9433.1990(05)

CYANIDE FURNACE CRUCIBLES TREATMENT

SEP 26 1990

Ms. Melinda Young
Viking Pump - Houdaille, Inc.
406 State Street
Cedar Falls, Iowa 50613

Dear Ms. Young:

I am writing to inform you of the Agency's review of your sampling plant (#D0811) that pertains to a petition which, when submitted, will request exclusion of wastes from the treatment of cyanide furnace crucibles, currently listed as EPA Hazardous Waste No. F011. The subject wastes are presently contained in two slurry ponds and a flood control reservoir located at your South Main Street Plant, Cedar Falls, Iowa.

Please note that, while the EPA has granted exclusions for wastes contained in land-based units, recent proposals to exclude such wastes have led to negative public comments (e.g., see 55 FR 11188, March 27, 1990). This opposition was based on the use of delisting to supersede formal closure of the units under RCRA. Therefore, to avoid the uncertainty associated with a petition for the in-place wastes, we suggest that you excavate the units and store the waste in question and pursue a delisting for the excavated materials. Further details concerning this strategy are given in Enclosure I. Excavation also more clearly defines the aerial extent and volume of the petitioned waste. An accurate estimate of the volume of the petitioned waste is critical to the evaluation. If you desire to pursue this strategy, we encourage you to confer with the State and EPA Regional office to determine the regulatory status of the residual soils remaining in the treatment units.

A key issue arising from the delisting of in-place waste is the regulatory status of the unit after delisting. Typically, when EPA delists a hazardous waste, the waste remain a solid waste and must be managed according to all applicable State solid waste regulations. If Viking is still interested in delisting the in-place waste, we suggest you provide a full explanation of

the regulatory status of the unit after delisting. It would be helpful if the petitioner can demonstrate that existing State laws (or binding consent agreements) require that the unit (and any delisted waste contained therein) remains a solid waste management unit and is subject to some level of regulatory control. The distinction between "clean" closure and delisting in this case would be clearer and easier to justify.

After reviewing our comments, you may find that many of our suggestions overlap with State or Region requirements. In particular, the State or EPA Regional office may have ground-water monitoring, waste sampling, and soil sampling requirements for closure. We encourage you to investigate the applicable requirements for your units so that your sampling and analysis program might fulfill both delisting and State or EPA Regional requirements concurrently.

If you choose to pursue a delisting of the wastes, we recommend that you consider our comments regarding spatial variability, temporal variability, and sample collection procedures. These comments are presented in Enclosure I.

In addition, we are concerned that your sampling and analysis plan will not characterize all hazardous constituents that may be present in the wastes. Specifically, additional hazardous constituents are likely to be present as a result of waste management practices that allowed non-hazardous waste and facility run-off to be discharged to the units. A discussion of analytical parameters necessary to characterize the wastes is presented in Enclosure II.

We also are concerned that issues which were grounds for our dismissal of your previous petition (#0543) are not addressed in the sampling plan. Specifically, your proposed sampling plan fails to identify how representative ground-water sampling will be conducted. The Agency has recently proposed a rule clarifying the Agency's use of ground-water monitoring data in delisting decisions (see 54 FR 41930, October 12, 1989). Our specific requirements concerning ground-water monitoring are presented in Enclosure III.

Should you have any questions concerning our review of your sampling plan or need to clarify the information required for submitting a revised sampling plan or formal petition, please

feel free to call me at (202) 382-2224.

Sincerely,

Robert Kayser, Chief
Variances Section

cc: Elizabeth Cotsworth
Bob Scarberry
Jim Kent
Chet McLaughlin, Region VII
Mike Sanderson, Region VII
Gary B. Enloe, JMM
Eileen Regan, SAIC
John Vierow, SAIC

ENCLOSURE I

Waste Sampling Strategy

You may pursue one of two waste sampling strategies: sampling the waste in the units, or excavation of the units and subsequent sampling of the excavated materials. Regardless of which strategy you choose, sampling must account for variability resulting from historic process operations and the introduction of other wastewaters to the units.

