RESPONSE TO COMMENTS

ON THE

INORGANIC CHEMICALS LISTING DETERMINATION

INFORMATION COLLECTION REQUEST (ICR)

Docket No. F-98-SICP-FFFFF

August 28, 1998

Submitted to:
U.S. Environmental Protection Agency
Office of Solid Waste
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Modifications to EPA's questionnaire

The following comments were submitted by the Environmental Defense Fund (EDF), Comment SICP-00001. Received by the RCRA Docket May 28, 1998.

These comments are provided on the version of the questionnaire dated February 17, 1998. Pages or section numbers of the draft are used where possible to facilitate modifications to the draft as required.

Comment 1. Page 8. In this section of the questionnaire, waste characterization information is sought. In paragraph 4, EPA asks whether the waste is already identified as hazardous, and if not, whether the waste is managed as hazardous regardless. Given the issues surrounding the recent carbamates and organobromines listing determinations, if a particular nonhazardous waste was managed as hazardous, EPA should also determine when hazardous waste management began, whether the waste was always managed as hazardous, and if not, how it was managed when handled as a nonhazardous waste.

In paragraph 6, the questionnaire recipient is asked to list the "elements or compounds" that are "known by analysis" to be present in the waste. EPA should clarify that this data request includes both inorganic and organic chemicals.

Response: The Agency does not believe it is necessary to require facilities to provide detailed historical information on what type of waste management was performed. If this type of information is found to be needed later, the Agency can gather the information from other sources or ask for the information directly from the facilities. Therefore, the Agency has not incorporated any additional questions into the questionnaire.

The Agency will add the clarification of "organic and inorganic compounds" to Section III question 6.

Comment 2. Page 18. In this section of the questionnaire, EPA seeks data on the relevant waste management units. One part of the data requested is intended to determine the length of the unit active life, by requesting the date the unit opened and the "expected" closure date. However, the draft questionnaire does not ascertain how the waste will be managed when the unit is closed. If the facility intends to replace the closing unit with another unit of the same type, the active life of the unit is, for modeling purposes, continuing since one unit is merely substituted for another. Therefore, EPA must determine how the waste will be managed at the facility if the facility intends to close the unit at some future time. If the facility cannot articulate how the waste will be managed once the unit is closed, EPA must regard the predicted closure date as extreme speculation, particularly if the predicted closure date is within the next 10 - 20 years.

Response: EPA requests information on expected changes in residual management in Section IV. The Agency does not believe it appropriate to ask industry to speculate on specific future business

decisions (e.g., how waste will be managed when an unit is closed). Therefore, in response to this comment, EPA will not make any changes to the questionnaire.

Comment 3. Page 19. For land-based units, EPA seeks data on the total capacity of the unit, and the percent of capacity used in 1997. In the petroleum refinery waste listing determination, the information was useful in determining whether and to what extent the wastes at issue were codisposed with other wastes contributing to potential environmental risks. To address the codisposal issue directly, and thereby facilitate any codisposal risk evaluation that may be appropriate for this listing determination, EPA should ask for general descriptions and quantities of the other wastes placed in the unit.

No data are sought on whether groundwater quality around the land-based units is monitored pursuant to a state requirement, whether releases have been detected, whether the units are solid waste management units for the purposes of Section 3004(u) and 3008(h) of RCRA, and if so, whether these units were identified as actual or potential sources of contamination requiring a RCRA Facility Investigation. At a minimum, this information would assist EPA in its damage case investigations. A state groundwater monitoring requirement often includes some level of record keeping and reporting that can be subsequently reviewed as appropriate. If groundwater monitoring performed to date has detected contaminants in excess of background levels, triggered a notification to the state of detected contamination, prompted assessment monitoring to determine the nature and extent of contamination, and/or prompted some other response dictated by state law, EPA could then use this knowledge as the basis for follow-up investigations at a later date. Similarly, identifying SWMUs posing potential risks will enable EPA to conduct subsequent inquiries of the Regions and states regarding the problem units.

Response: Other waste streams that are not generated from processes within the scope of the inorganic chemicals listing determination are not being studied at this time. Therefore, the Agency will not request that the respondents list other residuals (not otherwise identified in the survey) that are managed in the onsite land-based units.

