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June 5, 1992

Mark A. Smith
Assistant Counsel

Mr. Richard W. Porter
Counselor to the Vice President
The White House
Washington, D.C. 20501

Dear Mr. Porter:

Thank you for taking the time to meet with us on May 28, 1992 about the Environmental Protection Agency's (EPA) beneficiation/processing determination of Molycorp's Mountain Pass facility wastes. We were grateful for the opportunity to explain in more detail, EPA's letters that reverse the agency's position taken in the 1989 Mining Waste Exclusion rulemaking.

After visiting with you, we had successful meetings with Jim Fitzhenry, Diana Furchtgott-Roth and Nancy Mitchell. We appreciate you opening doors for us. Hopefully, Don Clay will agree to meet with us soon, so we can begin exploring for satisfactory solutions to this matter with the EPA.

Enclosed, as we promised you, is a copy of the "Summaries of Correspondence Addressing the Mining Waste Exclusion and Related Issues," dated November 6, 1991, prepared for EPA by ICF Incorporated. This document is not comprehensive. For example, it does not identify and summarize the May 14, 1991 letter determination from the EPA Office of Solid Waste to the State of California about the Mountain Pass facility wastes. (See page 95). The April 7, 1992 EPA letter to Molycorp obviously was written after this summary was prepared. Also the February 14, 1992 memorandum from Sylvia Lowrance, Director of EPA's Office of Solid Waste to Jeffrey Zelikson of EPA Region IX is not included. This letter determines the Bevill status of wastes from the Searles Lake facility operated by North American Chemical Company, which in our view also constitutes rulemaking by letter.

We are providing copies of the ICF summary document to Jim Fitzhenry, Diana Furchtgott-Roth and Nancy Mitchell.

Again, thank you for your assistance.

Sincerely

mark a. smith

MAS:mm
Enclosure

cc: R. Gene Dewey
Grover E. Eaton
Douglas E. McAllister, Esq.

**SUMMARIES OF CORRESPONDENCE
ADDRESSING THE MINING WASTE EXCLUSION
AND RELATED ISSUES**

Draft - November 6, 1991

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SUMMARIES OF CORRESPONDENCE ADDRESSING THE MINING WASTE EXCLUSION AND RELATED ISSUES

INTRODUCTION

This document provides a summary of correspondence to and from U.S. EPA headquarters regarding the Mining Waste Exclusion and related issues. The document reflects all correspondence (dating from 1979) that has been provided to ICF by EPA to this point. In certain cases, there are likely to be additional pieces of correspondence (e.g. an official EPA response letter to a company or agency of state government) that are relevant in the current context, but that have not been made available to us. Accordingly, the sector- and waste-specific summaries contained in this document should not be considered comprehensive.

The correspondence summaries are arranged alphabetically by sector, and within each sector, groups of documents have been categorized by inquirer, or party of primary concern. The summaries are also categorized alphabetically by inquirer within each sector. At the top of each summary, the inquirer is noted, as well as sector, waste stream, and key words. The relevant documents are then briefly summarized in a table format, and the significant issues are noted below the summary table. A sector category labelled "General" was included to group together those documents addressing inter-sector issues.

Following the correspondence summaries is a bibliography of all summarized documents. Some correspondence pertains to more than one sector, and such documents have been listed under all pertinent sectors. The bibliography is arranged like the summaries, alphabetically by sector and alphabetically by inquirer within each sector. The electronic file name for each summary is also included on the inquirer heading for tracking purposes. Finally, each sector also contains a list of missing documents, i.e., documents that are referenced in the available correspondence but have not yet been located.

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SUMMARIES OF CORRESPONDENCE**ACTIVATED CLAY**

INQUIRER: Englehard Corporation (Harshaw/Filtrol Partnership)

SECTOR: Acid-Activated Clays (from bentonite ore)

WASTE STREAM(S): Waste acid

KEY WORD(S): Activated clay, bentonite, acid washing, acid dissolution, beneficiation definition

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
August 19, 1985	Letter from James Scarbrough, Chief, Residuals Waste Management Branch, Waste Management Division, EPA Region IV, to Jack McMillan, Director, Division of Solid/Hazardous Waste Management, Mississippi Department of Natural Resources	Determination that the waste acid generated by Harshaw/Filtrol Partnership falls within the current interpretation of the exemption of 40 CFR §261.4(b)(7). Under the current broad interpretation, bentonite clay is considered a mineral, and the waste acid is considered to be uniquely associated with the beneficiation process. EPA's efforts to narrow its interpretation of the mining waste exclusion could change the status of this waste.
August 23, 1985	Letter from Jack McMillan, Director, Division of Solid and Hazardous Waste, Mississippi Department of Natural Resources, to Andrew Kopas, Harshaw/Filtrol Partnership	Official notification to facility that Mississippi DNR concurs with EPA Region IV's 8/19/85 interpretation of the Exclusion and that the facility is removed from the Mississippi Hazardous Waste Regulatory Program.

DATE	DOCUMENT	SUBJECT
October 20, 1989	Letter from B.P. Mong, Englehard Corporation, to Steve Spengler, Mississippi Department of Environmental Quality, Bureau of Pollution Control	Cover letter for attached information on Englehard facility in Jackson, Mississippi. It is Englehard's position that operations conducted at the Jackson site are beneficiation operations and are, therefore, excluded from regulation.
October 23, 1989	Letter from Toby Cook, Hazardous Waste Division, Mississippi Department of Natural Resources, to Bob Tonetti, EPA Office of Solid Waste	Cover letter for attached information on Englehard facility. The clay activation process may not qualify as a beneficiation process or as an exempt mineral processing step. The pH of the liquid waste is below 2.0, with an annual quantity of 500,000 tons. It is disposed by deep well injection on site. The liquid is stored and clarified in a 26-acre surface impoundment prior to injection.
November 27, 1989	Memorandum from David Bauer and Bruce Rappaport, ICF Incorporated, to Bob Hall, EPA Office of Solid Waste	Review of information on Engelhard Corporation's Jackson, Mississippi activated clay plant. The beneficial properties of the product require that the majority of the original clay structure is not changed by the activation process. The information reviewed indicates that Engelhard's operations probably qualify as beneficiation operations, based on EPA's Mining Waste Exclusion; Final Rule (see 54 FR 36592, 36618-36619).

SUMMARY OF SIGNIFICANT ISSUES

Under the current broad interpretation, bentonite clay is considered a mineral, and the waste acid is considered to be uniquely associated with the beneficiation process. The acid (HCl or H_2SO_4) activation procedure for bentonite ore does not result in a destruction of the ore, such as occurs in titanium or phosphate processing, and as a result probably qualifies as a beneficiation operation.

ALUMINUM

INQUIRER: John Lehman, Director, Waste Management Division

SECTOR: Aluminum, lead, zinc and zinc oxide, ferroalloys, titanium metal, and titanium dioxide

WASTE STREAM(S): Wastes from primary nonferrous metal smelting and refining

KEY WORD(S): Characteristic hazardous waste, large volume, population, water supply

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
July 3, 1986	Memorandum from Frank Smith, Economic Analysis Staff to John Lehman, Waste Management Division	Memo addresses the question of whether the characteristic wastes produced by primary nonferrous metal smelting and refining plants are different in quantity and locational aspects from the characteristic wastes generated by other manufacturing sectors. On the basis of quantity of wastes generated, most S&R facilities generate larger quantities of characteristic wastes than a majority of facilities (but not the larger waste generators) in other sectors. The smelting and refining waste quantities, as sector totals, are well within the normal range of sector hazardous waste quantities for all manufacturing categories. S&R facilities are more rurally located, and the nearby water supply systems on average serve smaller populations.

SUMMARY OF SIGNIFICANT ISSUES

This memo does not directly address the Mining Waste Exclusion, but does delineate differences between the characteristic wastes produced by primary nonferrous metal smelting and refining plants, both in terms of quantity and location aspects, from the characteristic wastes generated by other manufacturing sectors.