Spatial and Temporal Variation

Based on the information provided in your sampling plan, we believe that you have chosen an adequate number of samples to represent the spatial variability of waste in each unit (i.e., the collection of four composite samples from each slurry pond; the collection of eight composite samples from the flood control reservoir). We also recommend that five grab samples be drawn from each section of each waste unit to form each composite sample, as determined by random sampling methods discussed in the Guidance Manual[1]. We believe this approach will result in the collection of samples that are more representative of constituent variability than the perimeter sampling approach presented in your previous petition.

Variability over time, or temporal variability, must be accounted for in your sampling plan. This is dependent upon the operating characteristics of your units. For example, your petition must specify whether facility run-off, process waters, and non-process waters currently enter the units, whether liquid is discharged or evaporated from the units, and the quantity of standing liquid in the units. If the units are not presently in use, then your wastes are expected to show little or no variability in the future and thus you do not need to provide further information in this regard.

Current influents will affect the future waste composition of the units. Although waste classified as EPA Hazardous Waste No. F011 is no longer introduced into the flood reservoir, other influents will contribute sediment of the units and this will

[1] "Petitions to Delist Hazardous Wastes-A Guidance Manual," Office of Solid Waste (EPA/530-SW-85-003), April 1985.

affect the variability of the petitioned wastes over time and must be accounted for in the sampling plan. To address this concern, you may be able to show that current influents are similar in composition to influents in the past, due to similar plant operations. If influents are expected to change, or have recently changed, you must describe how these influents are expected to influence the composition of the petitioned wastes. Based on our evaluation of petition information, we may require additional sampling of the sediment or the influents in the future.

Sample Collection

We are concerned that the full depth variability of the wastes will not be sampled. For example, depth is dependent on free liquid above the sediment, which in turn is dependent on current influents to and effluents from the units. You must demonstrate that the sampling equipment will penetrate the sediment to the bottom of the units. You have not provided sufficient information for the Agency to determine if a three-foot Shelby tube would be of sufficient length to sample the petitioned wastes. Because it is likely that the sediments are not homogenous due to settling and due to historic changes in influents over time, it is important that the full-depth of the wastes be sampled. Please also state the overall dimensions of the petitioned units; the dimension information presented in Figures 1-2, 2-1, and page 3 of your draft sampling plan are inconsistent. Also include the waste depth and volumes in each of the three units.

In addition, any liquids present in the units are also classified as EPA Hazardous Waste No. F011. You must explain whether a significant volume of free liquids is present above the sediments and, if so, if these liquids are to be included in the scope of your petition. If you desire to include the liquids as part of your petition, you must collect and analyze samples of the liquid in a manner similar to that described for the unit sediments.

Samples to be analyzed for volatile organic compounds should not be composited in the field due to the potential loss of volatile compounds. We recommend that you either analyze grab samples separately for volatiles, or carefully composite grab samples in the laboratory prior to analysis.

The equipment decontamination procedures described in your sampling plan (steam cleaning) are adequate to prevent cross-contamination of the composite samples. However, we are concerned that the use of Shelby tubes may not adequately represent the volatile organic composition of the sediments due to the necessary sample extraction procedure. Rather, we suggest the use of a split spoon or coliwasa depending on the physical state of the sediments. Sampling equipment should be constructed of stainless steel, or be lined with other inert material, to prevent metal contamination.

ENCLOSURE II

Analytical Parameters

The selection of constituents for testing should be dependent on the historical introduction of materials to the units. In particular, our review is not limited to the constituents in the F011 waste, but encompasses all influents (e.g., process water and surface run-off) over the lifetime of the units.

Therefore, you must provide descriptions of:

- All historic operations, including process and non-process sources of wastewater, that contributed wastes to the three units, and the composition or characteristics of these streams. Please specify when the units were constructed and when they began receiving wastes.

- The identification of sources of facility run-off, both from your facility and surrounding areas that could have contributed run-off to the units. We believe that run-off may contribute significant levels of hazardous organic constituents to the petitioned wastes.

- Sources of oil and grease, including oils that are present as contaminants in run-off and in process water as a result of implant use or from residential oils on metal received at your facility.

- Sources of hazardous organic constituents that could be present in additives to corrosion inhibitors, cleaners, and treatment materials. All relevant material safety data sheets (MSDSs) should be included.

