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TITLE: Evaluation of EP Toxicity on the Basis of Total Chromium

APPROVAL DATE: 12-03-84

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ORIGINATING OFFICE: Office of Solid Waste

☒ **FINAL**

☐ **DRAFT**

LEVEL OF DRAFT

- ☐ A — Signed by AA or DAA
- ☐ B — Signed by Office Director
- ☐ C — Review & Comment

REFERENCE (other documents):

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Key Words: EP Toxicity

Regulations:

Subject: Evaluation of EP Toxicity on the Basis of Total Chromium

Addressee: Miton A. Cerny, Plant Engineer, Iowa Industries, Inc.,
P. O. Box 768, Burlington, Iowa 52601

Originator: Barbara L. Bush, Environmental Protection Specialist, Waste
Identification Branch

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Summary:

EPA will continue to evaluate EP toxicity on the basis of total chromium, rather than on the basis of hexavalent chromium only. The decision is based on concerns raised over the potential for both trivalent and hexavalent chromium to leach from landfilled wastes and subsequently contaminate drinking water sources. A waste that fails the EP toxicity characteristic for total chromium is considered hazardous.



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

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OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

RE: WIBB80621

Mr. Miton A. Cerny
Plant Engineer
Iowa Industries, Inc.
P. O. Box 768
Burlington, Iowa 52601

Dear Mr. Cerny:

This letter is to confirm our telephone conversation of October 29, 1984, concerning the total chromium levels reported in the exclusion petition submitted by Iowa Industries for dewatered solids from electroplating and pickling operations, presently listed as EPA Hazardous Waste Nos. F006 and K062.

The data presented in the petition demonstrates that your waste typically and frequently exhibits the Extraction Procedure (EP) toxicity characteristic for total chromium. In particular, the data in your petition indicates that total chromium levels in the EP extract from your sludge are variable, ranging from 1.0 to 65 mg/l.^{1/} Since samples of Iowa Industries' waste fails the EP toxicity characteristic for total chromium, the waste is considered hazardous.

Until as recently as one month ago, it appeared likely that the Agency would change the basis of the EP toxicity characteristic from total chromium to hexavalent chromium.^{2/} However, recent decisions at EPA indicate that the proposal will not be made final; in fact, the Agency is making preparations to withdraw this proposal entirely. This decision is based on concerns raised over the potential for both trivalent and hexavalent chromium to leach from landfilled wastes and subsequently contaminate drinking water sources. Therefore, EPA will continue to evaluate EP toxicity on the basis of total chromium. Based on this decision, Iowa Industries' petition requesting a delisting of their electroplating and pickling waste would be denied.

^{1/} Total chromium levels reported were 1.0, 18, 65, 3.7, 30, and 50 mg/l.

^{2/} The original proposal was made October 30, 1980. (See 45 FR 72029.)

However, if Iowa Industries can modify its manufacturing process or treat the waste to decrease the total chromium in the EP extract, then the delisting petition can be reconsidered. The Agency is now using a Vertical and Horizontal Spread (VHS) model to predict worst case contamination levels in well water 500 feet from the contamination source. The VHS model assumes an in-line source-to-receptor dispersion and includes factors for the concentration of the constituent in the EP extract and the total amount of waste to be land disposed. According to the VHS model, in order that the concentration of chromium at the receptor well not exceed the National Interim Primary Drinking Water Standard of 0.05 ppm, the concentration of chromium in the EP extract cannot exceed 2.5 ppm, using the maximum volume of waste generated annually at your facility.^{3/} If Iowa Industries can modify its procedures to obtain this level or lower of total chromium in the EP extract, then the petition can be reconsidered.

Since you intend to attempt to lower the total chromium levels in the EP extract, we will keep your file open until we receive additional data from you. In the event that chromium cannot be lowered to the specified levels, we will be forced to deny your petition. However, before a denial notice is published in the Federal Register, you will be given the option to withdraw your petition.

I hope that this letter more fully explains the position of Iowa Industries' delisting petition with regard to the total chromium issue. Please keep me informed of your treatment progress and call me at (202) 382-4690 if you have any questions.

Sincerely,



Barbara L. Bush
Environmental Protection Specialist
Waste Identification Branch (WH-562)

^{3/} The Agency will be asking for public comment on the VHS model when it is published in the Federal Register with the next package of proposed exclusions sometime before January 1, 1985. Any comments received may lead to procedural changes within the model, but are also not expected to result in significant alterations.