With regard to the commenter's concern about groundwater quality, the Agency notes that Table V.1 requires characterization of each unit's RCRA permit status, including classification as SWMUs. Further data regarding groundwater quality was not requested in the survey because EPA's risk assessments are not site specific. EPA can use other resources to gather this information and will request as needed that facilities send any available groundwater monitoring and/or hydrology reports. Therefore, in response to the comment, EPA will make no changes to the questionnaire.

Comment 4. Page 22. The comments immediately above regarding page 19 also apply to the section on land treatment units.

Response: See response for Comment 3 above.

Comment 5. Section V Generally. EPA does not seek any data regarding the hydro geology where the land-based units are located. While EDF concurs that site-specific data are not generally required for the upcoming listing determination, EPA should ask several questions related to whether EPA's groundwater models will account for the range of conditions encountered in the industry. In particular, EPA should inquire whether the units are located in karst terrain or other conditions associated with fractured flow. This information was crucial in the CKD regulatory determination, and may prove equally important for this industry.

Response: See response to Comment 3 above.

Comment 6. Page 29. The questionnaire recipient is asked whether the waste piles are equipped with run-on/run-off controls. If a yes answer is provided, there is no follow-up question attempting to determine the adequacy of such controls. In the petroleum refinery listing determination, EPA arbitrarily assigned a 50% efficiency to the industry run-off controls, because of the lack of more meaningful data. Instead of reaching arbitrary judgements, EPA should ask whether the control system is designed for a 10 year or less, 25 year, 50 year, or 100+ year storm event; and what percentage of run-off must be controlled under the specific storm event.

Response: The Agency will request information on run-on/runoff controls and storm event design for piles.

Comment 7. *En Passim*. Throughout the questionnaire, EPA requests quantitative data on a variety of subjects (i.e., liner thickness and other properties) for which answers of varying quality can be expected depending upon availability and knowledge, among other factors. In some cases, EPA may attempt to verify the accuracy of the data submitted, but in many cases the data will not lend itself to verification or the resources required for verification are too great. In order to assist EPA in its verification efforts, and to enable the Agency to project a reasonable mismanagement assumption where it is necessary to do so, the Agency should review the entire questionnaire for the purpose of inserting questions regarding the bases for the answers provided. Specifically, EPA should determine whether the answers reflect objective testing or other data performed at the site, or whether the answers are based upon the "judgement" of the facility personnel. If objective test or other data are used, EPA should ask whether the data are still available at the facility, in case EPA wishes to review it as part of the verification effort.

Response: The Agency will conduct a quality analysis and will verify the accuracy of the data as a matter of routine. The EPA does not believe it is necessary to distinguish whether the data are based on objective testing or upon "judgement". Therefore, in response to the comment, EPA will make no changes to the questionnaire.

<u>Comments Disputing the Inclusion of Barium Carbonate Production Wastes in the ICR</u>

The following comments were submitted by Chemical Products Corporation (CPC), received June 3, 1998. Comment SICP-00002.

Comment 1: At 63 FR 17171 (April 8, 1998), EPA states that the primary goal of these information collection efforts is to determine if a waste should be listed as hazardous. In response to petitions filed by CPC concerning EPCRA section 313 delisting, EPA has acknowledged that soluble barium can be rendered harmless to humans and the environment by precipitating it as insoluble, non-toxic barium sulfate. This is currently being done on the only barium carbonate production waste stream being generated in the U.S.; EPA already has available to it, in CPC's RCRA Part B Hazardous Waste Treatment Permit, the information it requires to determine that this particular waste should not be specifically listed as hazardous under Sections 3001 and 3004.

At 63 FR 17171 (April 8, 1998), EPA states that a further goal is to perform risk assessments, yet EPA has been unable or unwilling to properly consider scientific information already in its possession which demonstrates that the chronic toxicity of soluble barium is much less than had been previously supposed. In a letter to CPC dated March 27, 1997, EPA states, "At this time, resources do not allow for the Office of Solid Waste to undertake the extensive review that would be necessary to examine the environmental impacts of a change in the TC level for barium." This letter is signed, "Matthew Hale for Elizabeth A. Cotsworth, Acting Director, Office of Solid Waste." A copy of this letter is enclosed herewith. CPC does not believe that risk assessments performed in the absence of a full consideration of the relevant sound scientific information will have any utility.