Based on the information submitted thus far, you have not justified why organic analyses should be limited to the constituents listed in Section 3 of your draft sampling plan. Analytes should include all constituents listed on 40 CFR Part 261, Appendix VIII, acetone, ethyl benzene, isophorone, 4-methyl-2-pentanone, styrene, and xylene (total) that may potentially be present in the wastes. You may determine that some hazardous constituents are not expected to be present in the petitioned wastes because the constituent was not used as a raw material at

the plant, is unlikely to be present as a raw material contaminant, and is not likely to be formed as a byproduct in the plant processes. You must include a justification for not analyzing other Appendix VIII constituents.

Your ability to characterize the past and present influents to the units will affect your choice of analytical parameters. Based on the process descriptions provided above, you may be able to limit the required analytical parameters. However, in limiting constituents for testing, it is not sufficient to just state that a constituent is not likely to be present. Based on the numerous historic processes contributing wastes to the units, we do not believe that you would be able to limit constituents for testing (except perhaps for special constituents, such as dioxins).

We recognize that the Appendix VIII list presents a number of analytical problems for some constituents. However, we request that any available information concerning the presence of these constituents be included as part of a complete petition. For analytical testing purposes, you must analyze the samples for those compounds which can be accurately quantified using the appropriate methods from "Test Methods for Evaluating Solid Wastes-Physical/Chemical Methods," (third edition), EPA publication SW-846, November 1986. It should be noted that SW-846 analytical test methods exist for all constituents listed in 40 CFR Part 264, Appendix IX.

Representative samples of the petitioned wastes should be analyzed for the following parameters:

- Total oil and grease content

- Total constituent concentrations of all the TC metals, nickel, cyanide, sulfide, and any hazardous constituents that are potentially present in the wastes

- Leachable concentrations of all the TC metals, nickel, and cyanide. Use distilled water in place of the acetate buffer in the cyanide extraction. For waste samples that contain less than one percent oil and grease, use the Toxicity Characteristic Leaching Procedure (TCLP, SW-846 Method 1311, see the TC rule in 55 FR 11798, March 29, 1990). For waste samples that contain greater than one percent oil and

grease, use the Oily Waste Extraction Procedure (OWEP, SW-846 Method 1330) and substitute the TLCP for the extraction procedure in Step 7.9 of the OWEP. We plan to continue to require the OWEP for delisting demonstrations because the TCLP currently has no special provisions for oily wastes. In all cases, the TCLP should be used to determine the leaching potential of hazardous organic constituents that are potentially present in the wastes. Please note that for liquid wastes, the leachable concentration of a constituent is equivalent to the total concentration of that constituent.

- Total concentrations of reactive sulfide and reactive cyanide, if total sulfide and total cyanide levels exceed 500 and 250 ppm, respectively.

- Characteristics of ignitability, corrosivity, and reactivity. In lieu of testing for a particular characteristic, you may provide a detailed explanation as to why the wastes do not exhibit the characteristic.

Appropriate quantification limits are given in SW-846; these limits should be met for all extract and ground-water samples. SW-846 also gives practical quantification limits (PQLs) for other matrices. As stated in your sampling plan, the reported laboratory detection limits should be as close as possible to established drinking water standards.

The following information should also be provided:

- A detailed description of procedures used to collect, prepare, preserve, and analyze each sample. Include the names and qualifications (a brief resume will suffice) of all personnel involved in the sampling and analysis program. Also provide a list of the names and model numbers of all sample collection, protection, preservation, and analytical instruments used. Detailed sampling, extraction, and analyses should be provided.

- A description of all Quality Control (QC) procedures followed during the collection and analyses of samples. This should include, as appropriate: 1) method blank analyses, 2) field QC analyses (i.e., field blanks, equipment blanks and trip blanks), 3) matrix ??? and matrix spike duplicate

analyses, and 4) one ??? (or CWEP) toxicity test run for each of the TC metals, nickel, and cyanide using the method of standard additional procedures for these and other appropriate QC procedures are fully described in Chapter One of SW-846. Each analytical test method in SW-846 notes laboratory QC procedures are appropriate for that particular test method. In addition, all of the sample preservation procedures and holding ??? required by SW-846 must be followed.