INQUIRER: John H. Skinner, Director, Office of Solid Waste, U.S. EPA

SECTOR: Aluminum, copper, ferroalloy, lead, zinc

WASTE STREAM(S): Smelting and Refining Wastes

KEY WORD(S): Congressional intent, "plain meaning," "special waste" concept

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
August 1, 1983	Confidential memorandum from Margaret B. Silver, Solid Waste and Emergency Response Division, Office of General Counsel, U.S. EPA to John H. Skinner, Director, Office of Solid Waste, U.S. EPA	Review of applicability of §3001(b)(3)(A)(ii) of RCRA to smelting and refining wastes; prompted by petition for rulemaking to list certain aluminum smelter wastes as hazardous under §3001(b)(1). The memo analyzes the legal options available for interpreting §3001(b)(3)(A)(ii) and presents regulatory options for implementing the appropriate legal interpretations of the exclusion. The memo, however, does not make any recommendations for interpreting the section.
April 3, 1984	Memorandum from Margaret B. Silver, Office of General Counsel, U.S. EPA to John H. Skinner, Director, Office of Solid Waste, U.S. EPA	Reply to a 3/26/84 memorandum (missing from the files) asking for an evaluation of three interpretations of §3001(b)(3)(A)(ii). Memo discusses legislative intent of Mining Waste Exclusion with respect to the three interpretations.

SUMMARY OF SIGNIFICANT ISSUES

Several options for interpreting the exclusion vis-a-vis smelting and refining wastes were evaluated. Of the three interpretations, the interpretation that is most consistent with Congressional intent is that the Exclusion covers wastes from extraction and beneficiation, and certain large volume processing wastes, such as smelting slag and phosphogypsum.

BARIUM AND STRONTIUM CARBONATES

INQUIRER: Phil Bobel, EPA Region IX
SECTOR: Barium and Strontium Carbonates
WASTE STREAM(S): Solid wastes from black ash process
KEY WORD(S): Interpretation of Bevill Amendment

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
June 24, 1983	Letter from John P. Lehman, Director, Waste Management and Economics Division, to Phil Bobel, Chief, Toxics and Waste Programs Branch, Region IX	Response to April 27, 1983 letter (missing) requesting clarification of regulatory status under RCRA of the FMC facility in Region IX claiming exemption through the Mining Waste Exclusion. States that the solid wastes produced from the FMC black ash process for production of barium and strontium carbonates are currently excluded.

SUMMARY OF SIGNIFICANT ISSUES

At the present time, the solid wastes emanating from the Black Ash process are excluded by 40 CFR 261.4(b)(7) from regulation as hazardous wastes under Part 262 through 265 and 122 through 124 of 40 CFR.

BERYLLIUM

INQUIRER: Brush Wellman, Inc.

SECTOR: Beryllium Production Operations

WASTE STREAM(S): Beryl plant discard and raffinate discard (processing raffinate)

KEY WORD(S): Identical intermediate products, similar waste streams, only physical changes to the ore - nothing added or removed, beryl ore, bertandite ore

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
December 11, 1989	Memorandum from David Bauer, ICF Incorporated, to Bob Hall, EPA Office of Solid Waste	Cover letter for attached notes from 11/30/89 meeting with Brush Wellman. Brush Wellman presented arguments and supporting data to recommend that: a) sludge leaching slurry be listed as processing; b) beryl plant discard be listed as beneficiation; and c) raffinate discard (processing raffinate) be listed as beneficiation.
February 13, 1990	Memorandum from Peter Soyka and David Bauer, ICF Incorporated, to Bob Hall, EPA Office of Solid Waste	Cover letter for attached reviewed draft text describing evaluation methodologies for the 9/1/89 final rule. Included text addresses beryllium production wastes. EPA first believed that the bertandite ore process fits under the Agency's final definition of beneficiation. EPA determined, however, that the beryl ore circuit is a processing operation; its wastes, therefore, are subject to the high volume, low hazard Bevill criteria. Brush Wellman argued for both processes to be classified as beneficiation. Upon review of this material, EPA reversed its decision and classified both processes as beneficiation.

DATE	DOCUMENT	SUBJECT
March 15, 1990	Letter from Robert Tonetti, Acting Deputy Director, Waste Management Division, to Richard Davis, Brush Wellman, Inc.	Brush Wellman requested clarification of the Bevill status of each of the three wastes addressed in the September 1 final rule, and provided additional information on the nature of the beryllium production operations conducted at the Delta, Utah plant. Upon receipt of this new, detailed information, the Agency changed its position on the status of the wastes generated at the Delta, Utah facility.

SUMMARY OF SIGNIFICANT ISSUES

Beneficiation wastes tend to be earthen in character and often closely resemble the ore or mineral entering the beneficiation operation, while processing wastes are generally not earthen in character and are physically [and chemically] dissimilar to the ore or mineral that entered the processing operation. EPA concludes that all operations associated with the beryl and bertrandite ore circuits upstream of the iron hydrolysis step are beneficiation operations. The waste streams that are generated by these two production circuits, including beryl plant discard and processing raffinate, are mineral beneficiation wastes rather than processing wastes. Wastes generated downstream of the iron hydrolysis step, such as sludge leaching slurry, are considered low volume mineral processing wastes, and are removed from the Bevill Exclusion as of the effective date of the September 1, 1989, final rule.

CERAMIC TILE

INQUIRER: United States Ceramic Tile Company, East Sparta, Ohio
SECTOR: Ceramic Tile Manufacturing
WASTE STREAM(S): Process Wastewater
KEY WORD(S): Mining Waste Exclusion, hazardous characteristic for lead

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
October 14, 1986	Letter from Robert E. Schlemmer, President of U.S. Ceramic Tile, to Marsha Williams, Director of the Office of Solid and Hazardous Waste	States that U.S. Ceramic Tile has notified EPA that their wastewater discharge is hazardous because of the lead content. States that the Mining Waste Exclusion applies to their manufacturing process, and requests an interpretation of the rule as it applies to the process.

SUMMARY OF SIGNIFICANT ISSUES

Letter requests an interpretation of the Mining Waste Exclusion to clarify whether wastewater from ceramic tile manufacturing is included in the Exclusion based on the materials and methods used for processing. However, the applicability of the Mining Waste Exclusion to this waste is not clear; the process involves the blending of several minerals, including talc or soapstone, ball clay, pyrophyllite, and wollastonite into tile forms, coated with a glaze material, and fired in a kiln. No response from EPA is available.

CHROMIUM

INQUIRER: City of Baltimore, Department of Public Works, Patapsco Sewage Treatment Plant

SECTOR: Chromium

WASTE STREAM(S): Tailings from ore processing and waste from production of specialty chromium chemicals

KEY WORD(S): Listed and characteristic hazardous wastes, interpretation of Bevill Amendment, mixture rule

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
August 4, 1987	Letter from Francis Kuchta, Director, City of Baltimore, Department of Public Works, to James Seif, Regional Administrator, EPA Region III	Letter requests a determination that the solid chrome waste (i.e., wastes from chromium processing) on the site are covered in the exclusion.
August 11, 1987	Letter from Senator Paul Sarbanes to James Seif	Requests determination of the City's request for exclusion.
September 11, 1987	Letter from James Seif to Senator Sarbanes	Response to Senator Sarbanes thanking him for his letter and encloses the following letter sent to Francis Kuchta.