CPC, a Georgia corporation, has been manufacturing barium chemicals at its facility in Cartersville, Georgia for more than 60 years. CPC has been vigorously pursuing the revision of regulatory levels for soluble barium to reflect the scientific information now available.

CPC was the first to obtain access to one of EPA's Integrated Risk Information System (IRIS) files when it was made available to the public in December, 1993; CPC found undocumented and incorrect assertions in the working group's minutes that were employed to support the Oral RfD for soluble barium contained in IRIS. CPC has made information submissions and document submissions to the IRIS Information Submission Desk, yet a scientifically untenable Oral RfD for soluble barium is still contained in the IRIS database; a copy of the letter sent to Ms. Carol Browner by CPC dated April 20, 1998 which describes the deficiencies in the IRIS barium file in detail is enclosed herewith.

In response to CPC's letter to Administrator Browner described above, CPC has received a letter dated May 28, 1998 from Dr. William H. Farland, Director of EPA's Office of Research and Development. Dr. Farland's letter states on the last page, "No further amendment to the barium RfD on IRIS is planned for the near future." On the second page of Dr. Farland's letter, two statements are made concerning studies purported to demonstrate a link between chronic oral barium ingestion and hypertension; both statements are grossly incorrect and appear to be intentionally misleading. For example, the first statement in Dr. Farland's letter, a copy of which

is enclosed, states, “Furthermore, the subchronic drinking water study in rats conducted by McCauley et al. (1985) provided suggestive evidence for the potential hypertensive effects in animals exposed to relatively low levels of barium.” This is completely false; the summary of this study contained in the IRIS barium file itself states, “McCauley et al. (1985) studied the histologic and cardiovascular effects of drinking water containing 0, 10, 100, or 250 mg/L barium for 36 weeks; 0, 1, 10, 100, or 1000 mg/L barium for 16 weeks, or 0, 10, 100, or 250 mg/L (0, 1.4, 14, 35, or 140 mg/kg Ba) barium for 68 weeks on male Sprague-Dawley rats (6/group). Females were exposed to 0 to 250 mg/L for 46 weeks. No significant histologic, carcinogenic, or cardiovascular (including hypertension) effects were observed. No changes were reported in body weight, or food and water consumption in any of the treated animals. Animals treated at the highest dose (1000 mg/L) did exhibit ultra structural changes in the kidney glomeruli and the presence of myelin figures. No other effects were reported at any dose level for males or females.” At least in the case of soluble barium ion, EPA has demonstrated an inability to objectively evaluate the scientific information available to it; external, independent peer review of EPA’s determinations is clearly required before any further information collection activities can have any utility.

In 1992 CPC petitioned EPA to delist barium sulfate from the barium compounds category in EPCRA section 313; the final rule delisting barium sulfate from EPCRA section 313 reporting requirements was published on June 28, 1994 at 59 FR 33205-33208. EPA confirmed that barium sulfate presents no foreseeable hazard to human health or the environment. A copy of this final rule is enclosed herewith.

On January 3, 1997 at 62 FR 366-372 (in response to another CPC petition) EPA reaffirmed that barium sulfate presents no foreseeable hazard to human health or the environment and agreed that the environmental fate of soluble barium ion is precipitation as insoluble barium sulfate; a copy of this FR notice is also enclosed herewith.

CPC believes that the above information demonstrates conclusively that the proposed information collection concerning barium carbonate production process waste is unnecessary for EPA to determine that this waste should not be specifically listed. EPA already has ample information concerning barium available to it; what is needed now is proper consideration of the scientific information and revision of the regulatory levels for soluble barium to reflect sound science.

Response: EPA thanks the commenter for the information it has provided to the Agency in the past and will consider this information when conducting the listing determination. However, in conducting a listing determination, EPA must develop a “record” of its decision-making process and therefore is required to collected timely, specific information (e.g., waste volumes, management, characteristics) to support its final decision. The RCRA §3007 is a crucial part of this information collection process. Therefore, any facility in the United States producing barium carbonate will be required to respond to the survey.

