



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

JUN 15 1981

OFFICE OF ENFORCEMENT

Mr. John McDonald
Environmental Protection Service
Ontario Section
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7th Floor
25 St. Clair Avenue East
Toronto, Ontario Canada

Dear John,

Enclosed is copy of the EPA Incinerator Research Branch's evaluation of Hooker Chemical & Plastics Incinerator in Niagara Falls, New York. Although this evaluation is based on limited data, the conclusion, i.e. that the data available to date does not indicate that the incinerator can meet the requirements of EPA regulations, is in agreement with EPA's previously stated view. Letter from Deputy Director of Enforcement Division, EPA Region II (March 12, 1981) and Response to Public Comments on the Hyde Park Proposed Consent Judgment at pp. 34-35 (Copies attached). In 1979 EPA's Office of Enforcement inspected Hooker's incinerator. Our technical team's judgment was that the data did not indicate that the incinerator met EPA requirements. This view was based on a review of the data obtained during an inspection of the incinerator and a comprehensive audit of the Hooker Niagara Falls plant. Since that report also covers matters which are still the subject of investigation and litigation, I cannot give you a copy at this time.

The proposed Hyde Park Agreement (a copy of the incinerator related portions of the proposed Agreement is enclosed) does not endorse or approve of Hooker's incinerator and Hooker has repeatedly been so informed. The proposed Agreement requires Hooker to incinerate the relatively viscous insoluble chemicals (non-aqueous phase) collected by the tile drain and purge well collection systems required under the Agreement, unless Hooker demonstrates that some other technology is at least the performance equivalent of incineration (See p. 1-30 Paragraph E (5) of the proposed Agreement). Contaminated materials, spent media, or solid residues may also be incinerated (See p. 1-25 Paragraph E (3)).

The specific incinerator requirements in the proposed Agreement (at F-I-31-2 Paragraph E (6)), are based on the proposed EPA regulations pending at the time the proposed Agreement was negotiated and lodged with the Court. In order to ensure that the latest regulatory requirements would apply to Hooker, the proposed Agreement also specifically requires Hooker to operate the incinerator in a manner to meet applicable Federal and state

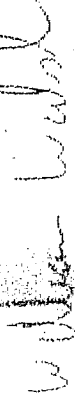
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statutes and regulations." (p. 7 - 3 E (6)(f)) (See a copy of the two applicable EPA incinerator regulations which are enclosed). Hooker therefore must comply with EPA and the State Hazardous Waste Incinerator regulations, EPA and the State PCB incineration requirements, and EPA's dioxin disposal regulations (see copy enclosed). In sum, Hooker will not be able to incinerate any wastes unless and until it has demonstrated through submission of data and carefully supervised test burns that incineration of such waste would have no adverse environmental impact.

If you have any further questions on this matter, please feel free to call me.

Enclosures

Yours truly,



William Walsh
Attorney-Advisor
Office of Hazardous Waste
Enforcement

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF RESEARCH & DEVELOPMENT
INDUSTRIAL ENVIRONMENTAL RESEARCH LABORATORY

Mr. J. F. McDonald
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Dear Mr. McDonald:

Your letter of June 5, 1981 specifically asked for IPR's comments on two questions:

- (1) The adequacy of the Hooker Chemical Company incinerator for destruction of the Hyde Park residues.
- (2) The suitability of incineration in general as a destruction method for the wastes in question.

With regard to the latter question, we believe controlled high-temperature incineration to be the most effective existing means for destroying organic hazardous waste to a high degree (99.99 percent and greater). Considerable design and operating experience is available on incineration relative to other hazardous waste control technologies. It has the ability to destroy a wide variety of hazardous materials. Perhaps the disposal of as much as 50 percent of the current United States annual hazardous waste generation is manageable by incineration. While incineration hardware is state of the art, there is a great need for more waste-specific performance data for a wide variety of hazardous waste streams for the numerous variants of incineration systems in order to determine the specific operating requirements for meeting RCRA and other performance standards.