DATE	DOCUMENT	SUBJECT
September 11, 1987	Letter from James M. Seif, Administrator, EPA Region 3, to Francis W. Kuchta, Director, City of Baltimore Department of Public Works	Response to August 4, 1987 letter from Kuchta requesting an exemption from RCRA under the Bevill Amendment. States that responsibility for defining hazardous wastes and exclusions falls under Maryland's jurisdiction. Discusses pending law suit against EPA regarding its interpretation of the Bevill Amendment. States that more information on the "precise nature of the ore refining process that produced the tailings" is required before the Agency can produce a determination on the case. Requests that the city provide more information on ore processing wastes disposed of near the harbor, suggests that chrome-contaminated soils may not fall under the exclusion, and states that the city may want to handle the wastes as hazardous materials under generator status.
March 3, 1988	Letter from Martin W. Walsh, Jr., Maryland Secretary of the Environment, to Seif	States that Allied-Signal's Baltimore works have filed a petition seeking a determination that chromium wastes from their plant be excluded from RCRA regulation under the Bevill Amendment. States that based on guidance of EPA precedents and determinations involving similar facilities, the Maryland Department of the Environment believes that Allied is entitled to the exclusion. Enclosed Allied petition, dated February 5, 1988, strongly encourages that exclusion be granted.

DATE	DOCUMENT	SUBJECT
March 17, 1988	Seif's response to Walsh's March 3 letter.	States that an Agency determination was made that the wastes at Allied's Baltimore facility are not exempt because of the mixture rule. States that no decision has been reached on whether chromium wastes at the Patapsco Waste Water Treatment Plant are hazardous.
April 4, 1988	Memorandum from J. Winston Porter, EPA AA, and Francis Blake, General Counsel, to Seif and Bruce Diamond, EPA Region 3 Counsel. (FOIA cover from Bruce Diamond, April 19, 1988.)	Document contains attachment stating that Diamond has decided to waive the litigation confidentiality claim on the memorandum and authorize its release to the public. Memorandum concerns issues raised by Seif and Diamond in a September 18, 1987 memo regarding applicability of the Bevill Amendment to wastes at Allied's Baltimore plant. States that wastes in Allied's Specialty Chemical plants are not subject to Bevill exclusion and that waste mixtures containing listed or characteristic wastes are themselves hazardous.
October 11, 1988	Letter from Amy Edwards, Frank, Bernstein, Conaway and Goldman, to Jaralene Green, Freedom of Information Officer	Requests copies of all documents relating to the potential applicability of the Bevill Amendment to the Maryland Patapsco Sewage Treatment Plant.
November 22, 1988	Letter from Lisa Friedman, Associate General Counsel, to Amy Edwards	Responds to Edwards' letter and refers to all copies of documents from the Office of General Counsel files. Notes that the OSWER will send separate response.
	APPENDIX Summary of Analyses Chromium and Other Metals City of Baltimore, Patapsco WWTP Site	Includes data on the chromium content of Patapsco WWTP, metals content, and well water levels.

SUMMARY OF SIGNIFICANT ISSUE:

The City of Baltimore, while excavating soil for the construction of new facilities for the its Patapsco wastewater treatment plant, discovered soil containing varying concentrations of chromium derived from disposed tailings from the processing of chromium ore at the Allied-Signal chromium refinery on Baltimore's Inner Harbor. Documents request a determination of whether wastes generated by Allied's Baltimore chromium operations are hazardous and/or excluded under the Bevill Amendment. Documents also address a relationship between the regulatory treatment of Allied's chromium wastes and the regulatory treatment of chromium wastes located at the Patapsco Waste Water facility. The final memorandum from EPA provides a determination that (1) wastes from Allied's specialty chemical plant are not covered by the Bevill Exclusion and (2) that wastes resulting from the mixing of the listed hazardous waste with either exempt (i.e., Bevill) or non-exempt wastes would be a hazardous waste under RCRA Subtitle C.

INQUIRER: Michael Schuit

SECTOR: Chromium

WASTE STREAM(S): Wastes from roasting and leaching of chromite ore

KEY WORD(S): E.P. toxicity, characteristic waste, mixture rule, delisted waste

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
December 4, 1897	Letter from Michael Schuit, Regulatory Officer, Department of Environmental Protection, State of New Jersey, to Dan Derkics, Chief, Large Volume Waste Section, OSW, U.S. EPA	Requests that Derkics confirm in writing OSW's determination that chromate production waste is a Bevill Waste and therefore excluded from regulation under RCRA. Briefly describes soluble chromate production process. States that the Department intends to proceed with the understanding that chromate production wastes are excluded.
March 8, 1988	Letter from Derkics in response to Schuit	Confirms that wastes generated by extraction of chromium from chromite ore are excluded from Subtitle C regulation until studied, but that coverage is limited to the initial steps of the process of producing chromium chemicals (wastes generated during the roasting and leaching steps are excluded but wastes from the processing of the leachate solution are not excluded). Contains excerpts from a recent case involving a similar operation that pertain to the handling of the chromate production wastes.

SUMMARY OF SIGNIFICANT ISSUES

EPA provides an interpretation of the Bevill Amendment as it applies to solid wastes from the processing of chromium ore. Specifically, EPA concluded that wastes generated by the extraction of chromium (i.e., roasting and leaching) from chromium ore would be excluded from Subtitle C regulation until studied. Any wastes generated from processing of solution created in the leaching step, however, would be subject to regulation under Subtitle C if they exhibit one or more characteristic of hazardous waste.

COAL GASIFICATION

INQUIRER: American Natural Gas/Dakota Gasification Company

SECTOR: Coal Gasification

WASTE STREAM(S): Coal gasification wastes

KEY WORD(S): Utility waste exclusion, gasifier ash, water management system

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
March 15, 1979	Letter from Gary N. Weinreich, P.E., Manager-Environmental Affairs, Synthetic Fuels, American Natural Service Company, to John P. Lehman, Director, Office of Solid Waste, U.S. EPA	ANG Coal Gasification Company, a subsidiary of American Natural Service Company, submitted comments on hazardous waste guidelines vis-a-vis their planned coal gasification plant. ANG argued that its waste would be arbitrarily categorized as hazardous. ANG proposed that the regulations be modified to include a more realistic means of determining if a waste is potentially hazardous, preferably developed by the States on a site-specific basis. ANG also contends that the regulations overlook gasifier ash, a coal ash covered by the special waste category of Utility Waste. Even with the designation of gasifier ash as a special waste, ANG foresees many problems with the proposed regulations applicable to these categories.
April 5, 1979	Letter from Gary N. Weinreich, P.E., Manager-Environmental Affairs, Synthetic Fuels, American Natural Service Company, to John P. Lehman, Director, Office of Solid Waste, U.S. EPA	Additional comments on the hazardous waste regulations. ANG requested a meeting with EPA to discuss the classification of gasifier ash as utility waste.

DATE	DOCUMENT	SUBJECT
April 17, 1979	Letter from Gary N. Weinreich, P.E., Manager-Environmental Affairs, Synthetic Fuels, American Natural Service Company, to Larry Weiner, Office of Solid Waste, U.S. EPA	ANG agrees to work with EPA to determine if coal gasification wastes qualify for special Utility Waste categorization.
August 1, 1985	Letter from D.L. Imler, Vice President, Operations and Coal Resources, Great Plains Gasification Associates, to Lawrence A. Wapensky, Chief, RCRA Permit Section, U.S. EPA Region VIII	Response to letter from R.L. Duprey and M.R. Schock, U.S. EPA Region VIII to G.N. Weinreich, ANG, dated April 25, 1985 (missing from file). Provides attached report identifying solid waste management units at the Great Plains Gasification Associates facility in Beulah, North Dakota.
June 10, 1986	Letter from Martin Schock, Division of Hazardous Waste Management and Special Studies, North Dakota State Department of Health, to Robert Duprey, Waste Management Division, U.S. EPA Region VIII	Requests clarification on whether sluice water from ANG's ash sluice system is hazardous. States that plant's Liquid Waste Incinerator (LWI) waste feed and the LWI blow down show EP toxicity for arsenic and selenium. Blow down water from the LWI is used as makeup water for the ash sluice system. Contains analytical data and plant diagram. (Attachments 1, 4, 5, 6, and 7 to this letter are missing).