The commenter must also understand that when EPA conducts a listing determination it evaluates

risk via a multi pathway approach. In other words, EPA conducts risks assessments for additional pathways beyond groundwater which is what the commenter is referring to in the solubility of barium sulfate with regards to the Toxicity Characteristic (TC). EPA must also consider risks from surface water runoff and airborne pathways. In these instances, EPA uses the total concentration of barium in the wastes as well as other possible contaminants (e.g., lead, arsenic, reactive sulfide) in the waste which may or may not be below TC action levels.

Comment 2: EPA's continuing failure to base its determinations on sound science greatly increases the burden of its activities on the regulated community as companies like CPC literally spend man-years trying to obtain a fair hearing; EPA's estimate of the burden of the proposed collection of information is likely to be inaccurate for this reason.

CPC once again respectfully requests that OMB deny authorization for EPA's Information Collection Request in compliance with the Paperwork Reduction Act (44 U.S.C. 3501 et seq.). On the basis that the information will not have practical utility, because EPA has demonstrated that it is not presently capable of evaluating such information in a scientifically sound manner. EPA should demonstrate scientific competence before being authorized to conduct any further information collection activities.

Response: As stated in Comment 1 above, EPA must develop a "record" of its decision-making process and therefore is required to collected timely, specific information (e.g., waste volumes, management, characteristics) to support its final decision. The RCRA §3007 is a crucial part of this information collection process. Therefore, any facility, in the United States, producing barium carbonate will be required to respond to the survey.

EPA's Questionnaire Does Not Collect the Appropriate Information

The following comments were submitted to the RCRA Docket by the FMC Corporation on June 8, 1998. Comment SICP-00003.

Comment 1: EPA must consider ten specific factors when making listing determinations based on non-acute toxicity. 40 CFR 261.11(a)(3) (attachment A). In particular, EPA must evaluate:

> (i) the nature of the toxicity of constituents in the waste;
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> (ii) the concentration of these constituents;
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> (iii) the potential of the constituents and their degradation products to migrate when mismanaged;
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> (iv) the persistence of the constituents and their degradation products;
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> (v) the potential and rate for the constituents and their degradation products to degrade

into non-harmful constituents;

(vi) the degree of bioaccumulation of the constituents and their degradation products;

(vii) the plausible types of improper management to which the waste could be subjected;

(viii) the quantities of the wastes generated at individual sites or on a regional or national basis;

(ix) the nature and severity of human health and environmental damage that has occurred from improper management of the wastes; and

(x) other regulatory actions or programs taken by governmental agencies to address the risks posed by the waste or its constituents.

When interpreting these regulations, the U.S. Court of Appeals for the District of Columbia Circuit has made it absolutely clear that EPA must consider each of these factors before making a listing decision. See Dithiocarbamate Task Force v. EPA, 98 F.3d 1394 (D.C. Cir. 1996) ("The theory that 261.11(a)(3) does not require consideration of the ten factors defies the language of the rule, which we have already quoted.")(attachment B).

In order for EPA to evaluate each of these factors, EPA must collect data on each of the factors. Unfortunately, the current draft of the RCRA 3007 Questionnaire does not appear to do so. This failure should be corrected now. Unlike EPA's approach in listing wastes from the carbamate industry, where EPA used hypothetical mismanagement scenarios and failed to discuss other regulatory programs that were already in effect, EPA should revise its Questionnaire to assure that it will have adequate data on each of the ten factors for each waste that EPA will address in its listing determination.

In particular, the Questionnaire does not appear to solicit adequate information regarding factors (i), (ii), (iii), (iv), (v), (vi), (vii), (ix), and (x). For example, although the Questionnaire requests known information regarding concentration and leaching of constituents in the waste (Part III, question 5), it does not solicit any information regarding the nature of toxicity of any of these constituents (except to the extent that the waste is already identified as hazardous) and does not indicate how it will obtain information regarding constituents present in wastes that companies have not themselves analyzed. Specifically, EPA should request information regarding the toxicity of constituents present in the waste, and indicate how EPA will obtain such information and information on constituents present in waste that is not provided by the companies themselves.

