), nickel and complexed cyanide.

Samples of the wastewater treatment sludge generated at Acme Manufacturing were collected and submitted for analysis prior to submittal of the delisting petition. Four discrete samples of the wastewater treatment sludge were collected in accordance with a sampling and analysis plan that was reviewed and approved by the Hazardous Materials and Waste Management

Division at the Colorado Department of Public Health and Environment. The waste samples were analyzed using the toxicity characteristic leaching procedure (TCLP) to determine the leachability of contaminants from the waste as well as total concentrations.

TCLP results of the wastewater treatment sludge indicate that the sludge does not exhibit any of the hazardous waste characteristics. Sample results confirmed that the sludge does not contain any organic toxicity characteristic constituents above detection levels. In addition, the sludge does not exhibit the toxicity characteristic for the eight heavy metals. The waste also does not exhibit the hazardous waste characteristic of corrosivity, ignitability or reactivity.

Zinc concentrations in the waste sludge was also analyzed using TCLP. The results of the analysis indicate that zinc was present at an average concentration of 195 mg/L, with the State of Colorado Regulation 41 Domestic Water Supply – Drinking Water Standard for zinc being 5 mg/L. At such levels, zinc may leach out of the waste at concentrations that would not be protective of human health and the environment under unrestricted use standards.

The sample results indicated that the level of zinc that may leach from the waste is too high for unconditional delisting of the waste. However, further evaluation of the physical and chemical nature of the waste indicate that the waste does not pose an unacceptable risk to human health and the environment if subject to certain conditions regarding handling and disposal at a Subtitle D landfill. Zinc present in the sludge at 195 mg/L is less than 100 times the State of Colorado Regulation 41 Domestic Water Supply – Drinking Water Standard of 500 mg/L (5 mg/L X 100). Based on the zinc being present at levels less than 100 times the State of Colorado Regulation 41 Domestic Water Supply – Drinking Water Standard, using Table A2-1 of Appendix 2 of the Hazardous Materials and Waste Management Division's May 2002 Corrective Action Guidance, Option II: Restricted Use, the sludge may be disposed of as a solid waste in a Subtitle D landfill.

Total analysis of the wastewater treatment sludge also indicated that the petitioned sludge contains a hazardous constituent, nickel, which is a basis for listing the waste as a F006 hazardous waste. Based on the chemical analysis of the waste samples, the average total concentration for nickel is 28.8 parts per million (ppm). The total average concentration of nickel is below the EPA Residential and Industrial Soil Screening Level.

Hazardous constituents detected in the waste samples which were not a basis for listing the waste as a F006 hazardous waste include barium, chromium (Total), copper, lead and zinc. The average total concentration for these constituents is: 13.2 ppm barium, 1,740 chromium (Total), 40.1 ppm copper, 6.1 ppm lead, and 78,325 ppm zinc. The average total concentration for these constituents is below the EPA Residential Soil Screening Level with the exception of zinc, which is present greater than the EPA Residential Soil Screening Level of 23,000 ppm. Zinc present in the sludge at 78,325 ppm is less than 100 times the EPA Residential Soil Screening Level of 2,300,000 ppm (23,000 ppm X 100). Based on the zinc being present at levels less than

100 times the EPA Residential Soil Screening Level, using Table A2-1 of Appendix 2 of the Hazardous Materials and Waste Management Division's May 2002 Corrective Action Guidance, Option II: Restricted Use, the sludge may be disposed as a solid waste in Subtitle D landfill.

This delisting is being granted under conditions specifying disposal, record keeping, storage and sampling requirements for the delisted sludge. Conditional delisting of the waste also prohibits any major changes to the metal finishing operations or wastewater treatment process without prior notification, evaluation, and approval by the Division.

This delisting does not apply to waste that demonstrates a "significant change" as defined in Delisting #010 in Part 261, Appendix IX—Wastes Excluded Under § 260.20 and 260.22(d), or if any of the conditions specified in Part 261, Appendix IX for this delisting are not met. Should either of these occur, the waste is and must be managed as a hazardous waste. While the Commission is approving this conditional delisting for this specific waste at this specific site, the findings and criteria associated with the approval are unique. Other petitions for delisting, even if similar in material or use, will be reviewed by the Division on a case-by-case basis.