DATE	DOCUMENT	SUBJECT
August 22, 1986	Letter from Robert Duprey, Waste Management Division, U.S. EPA, Region VIII, to Martin Schock, Division of Environmental Waste Management and Research, North Dakota State Department of Health	Responds to Schock's 8/13/86 letter. (This letter is missing from the files.) States that the ash that is generated and disposed of at ANG is not considered a hazardous waste. States that NDSDH data show that ash sluice water exhibits corrosivity and EP toxicity for arsenic and selenium. EPA determined that this water is not subject to hazardous waste regulations on the basis of corrosivity because it acquired the characteristic of corrosivity by contacting an excluded waste. EPA was not aware at the time of the determination that ash sluice water also exhibited the characteristic of EP toxicity for arsenic and selenium. ANG has not demonstrated that this characteristic is the result of contact with an excluded waste. States that the dewatering units are not functioning properly, and that as a result, the ash sluice water ending up in the ash disposal site and the surface impoundment is hazardous and should be regulated as such.
October 27, 1986	Letter from Martin Schock, Division of Hazardous Waste Management and Special Studies, North Dakota State Department of Health, to Gary N. Weinreich, P.E., Environmental and Safety Manager, ANG Coal Gasification Facility	Presents summary of points of meeting held 10/16/86 involving Department of Health staff, ANG staff, and an EPA representative. Also, states that the Department recommends that an ash evaporation pond be closed and that an ash waste pile be removed. Includes a permit process flowchart and an ANG hazardous waste management checklist.

DATE	DOCUMENT	SUBJECT
October 28, 1986	Letter from Gary N. Weinreich, P.E., Environmental and Safety Manager, ANG Coal Gasification Company, to Martin R. Schock, Division of Hazardous Waste Management and Special Studies, North Dakota State Department of Health	Contents that the fossil fuel exemption, which includes coal gasification wastes, is applicable to all wastes generated at the ANG facility, not just gasifier ash. Refers to an attached interpretive memorandum prepared by U.S. EPA Deputy Administrators for Water Enforcement and Solid Waste noting that cooling tower blowdown and other co-disposed wastes would be excluded from hazardous waste regulation. (This memorandum was not attached to the letter.)
November 10, 1986	Letter from Gene A. Christianson, Environmental Health Section, North Dakota State Department of Health, to Marcia Williams, Director, Office of Solid Waste, U.S. EPA	Forwards an ANG request for exemption of certain wastes generated by the ANG plant from RCRA and State hazardous waste requirements.
December 10, 1986	Letter from Marcia E. Williams, Director, Office of Solid Waste, U.S. EPA, to Gene A. Christianson, Environmental Health Section, North Dakota State Department of Health	Response to 11/10/86 letter. EPA arranged a meeting with ANG for 12/15/86 to obtain information needed to determine the proper regulatory status of cooling tower blowdown.
December 23, 1986	Letter from Gary N. Weinreich, P.E., Environmental and Safety Manager, ANG Coal Gasification Company, to Truett V. DeGearre, Jr., Supervisory Sanitary Engineer, Office of Solid Waste, U.S. EPA	Express thanks for EPA/ANG meeting of 12/15/86.

DATE	DOCUMENT	SUBJECT
May 1, 1987	Memorandum from Robert L. Duprey, Director, Waste Management Division, U.S. EPA Region VIII, to Marcia Williams, Director, Office of Solid Waste, U.S. EPA	Presents rationale for conclusions concerning portions of the waste streams and management practices of the ANG facility that come under the Bevill Exclusion and those that do not. (References final draft report prepared by Planning Resource Consultants on the facility's process and waste streams. This report was transmitted to Truett DeGearre of the Office of Solid Waste on March 26, 1987. References memorandum from Michael Hannigan to Lawrence Wapensky dated July 15, 1986. The report and memorandum are missing from the file.)
May 13, 1987	Letter from G.N. Weinreich, P.E., Environmental and Safety Manager, American ANG Coal Gasification Company, to Ms. Marcia Williams, Director, Office of Solid Waste, U.S. EPA	Letter supports ANG's contention that its entire coal gasification plant operation should receive exclusion from RCRA regulations. Provides description of individual waste streams and general plant pollution control strategies. States that ANG will continue to pursue exclusion from RCRA because it is in the process of being transferred from DOE control to private hands, and RCRA regulation might impose economic burdens on the operation.

DATE	DOCUMENT	SUBJECT
June 17, 1987	Memorandum from Robert L. Duprey, Director, Waste Management Division, U.S. EPA Region VIII, to Marcia Williams, Director, Office of Solid Waste, U.S. EPA	Contains Mr. Duprey's comments in support of denying ANG's request for a facility-wide RCRA exemption. States that all waste processes at ANG are unique and therefore should be evaluated separately. States that wastes from chemical producing processes should not be excluded. (References draft memorandum from Office of Solid Waste to U.S. EPA Region VIII dated May 29, 1987 that is missing from the file.)
July 20, 1987	Letter from Quentin N. Burdick, Chairman, Senate Committee on Environment and Public Works, to Lee Thomas, Administrator, U.S. EPA	Requested EPA and DOE to collaborate on a research and development project at ANG. Chairman Burdick contended that the project involved microbial destruction of hazardous wastes that could have applications for Superfund.
September 15, 1987	Memorandum from Marcia Williams, Director, Office of Solid Waste, U.S. EPA, to Robert Duprey, U.S. EPA Region VIII Waste Management Division	States that EPA agrees that the Mining Waste Exclusion applies to the coal gasification process. Also states that EPA believes that wastes from operations constituting treatment of mining wastes and cooling tower blowdown and related waste are also exempt. Lists all components of the facility which EPA feels are excluded from regulation. EPA recognizes that ANG is essentially a Bevill facility producing Bevill wastes which are excluded from Subtitle C regulation, with two exceptions, which are described.

DATE	DOCUMENT	SUBJECT
March 21, 1989	Letter from A.C. Lukes, Plant Manager by Danny R. Guminski, P.E. Environmental Manager, Dakota Gasification Company, Great Plains Gasification Plant, to Mr. David Bussard, Acting Director, Office of Solid Waste, Waste Management Division, U.S. EPA	Response to a letter from David Bussard dated March 6, 1989 (missing from file). Presents chemical and physical data regarding wastes generated at the Great Plains Gasification project.
November 3, 1989	Letter from Martin Schock, Director, Division of Waste Management, North Dakota State Department of Health and Consolidated Laboratories, to U.S. EPA RCRA Docket Information Center	Requests full and complete copies of all Docket information pertaining to EPA evaluation of coal gasification wastes under Bevill exclusions. The NDSDH believes that its regulations and experience provide for adequate control of ANG's wastes, that removal of these wastes from Bevill exclusion will cause unnecessary regulatory complications, and urges EPA to re-evaluate its proposed removal of ANG's process wastewater from Bevill exclusion.

DATE	DOCUMENT	SUBJECT
November 9, 1989	Memorandum from Dan Derkics, Chief, Large Volume Waste Section, Office of Solid Waste and Emergency Response, U.S. EPA, to Mining Waste Docket No. F-89-MW2P-FFFFF	Summarizes major topics of discussion at a meeting between representatives of EPA's Office of Solid Waste and Office of General Counsel and representatives of Dakota Gasification Corporation (DGC). DGC raised two principal points during the meeting: (1) EPA's classification of process wastewater as a low volume waste was inappropriate, perhaps because the response DGC provided to EPA's mineral processing waste survey may have been misleading with respect to the volume of process wastewater generated; and (2) operations at the DGC facility appear to be significantly different than the type of operations that EPA's definition of solid waste and the Subtitle C program were designed to address. DGC also provided a brief summary of the history of the development of the facility and an overview of plant operations and waste generation.
August 12, 1991	Letter from Kent E. Janssen, Vice President and Chief Operating Officer, Dakota Gasification Company, to Robert Tonetti and Bob Hall, Special Waste Branch, Office of Solid Waste, U.S. EPA	Summarizes the application of Bevill Amendment to Dakota Gasification Company (DGC) and contains technical information and legal arguments to support the applicability of the Bevill Utility Waste Exclusion to DGC's water management system. Also states that DGC believes that the Bevill Utility Waste Exclusion clearly applies to the gasifier ash and the stripped gas liquor which traditionally has been used, reused, and co-managed with the ash. DGC memorandum describing Lurgi gasification and flue gas scrubbing attached.