Response: This questionnaire only deals with those factors for which it is useful. However, EPA will use publicly available information to respond to many of the factors listed above. As part of the listing determination effort, EPA conducts sampling and analysis for residuals being studied.

EPA will consider constituents and concentrations when conducting the risk assessment. During the sampling and analysis phase of the study, EPA will offer split samples to the facilities allowing them to conduct their own independent analysis of the samples to verify EPA's results.

Concerning the toxicity of the constituents, EPA has conducted numerous studies on chemical toxicities as well as collected results from independent studies. However, if the facilities have collected such information or conducted independent studies, they are encouraged to provide them to EPA for consideration under this listing determination effort.

Comment 2: Similarly, the Questionnaire requests no information regarding the migration, persistence, degradation to non-harmful constituents, and bioaccumulation of the wastes. EPA should specifically request any such data that are available. Further, EPA should indicate how it intends to obtain such information that is not provided by the companies themselves.

Response: See response to Comment 1. EPA's databases have such information on the constituents of concern; however, facilities are encouraged to provide additional relevant data.

Comment 3: Finally, the Questionnaire fails adequately to address the factors on which the Court of Appeals focused: plausible mismanagement, environmental damage, and other regulatory controls. See 98 F.3d at 1400-02. The Questionnaire does request information regarding how residuals are currently managed and the costs associated with such management. (In particular, the Questionnaire seeks information regarding design and operation of particular types of management units.) However, the Questionnaire does not request information regarding expected future management of the materials, whether management in these particular units has resulted in any human health or environmental damage, whether any damage incidents have resulted from management of the wastes in other units, and whether and how these wastes or their constituents are subject to federal, state, or local regulatory controls. EPA should request information regarding expected future management and plausible mismanagement, environmental damage, and regulatory controls. EPA should also indicate how it intends to obtain such information that is not provided by the companies themselves.

Response: Section IV does request the respondents designate future changes in management. EPA will request as needed information concerning state and local regulatory controls for management units. Typically, damage incident information has been collected by EPA through publicly available information. EPA will request as needed that the facilities send damage incident reports, if available.

EPA's Estimate of the Information Burden is Unrealistically Low.

The following comments were submitted to the RCRA Docket by the FMC Corporation on June 8, 1998. Comment SICP-00003.

Comment 1: FMC has obtained from EPA a list of facilities that are perceived by EPA to be affected by the proposed listing determination relative to the wastes from the production of inorganic chemicals. Numerous FMC facilities are included on this list. In particular, under "Wastes from the Dry Process for Manufacturing Phosphoric Acid," EPA has identified FMC's Green River, Wyoming, Carteret, New Jersey, and Lawrence, Kansas facilities. Under "Phosphorous Trichloride Production Wastes," EPA has identified FMC's Nitro, West Virginia facility. Under "Phosphorous Pentasulfide Production Wastes," EPA has identified FMC's Lawrence, Kansas facility. And under "Inorganic Hydrogen Cyanide Production Wastes," EPA has identified FMC's Green River, Wyoming facility.

FMC clearly will be significantly affected by the ICR, as well as by EPA's listing determination process. FMC intends to work cooperatively to assure that EPA obtains the data that it needs to make its determination to list or not to list the wastes from these processes, including, as appropriate, site visits and sampling of particular waste streams to take into account specific chemical and physical differences.

In Exhibit 6.1, EPA estimated the burden of complying with the RCRA 3007 Questionnaire and with a site visit. FMC believes that these estimates are unrealistically low. In the absence of actual experience, a few examples should suffice to make this point. Exhibit 6.1 suggests that it will take an environmental engineer only 3 hours to read Part III of the Questionnaire, evaluate the waste generated and its management, and complete Part III. (An additional hour for a Process Engineer and on Operations Person is provided, presumably for their assistance in initial preparation.) In particular, Part III requires tracking of each residual by "RIN" numbers prepared during Part II, classification of each residual, specification of any hazardous waste determination for the residual, identification of nine physical and chemical properties of the residual, and then listing by percentage or by ppm the elements or compounds known to be present in the residual, along with any data regarding leaching behavior and any difficulties encountered in obtaining analytical data. To say the least, it may take substantially more than 3 hours simply to identify what, if any, data on the residuals has previously been collected by a company. It will take substantially more time -- depending upon the company as much as 100 hours for <u>each</u> facility affected -- to review the data to determine whether it contains the information sought by EPA, to organize the data, and to prepare it in the format sought by EPA. Additional time will be required to review the information at multiple levels within the company.