On the first question, based upon the information you provided on the Hooker incinerator and the waste material of concern, it is not possible to provide a definitive engineering assessment of the adequacy of the incinerator. Also, the time available for evaluation is quite short. The following comments, however, represent our initial best engineering judgement on this matter and outline the data and steps which are necessary to eventually determine the adequacy of the unit.

- (1) The design of the incinerator proposed is apparently some 20 years old, and the drawings or sketches you supplied are insufficient to permit our understanding of its operation in a complete manner.

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(2) The waste to be incinerated is not well defined in terms of concentrations of principal organic hazardous components (POHC's), the heating value, halogen content, moisture, percent solids, viscosity, and other properties.

(3) The mechanical design of the combustion chambers, apparently two units of similar size, is not well defined. More information on construction details, materials used, flow patterns, burner configurations, sizes, locations, auxiliary fuel inputs, temperature information, and other data would be essential for a complete definition.

(4) EPA's knowledge of the incinerability of certain of the waste components in the liquids and residues is limited, but some data is available on many of the compounds you listed in the form of laboratory and pilot scale investigation results. For example, hexachlorocyclopentadiene was examined at laboratory scale and in a pilot incinerator, but further tests would be necessary at full scale. Benzene is believed to be easily incinerated, as is the case with trichloroethylene. Mirex was tested in a pilot scale incinerator, and although these brief tests showed somewhat less than 99.99 percent destruction, we believe that proper feed and atomization conditions would show satisfactory results at full scale. Lindane pilot scale data is available and shows better than 99.999 percent destructibility. A host of PCB destruction data is also available including full scale information. Whether existing data can be applied to other incinerators of different sizes and designs is, of course, another matter. The EPA recommends that trial burns be implemented in most cases involving verification of one set of operating data which may be applied to a different incinerator of significantly different design.

Although time did not permit a search for more data on all of the compounds you mentioned from our sources of information available, our judgement is that most if not all of the compounds you noted including the dioxins can be safely incinerated under proper conditions and in state of the art incinerators. However, dioxins may require the most stringent control and operating parameters as well as presenting the biggest problem in terms of conducting test burns. In 1977, for instance, when dioxin contaminated herbicide orange inventories were incinerated, Federal authorities determined that for this particular action, incineration at sea using the incineration ship, Vulcanus, provided the optimal solution by removing the incineration site far away from populated areas. Due to the nature of dioxins, little data is available at laboratory or pilot scale, unfortunately.

(5) We would be very interested in any past performance data from the Hooker incinerator on known compounds in terms of destruction efficiency and temperatures, etc. These data may provide some insight into the incinerator's capacity for the compounds of current interest.

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(6) We feel that the Hooker incineration system does have the apparent capability for operating temperatures up to 1300° to 1420°C, which, along with sufficient residence time and mixing, could most likely destroy all of the compounds mentioned. However, we would require additional verification information on these claimed performance parameters as well as the past performance information noted above.

(7) Possibly our newly formed Permit Assistance Panel consisting of some 20 incineration experts may be appropriate to consider this matter further. This would have to be determined by offices other than at our R&D level.

In conclusion, we believe that any operational permit for the Hooker incinerator could not be granted without conducting an EPA approved series of trial burns on the unit. Such trial burns may need to begin with performance tests of the unit on selected waste streams of lesser toxicity levels first, proceeding towards the testing of gradually increasing concentrations of more toxic P&H's and then actual Hyde Park landfill residues of interest. Incineration regulations appropriate for consideration would include all of the Federal requirements now available (but not yet promulgated) under RCRA. For adequate control of dioxin compounds, it is conceivable that the current EPA task force on dioxins may also add additional requirements for incineration of the Hyde Park landfill residues in the near future. PCB regulations may also be appropriate.

Please review the comments contained in this letter and do not hesitate to contact us further through Mr. Walsh's office. Mr. Oberacker and I would appreciate hearing from you as to whether this reply has satisfied your letter of request at this point.

Sincerely yours,

E. Timothy Spelt
Chief
Incineration Research Branch
Industrial Pollution Control Division

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