DATE	DOCUMENT	SUBJECT
Date Unknown	Briefing presented to EPA Special Waste Section on the applicability of the Mining/Utility Waste Exclusion to the Great Plains Gasification Project (ANG)	Provides overview of the Great Plains Project, recommended options for future regulation, and benefits of applying special waste exclusion to Great Plains.
Date Unknown	Testimony of Patricia L. Brooks, American Natural Services Company	Testimony on effects of hazardous waste regulations on ANG coal gasification facility. Reiterates issues of 3/15/79 letter from Gary N. Weinreich to John P. Lehman.

SUMMARY OF SIGNIFICANT ISSUES

One major issue is that ANG is the only coal gasification plant of its kind. Therefore, EPA has limited data on coal gasification wastes. ANG emphasized the need for a more site-specific determination of whether or not a waste is hazardous. Recently, ANG argued that wastes from its gasification operations and its water management system should be excluded from Subtitle C requirements by the Bevill Amendment Utility Waste Exclusion and objected to EPA's intention to overrule previous conclusions concerning the status of some of ANG's wastes through the mineral processing rulemaking.

INQUIRER: Combustion Engineering, Inc.
SECTOR: Coal Qualification
WASTE STREAM(S): Waste coal and char
KEY WORD(S): Waste coal, char, coal qualification

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
April 2, 1981	Letter from Richard Boynton, Chief, Permits Development Section, U.S. EPA, Region I, to Stewart Roll, Esq., Combustion Engineering, Inc.	Response to request (missing from file) for exclusion of waste coal and char from a coal qualification process. Letter states that waste coal and char have been temporarily excluded if they meet the broad definition given to "extraction, beneficiation, and processing."

SUMMARY OF SIGNIFICANT ISSUES

The waste material from coal qualification, waste coal and char, as of April 2, 1981, was temporarily excluded from regulation by the Mining Waste Exclusion if it fell into the category of solid waste from coal exploration, mining, cleaning, gasification, and other processing activities. Further clarification of the Exclusion was expected. After the clarification, the waste could potentially become fully regulated.

INQUIRER: Paul Emler, Jr., Chairman, Utility Solid Waste Activities Group, Washington, D.C.

SECTOR: Utilities, coal gasification

WASTE STREAM(S): Fossil fuel combustion wastes

KEY WORD(S): Fossil fuel combustion, fifty percent rule, co-disposed, co-treated, necessarily associated with energy production

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
January 13, 1981	Letter from Gary N. Dietrich, Associate Deputy Assistant Administrator for Solid Waste, U.S. EPA, to Paul Emler, Jr., Chairman, Utility Solid Waste Activities Group	Response to letter of October 10, 1980 to Administrator Costle regarding the Solid Waste Disposal Act Amendments of 1980 and their relation to the electric utility industry (letter missing from file). Provides interpretation of the fossil fuel combustion waste exclusion in 40 CFR 261.4(b)(4) stating that "fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels," are not hazardous wastes.

SUMMARY OF SIGNIFICANT ISSUES

Pending completion of further studies, EPA interprets 40 CFR 261.4 (b)(4) (fossil fuel combustion waste exclusion) to include: (1) fly ash, bottom ash, boiler slag, and flue gas emission control wastes resulting from (a) the combustion solely of coal, oil, or natural gas, (b) the combustion of any mixture of these fossil fuels, or (c) the combustion of any mixture of coal and other fuels, up to a 50 percent mixture of such other fuels; and (2) wastes produced in conjunction with the combustion of fossil fuels, which are necessarily associated with the production of energy, and which traditionally have been, and which actually are, mixed with and co-disposed or co-treated with fly ash, bottom ash, boiler slag, or flue gas emission control waste from coal combustion.

INQUIRER: Dexter Hinckley, Office of Solid Waste, U.S. EPA
SECTOR: Coal Gasification
WASTE STREAM(S): Coal tar
KEY WORD(S): Coal tar, coal preparation, coal processing, secondary processes

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
February 15, 1985	Letter from Gregory Vogel, The MITRE Corporation, to Dexter Hinckley, Office of Solid Waste, U.S. EPA	Letter responds to inquiry about coal tar (missing from file). States that it is possible to determine the source of a tar from its chemical composition, and gives several examples. Recommends that all the wastes generated by processes that prepare coal for use as well as processes such as coal gasification and liquefaction, MHD, and synthetic fuel production be studied under Section 8002(f) of RCRA. States that wastes from secondary processes should not be studied.

SUMMARY OF SIGNIFICANT ISSUES

Document concerns technical information about coal tar wastes.

INQUIRER: William Taylor, MacFarlane, Ferguson, Allison & Kelly
 SECTOR: Coal Gasification
 WASTE STREAM(S): Coal tar
 KEY WORD(S): Gasification, mixture, tar, gas clean-up

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
November 20, 1984	Letter from William Taylor, MacFarlane, Ferguson, Allison & Kelly, to John Lehman, Director, Waste Management and Economics Division, Office of Solid Waste, U.S. EPA	Requests written opinion concerning whether coal tar wastes from the processing of coal in the production of gas is an excluded waste.
Date Unknown	Letter from John Lehman, Director, Waste Management and Economics Division, Office of Solid Waste, U.S. EPA to William Taylor, MacFarlane, Ferguson, Allison & Kelly	States that coal tar wastes in question are excluded if they represent a mixture of coal ash, heavy tars, and other wastes from coal gasification, but they would not be exempt if they are only light tars from gas clean-up. the coal gasification wastes are subject to the Subtitle D regulations of RCRA and can be regulated under other Federal laws or under state laws. EPA is planning to propose a reinterpretation of the Mining Waste Exclusion that would narrow its scope. The status of coal gasification wastes could change following this reinterpretation.

SUMMARY OF SIGNIFICANT ISSUES

The wastes are excluded if they represent a mixture of coal ash, heavy tars, and other wastes from coal gasification, but they would not be exempt if they are only light tars from gas clean-up. the coal gasification wastes are subject to the Subtitle D regulations of RCRA and can be regulated under other Federal laws.

INQUIRER: Union Gas Company
 SECTOR: Coal Gasification
 WASTE STREAM(S): Coal gasifier ash, tar waste
 KEY WORD(S): Uniquely associated, gasifier ash, tar waste

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
January 21, 1981	Letter from Alfred W. Lindsey, Deputy Director, Hazardous and Industrial Waste Division, Office of Solid Waste, U.S. EPA, to Terry Thoem, U.S. EPA Region VIII	States that the Mining Waste Exclusion applies to retorting of shale and to gasification and liquefaction of coal and to the waste produced during these operations. Adds that the Exclusion does not apply to wastes produced in any operations that are not associated with processing the coal or shale or to wastes that are not unique to synfuels operations.
February 22, 1984	Affidavit by A.W. Lindsey, Deputy Director of the Waste Management and Economics Division, Office of Solid Waste, U.S. EPA, in United States versus Union Gas Company and the Borough of Stroudsburg, PA	Regarding the affidavits of Peter Luckie, Ph.D., and James Mulvihill, ash generated from the unit operation that converted the coal to gas and ash falls under the Mining Waste Exclusion. Liquid tar waste produced when the gas is upgraded, cleaned, and converted does not fall under the Exclusion because, in this case, the gas and not the mineral coal is converted.