Similarly, Exhibit 6.1 suggests that it will take only 1 hour of lawyer time to review the materials prepared. However, lawyers may not be intimately familiar with the technical information requested by the Questionnaire. As a practical matter, lawyers invariably inspect submissions of information to government agencies very closely to assure that they are complete, accurate, and responsive to the request. In order to perform this task, a lawyer will be required to read the Questionnaire and response closely, as well as to review all the technical information on which the response is based. Again, it will take substantially more than 1 hour -- depending upon the company, perhaps as much as 50 hours for <u>each</u> facility affected -- to perform such tasks.

EPA should reconsider its estimate of information burden and should publish a more realistic estimate.

Response: EPA disagrees with the commenter that the burden estimates in Exhibit 6-1 for responding to the questionnaire are unrealistically low. EPA is not requesting or requiring respondents to collect any additional information to complete the questionnaire. No facility will be requested to perform any special analysis or tests for completion of the questionnaire. Responses are to be based on currently available data. If the facility does not know the response to a question and does not have the information, the facility is to use the best engineering judgement of qualified personnel to provide a response. Therefore, minimum effort should be required to gather and compile the information sufficient to provide adequate response to any question posed.

Furthermore, EPA notes that the burden estimate per facility is an average across all facilities that will receive the survey. In instances where the facility operates none of the targeted 14 processes, the burden to complete the entire survey will be less than 5 hours. For facilities that employ only 1 of the target processes, these respondents may be able to complete this survey in a fraction of the estimated time. Based on information available to EPA, most facilities receiving this survey will operate either only one process of interest, or will have ceased production. EPA acknowledges that the few facilities that currently operate more than one inorganic chemical manufacturing process will bear a larger burden than the industry average.

EPA also notes that the burden estimates for this RCRA Section 3007 survey are less than estimates from previous ICR surveys for other industries based on the reductions in the management unit characterization, unit-specific media characterization, and general facility sections. More detailed questions on these topics will be asked of only a subset of the inorganic chemicals industry through phone calls or letters.

All estimates are based on the Agency's past experience with administering the RCRA Section 3007 Questionnaires and site visits as well as on other data collection activities involving environmental engineering data from facilities.

Hydrogen Cyanide should not be included in the Listing Determination.

The following comments were submitted to the RCRA Docket by BP Chemicals on June 5, 1998. Comment SICP-00004.

Comment 1: BP Chemicals Inc. has two major production facilities that produce hydrogen cyanide as a co-product. One of BP Chemicals' facility further uses the hydrogen cyanide to produce acetone cyanohydrin. The facility supplies most of the hydrogen cyanide to another chemical plant adjacent to our property, for conversion into chelates and related products. Any remaining hydrogen cyanide is either sold to our preferred customer or treated onsite under RCRA permitted units.

The Agency should not include the proposed inorganic hydrogen cyanide production wastes for the following reasons.

1. Hydrogen cyanide is an organic chemical and is processed in a different manner than inorganic processes.

2. Hydrogen cyanide is already identified as a characteristic waste under RCRA.

3. The acrylonitrile production, that produces hydrogen cyanide as a co-product, has all the main processes identified under the listed wastes of K011, K013, and K014.

Response: In conducting a listing determination, EPA must develop a "record" of its decision-making process and therefore is required to collected timely, specific information (e.g., waste volumes, management, characteristics) to support its final decision. The RCRA §3007 is a crucial part of this information collection process. EPA understands that hydrogen cyanide is an organic compound, but is required to make a listing determination on the wastes associated with its production under the EDF consent decree. Therefore, any facility in the United States producing hydrogen cyanide, regardless of the process, will be studied under this effort and required to respond to the survey. We will consider the applicability of this listing determination once all of the information is collected.