SUMMARY OF SIGNIFICANT ISSUES

Ash from coal gasification is excluded because it is a waste generated during the initial processing of the coal. Coal tar, because it is generated while upgrading the gas, is not excluded. The Mining Waste Exclusion also applies to retorting of shale. The Exclusion does not apply to processes that are not associated with processing the coal or shale or to wastes that are not unique to synfuels operations.

INQUIRER: Stearns-Roger Division, United Engineers & Constructors

SECTOR: Underground Coal Gasification

WASTE STREAM(S): Oil or fouled filter media, sludge containing heavy metal salts, spent carbon containing organics and metals

KEY WORD(S): Underground Coal Gasification (UCG), in-situ coal gasification, coal processing, coal mining

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
November 3, 1987	Letter from M. H. Vardaman, Project Manager, Stearns-Roger Division, United Engineers & Constructors, to Robert L. Duprey, Director, Air and Waste Management Division, U.S. EPA Region VIII	Requests interpretation (by Nov. 27, 1987) concerning whether wastes generated from the treatment of groundwater from a UCG test burn are excluded from RCRA regulation under Bevill. Ground-water treatment will generate (1) oil or fouled filter media, (2) sludge containing heavy metal salts, and (3) spent carbon containing organics and metals.
November 9, 1987	Letter from Roger Shaffer, Administrator, Land Quality Division, Wyoming Department of Environmental Quality, to Robert L. Duprey, Director, Air and Waste Management Division, U.S. EPA Region VIII	Poses general questions concerning EPA's authority at coal mining/processing operations, and potential company liability related to UCG or coal mining. Questions whether EPA authority would apply at some point, for example, (1) when another chemical product, such as fertilizers, are produced or (2) a CERCLA-type situation. Mentions reviewing proposal for coal processing plant. The UCG test burn for the plant will try new methods of groundwater cleanup. Unsuccessful aquifer restoration attempts after UCG tests could leave local areas of groundwater and soil contaminated.

DATE	DOCUMENT	SUBJECT
February 5, 1988	Letter from M. H. Vardaman, Project Manager, Stearns-Roger Division, United Engineers & Constructors, to Robert L. Duprey, Director, Air and Waste Management Division, U.S. EPA Region VIII	Writing to confirm that the waste materials generated during groundwater cleanup will fall under the RCRA Mining Waste Exemption since no response to the Nov. 3, 1987 letter concerning UCG test exemption was received. Reaffirms that they will continue to work with state agencies to determine suitable methods of project waste disposal.
February 16, 1988	Letter from Robert L. Duprey, Director, Air and Waste Management Division, U.S. EPA Region VIII to Jeff Denit, Acting Director, Office of Solid Waste and Emergency Response, U.S. EPA	Requests response to questions posed in letters from United Engineers & Constructors

SUMMARY OF SIGNIFICANT ISSUES

EPA Region VIII requested assistance from the Office of Solid Waste and Emergency Response in determining whether wastes generated by an underground coal gasification (UCG) test burn, specifically, wastes generated from the treatment of groundwater contaminated by the UCG process are covered by the Bevill exclusion. The Wyoming Department of Environmental Quality also posed general questions concerning EPA's authority and potential company liability. No response from the Office of Solid Waste and Emergency Response is included in the file.

COAL MINING

INQUIRER: Robert L. Duprey, Director, Air and Hazardous Materials Division, U.S. EPA Region VIII

SECTOR: Coal mining, phosphate rock, uranium ore, crude oil, natural gas, geothermal

WASTE STREAM(S): Mining and drilling wastes associated with the above sectors

KEY WORD(S): SMCRA, Solid Waste Disposal Act Amendments of 1980, mining waste

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
October 23, 1980	Memorandum from Robert Duprey, Director, Air and Hazardous Materials Division, U.S. EPA Region VIII, to Steffen Plehn, Deputy Assistant Administrator, U.S. EPA	Contains Region VIII's interpretations of the Solid Waste Disposal Act Amendments of 1980 as they relate to the coal mining, phosphate rock, uranium ore, crude oil, natural gas, and geothermal industry sectors, all of which are represented in Region VIII. Requests that Plehn's staff review the interpretations and make comments.

SUMMARY OF SIGNIFICANT ISSUES

Discusses the integration of RCRA regulations with SMCRA regulations, and the impact on storage, treatment, and disposal of hazardous mine waste by coal mining facilities. States that Region VIII's interpretation of terms "solid waste" and "mine waste" does not include spent chemical products listed in 40 CFR Part 261.33 (e) and (f) or solvents that are classified as hazardous wastes because they exhibit one of the four criteria of a hazardous waste. Discusses Region VIII's interpretation of suspension of regulation of wastes associated with the exploration, development, or production of crude oil, natural gas, or geothermal energy for at least 24 months.

INQUIRER: National Coal Association and American Mining Congress

SECTOR: Coal Mining

WASTE STREAM(S): Noncoal mine wastes

KEY WORD(S): Noncoal mine wastes, SMCRA

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
March 26, 1985	Memorandum from Mark Greenwood, Assistant General Counsel for RCRA, Solid Waste & Emergency Response Division, Office of General Counsel, U.S. EPA to John H. Skinner, Director, Office of Solid Waste, U.S. EPA	Discusses the National Coal Association and American Mining Congress's opposition to include a provision in SMCRA regulations stating that noncoal mine wastes defined as hazardous under Section 3001 of RCRA shall be handled in accordance with Subtitle C requirements. States that there is a possibility that the disputed language could be deleted, and a settlement agreement would state that the deletion does not affect applicability (or nonapplicability) of RCRA to noncoal mine wastes. Presents mining industry's argument that RCRA provisions dealing with coal mining waste and overburden apply to all wastes generated at the mine site as supported by legislative history and floor debate. Offers counterargument that language in RCRA referring to "coal mining wastes and overburden" does not include noncoal mining wastes; thus, general provisions of RCRA do apply to noncoal mine waste. Suggests a meeting to establish EPA position on noncoal mine waste issue in order to convey views to Department of Justice before issue is argued.

DATE	DOCUMENT	SUBJECT
April 2, 1985	Memorandum from John P. Lehman, Director, Waste Management and Economics Division, U.S. EPA, to John H. Skinner, Director, Office of Solid Waste, U.S. EPA	Recommends that EPA strongly assert EPA's jurisdiction over noncoal hazardous waste at coal mining sites. Cites two advantages of this position: 1) compatible with the SMCRA legislative history language on coal mining wastes as documented in OGC's memo; and 2) asserting jurisdiction over noncoal hazardous wastes at coal mining sites supports EPA policy of not exempting nonindigenous wastes at other sites (metal mining, oil and gas production) with hazardous wastes exempted under 3001 (C)(b)(3)(A). Disadvantage of this position is that EPA is not prepared to assume immediate responsibility for permitting noncoal hazardous waste management at coal mining sites. (References memorandum from Mike Barclay to Penny Hansen dated July 29, 1981. Memorandum is missing from the file.)

SUMMARY OF SIGNIFICANT ISSUES

Argues that EPA's position should support the applicability of RCRA to noncoal mine wastes despite opposing arguments by the National Coal Association and the American Mining Congress.

COPPER

INQUIRER: Asarco

SECTOR: Extraction of Arsenic and/or Cadmium from Flue Dust

WASTE STREAM(S): Wastes from the extraction of arsenic and/or cadmium from flue dust

KEY WORD(S): Superfund, remedial action program

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
May 16, 1985	Letter from John H. Skinner, Director, EPA Office of Solid Waste, to Harry Seraydarian, Chief, Toxics and Waste Management Division, EPA Region IX	[Included with this sector because referenced in April 22, 1987 letter from A. Babich, EPA, to Meg Silver, EPA OGC.] Addresses questions regarding applicability of Mining Waste Exclusion to leachate from pyritic cinders and fragmented slag, which are excluded wastes. States that the leachate is within the Exclusion because it is derived from excluded wastes. Also states that until the reinterpretation of the Exclusion, the sludges from the impoundment should be managed prudently.

DATE	DOCUMENT	SUBJECT
December 5, 1986	Affidavit before the Colorado Department of Health in the matter of Asarco, Incorporated Globe Plant	Outlines factual information concerning the plant in Denver, Colorado and the Asarco Corporation. States that Asarco has no interim status, no permit, and has not determined whether a permit is necessary for the treatment, storage, and disposal of hazardous wastes at the plant. Wastes in Asarco's surface impoundment and in the unlined interceptor trench exhibit EP Toxicity and are contaminating the ground water and soils. Spent pigment solution and spent sponge solution are stored in tanks and possess the characteristic of EP Toxicity. Asarco generates and stores other wastes that exhibit hazardous characteristics without complying with Federal and State regulations. States that wastes at the Globe Plant that exhibit hazardous characteristics are subject to regulation as hazardous wastes. States that Asarco has violated several provisions, including disposal without a permit, storage without a permit, treatment without a permit, failure to file a notification of hazardous waste activity, failure to determine whether wastes are hazardous, and failure to comply with financial requirements. Requires Asarco to submit a notification, an application, a plan for coming into compliance, and to implement the compliance plan. Imposes penalties of \$25,000 per day for violations. Cites several attached documents.

DATE	DOCUMENT	SUBJECT
March 30, 1987	Memorandum of Agreement between the State of Colorado and Asarco Incorporated	Outlines legal stipulations for the Memorandum. Parties agree to commit all technical and legal resources necessary for Asarco to accomplish the remedial action program at the Globe Plant site at Asarco's cost, including schedules, contingencies and triggers, and remedial, monitoring, and data collection activities. The program (to be monitored for effectiveness) will include: removal of contaminated soils from the Industrial Drainage Ditch to a level which provides protection of the public health; remedial actions for onsite and offsite contaminated soils and ground water; a Health Monitoring Program; resolution of the need for remedial actions to prevent contamination of the South Platte River. Memorandum details the cost allocation for the clean up as agreed upon by Colorado and Asarco.
April 1, 1987	Compliance Order Upon Consent	Final compliance order upon consent states that Asarco shall manage the materials from the neutralization pond area. Wastes resulting from the processes at the Globe Plant are subject to regulation as hazardous wastes (order limits the definition) unless specifically excluded from regulation as hazardous waste. The Department grants an exclusion from classification as solid waste to the wastes described in the Appendix, namely thallous sulfide, thallium iodide, and cadmium oxide residue, subject to enumerated conditions.

DATE	DOCUMENT	SUBJECT
January 20, 1987	Letter from Adam Babich, Assistant Attorney General, to Meg Silver, Esq., EPA Office of General Counsel	Introduces enclosed affidavit. Requests that clean copies be substituted.
April 22, 1987	Letter from Adam Babich, Assistant Attorney General, CERCLA Litigation Section to Meg Silver, Office of General Counsel	Letter accompanying Compliance Order upon Consent settling litigation for Asarco for refining cadmium from flue dust.

SUMMARY OF SIGNIFICANT ISSUES

Addresses Asarco's violations, including disposal, storage, and treatment without a permit, failure to file a notification of hazardous waste activity, failure to determine whether wastes are hazardous, and failure to comply with financial requirements. Penalties and requirements for compliance include submission of a notification, an application, and a plan that must be implemented for coming into compliance. The penalty assessed imposes fines of \$25,000 per day. "There is a strong precedent that wastes derived from further processing of Bevill wastes are not excluded from [Subtitle C] regulation."

INQUIRER: Hecla Mining Company (Davis, Graham & Stubbs)

SECTOR: Copper, sodium germanate, and gallium

WASTE STREAM(S): Tailings pond

KEY WORD(S): Beneficiation definition, leaching, solvent extraction, eletrowinning, precipitation

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
May 8, 1990	Letter from Davis, Graham, & Stubbs, Attorneys for Hecla Mining Company, to Mr. Terry Anderson, EPA Region VIII.	Regarding Hecla Mining Company, Apex Facility near St. George, Utah. The following activities occur at the facility: grinding, washing, sorting, filtration, solvent extraction, electrowinning, and precipitation. Hecla concludes these constitute beneficiation based on EPA's 1/23/90 final rule. Most focus is on the leaching operation, which Hecla claims generates a solid waste stream earthen in character and physically and chemically similar to the ore that enters the operation.

SUMMARY OF SIGNIFICANT ISSUES

Status of leaching process is in question. Cites previous EPA language that suggests it regards leaching as beneficiation process. For example, EPA noted in the 9/1/90 final rule that "the RTC explicitly includes leaching operations as an integral part of the extraction and beneficiation domain. . . ." - 54 FR 36618. Other cites included.

INQUIRER: Inspiration Consolidated Copper Company, Claypool, Arizona
 SECTOR: Copper
 WASTE STREAM(S): F006 copper sludge smelter slag, ore smelter slag
 KEY WORD(S): Ore processing waste, indigenous waste

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
August 1, 1986	Letter from G. Van Velsor Wolf Jr., Lewis and Roca Lawyers, to Meg Silver, EPA, Office of the General Counsel	Letter to verify that the Mining Waste Exclusion will remain in effect after September 30, 1986. Also, requests clarification on the status of Inspiration's recyclable material regarding the Mining Waste Exclusion. States that Inspiration does not store the recyclable material prior to recycling.
August 29, 1986	Letter from G. Van Velsor Wolf Jr., Lewis and Roca Lawyers, to Steve Silverman, EPA, Office of the General Counsel	Confirms the following: that Inspiration accepts F006 copper sludge for recycling in its smelter; that Inspiration does not store copper sludge; and that there are two ways to conclude that the combined ore/sludge slag is not hazardous (i.e., the whole waste is exempt as waste from the processing of ore and the waste is "indigenous" waste exempt pursuant footnote 4 of 50 Fed. Reg. 49167.

SUMMARY OF SIGNIFICANT ISSUES

There are two ways to determine if copper sludge slag is a hazardous waste. First, since the slag is primarily from the ore, the whole waste is exempt as waste from the processing of ore. Second, if the waste is "indigenous" waste, it is exempt from regulations under Subtitle C of RCRA.

INQUIRER: Kennecott Minerals Company, Salt Lake City, Utah

SECTOR: Primary Copper Smelting and Refining

WASTE STREAM(S): Spent acids and refinery dross from electrolytic refining

KEY WORDS: Refining definition, anode/cathode copper, uniquely associated, mixture rule

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	REQUEST/DECISION
August 19, 1981	Letter from Dale Parker, Utah State Dept. of Health, to Henry Schroeder, EPA Region VIII	Requests EPA decision on Mining Waste Exclusion status of spent acids and refinery dross (residual sludge remaining after copper and precious metals are refined out of anodes). Series of status questions.
September 25, 1981	Letter from Lawrence Wapensky, EPA Region VIII, to Dale Parker, Utah State Dept. of Health	Response: Neither exempt; both are regulated hazardous wastes if they exhibit a hazardous characteristic. Sludge is not excluded because refined material is product that is almost pure copper, similar to other electroplating processes.
May 20, 1982	Letter from Fred Nelson, Utah Asst. AG, to James Thompson, EPA Region VIII Counsel	Requests EPA's legal interpretation on Mining Waste Exclusion provision and applicability to above wastes of concern. Letter points out that Kennecott "has indicated that EPA's interpretation precludes regulation of these wastes."
No date	Memo from Henry Schroeder, Project Officer, State of Utah, EPA, to Ernest Pappajohn, EPA State Programs Division	Requests a delineation of Agency policy on above issue. Points out that both State of Utah and Region VIII technical staff strongly favor (Subtitle C) regulation of these wastes.

DATE	DOCUMENT	REQUEST/DECISION
July 9, 1982	Memo from Sharon Metcalf, EPA Region VIII Asst. Counsel, to Jon Yeagley, Chief, State Programs Section, EPA	Reiterates Nelson's request. Provides description of Kennecott process. Suggests that spent acid and dross are not excluded because (1) they are not uniquely associated with milling (an allied processing operation), but rather are common to all electroplating processes, and (2) they result from processing designed to upgrade quality of a usable, commercial product. Calls for consistent Agency policy communicated promptly to Regions, states, and regulated community. Notes that Utah wants issue resolved because its hazardous waste statute precludes it from regulating a larger universe of waste than EPA regulates.
July 28, 1982	Memo from Truett DeGeare, Chief, EPA, State Programs Branch, to Steve Lingle, Chief, Technology Branch, EPA	Requests formal interpretation of Mining Waste Exclusion as it applies to above wastes.
August 19, 1982	Memo from Truett DeGeare to Steve Lingle	Requests formal interpretation by August 30, 1982.
September 24, 1982	Memo from John Lehman, Director, Hazardous and Industrial Waste Division, EPA, to Henry Schroeder, EPA Region VIII Project Officer for Utah	States that spent acids and dross from the Kennecott process are not uniquely associated with the mining and allied processing operations but are common to the other electroplating processes. Wastes are derived from the further processing and upgrading from 98% pure copper to 99+% pure copper. Thus, the exclusion does not apply, and wastes must be regulated under RCRA.
UNKNOWN	Memo from Michael Brown, Acting Assistant Administrator, EPA Office of Solid Waste and Emergency Response, to Region VIII. Referenced Attachment (schematic) not included.	The Kennecott refinery apparently has no wastes subject to control under Subtitle C of RCRA regardless of Kennecott's status under the Mining Waste Exclusion. Also, Kennecott's process does constitute "refining" as described in the November 19, 1980 Federal Register. This document stands out among the others on this topic in stating that the electrolytic refining wastes qualify under the Mining Waste Exclusion.
September 28, 1982	Letter from Henry Schroeder to Dale Parker	Conveys Agency's September 24 decision.

DATE	DOCUMENT	REQUEST/DECISION
October 14, 1982	Letter from Dale Parker to R.A. Malone, Dir. Env. Affairs, Kennecott Minerals Company	Conveys Agency's September 24 decision. Requests Kennecott's plans for compliance with the Utah State Hazardous Waste Management Regulations and federal law regarding several Kennecott facilities and the discussed wastes.
October 22, 1982	Letter from J. Allen Overton, Jr., President, American Mining Congress, to Rita Lavelle, Assistant Administrator for Solid Waste and Emergency Response, U.S. EPA	Conveys AMC's disagreements with the conclusions in John Lehman's September 24, 1982 letter that the RCRA Mining Waste Exclusion does not apply to wastes from Kennecott's copper refinery. States concerns regarding EPA's reversal of its 11/19/80 inclusion of mineral refining wastes in the Exclusion. Urges that Mr. Lehman's memorandum be withdrawn. States that 98% pure copper is not a usable product.
November 17, 1982	Letter from Prather, Seeger, Doolittle, and Farmer, attorneys for Kennecott Minerals Company to Rita Lavelle, Assistant Administrator for Solid Waste and Emergency Response, U.S. EPA	Urges reconsideration of the conclusion in John Lehman's 9/25/82 letter stating that the RCRA Mining Waste Exclusion does not apply to Kennecott's copper refinery wastes. States that the refinery process is dissimilar from electroplating. The spent acid is indigenous to the refining process. States also that the assertion that copper is a usable commercial product prior to refining is in error.
November 19, 1982	Letter from A.H. Hanssen, Manager, Energy Resources, Kennecott Minerals Company, to Dr. Dale D. Parker, Executive Secretary, UT Solid and Hazardous Waste Committee	Addresses questions raised by UT Solid and Hazardous Waste Committee staff at November 15, 1982 meeting concerning the nature of wastes and recycle materials generated at the Utah Copper Division Refinery. States belief that these wastes are indigenous to the refining process and, therefore, are excluded from regulation as hazardous wastes. Contains analytical data.

DATE	DOCUMENT	REQUEST/DECISION
November 24, 1982	Letter from Prather, Seeger, Doolittle, and Farmer, attorneys for Kennecott Minerals Company to John Lehman, Director, Hazardous and Industrial Waste Division, OSW, U.S. EPA	In response to questions from Lehman, states that the residue from precious metals recovery is exclusively recycled back to precious metals recovery or to the smelter, sludge from the wastewater treatment system did not test hazardous in January 1981, and sludge from the wastewater treatment system is disposed of in an impoundment. Asks that the State of Utah be advised that the exclusion is under review by EPA and that a deferral for KMC be allowed until the matter is resolved.
March 18, 1983	Letter from Robert L. Duprey, Director, Air and Waste Management Division, Region VIII to John Lehman, Director, Hazardous and Industrial Waste, OSW, U.S. EPA	States that Headquarters has a different understanding of the Kennecott process and wastes than either Region VIII or the State of Utah. The facility is in violation of its NPDES permit and, until a permanent treatment system is installed, the chemical characteristics of the sludge will continue to change. The State of Utah's non-hazardous waste regulations specifically exclude this type of waste, and it would therefore remain unregulated. Agrees with the conclusion that most wastes from refining processes would not be eligible for the Mining Waste Exclusion. Suggests that EPA Headquarters defer a decision on the Kennecott issue until EPA and the State of Utah can inspect the facility to clarify misunderstandings.
June 25, 1983	Letter from Donald Shosky, Physical Scientist, to Louis Johnson, Chief, Waste Management Branch	Describes the waste management practices at the Utah facility. As a result of NPDES requirements, Kennecott has been modifying the wastewater treatment and handling system. Region VIII believes that the Mining Waste Exclusion does not apply to the copper refining process. A refinery buys or trades for copper plates. This process is, therefore, not a primary extraction process. States that the mixture rule should apply unless evidence is available that this method of disposal proves adequate environmental protection.

DATE	DOCUMENT	REQUEST/DECISION
May 8, 1984	Letter from Robert L. Duprey to Cora Beebe, Director, Office of Policy and Program Management	States the belief that the Mining Waste Exclusion does not apply to the Kennecott situation. Duprey believes the Mining Waste Exclusion applies only to wastes associated from primary mining and oil shale production activities and that wastes created through secondary upgrade processes are potentially regulated under RCRA. Duprey requests guidance on these matters.

SUMMARY OF SIGNIFICANT ISSUES

The Mining Waste Exclusion status of spent acids and refinery dross from Primary Copper Smelting and Refining are in question. Requests for further clarification and official Agency policy are answered with a determination that spent acids and dross are not unique to the mining and allied processing operations and are therefore not excluded. In ca. 1982, EPA headquarters stated in a memo to Region VIII that the Kennecott S&R wastes are excluded, citing RCRA's resource recovery exclusion (§261.6) and the wastewater tank exclusion (§264.1). EPA apparently reversed this interpretation in subsequent correspondence. For example, on 3/18/83, EPA discussed the possible exclusions cited above, showing that the wastes do not qualify. EPA also states that the mixture rule disallows hazardous sludge being combined with non-hazardous waste even at a five percent mixture concentration. Kennecott continues to insist that the wastes are eligible for the Mining Waste Exclusion. Kennecott claims EPA is reversing its stated policy in its 11/19/80 amendment to 40 CFR §261.4(b) to include S&R in the Mining Waste Exclusion.

INQUIRER: John H. Skinner, Director, Office of Solid Waste, U.S. EPA

SECTOR: Aluminum, copper, ferroalloy, lead, zinc

WASTE STREAM(S): Smelting and Refining Wastes

KEY WORD(S): Congressional intent, "plain meaning," "special waste" concept

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
August 1, 1983	Confidential memorandum from Margaret B. Silver, Solid Waste and Emergency Response Division, Office of General Counsel, U.S. EPA to John H. Skinner, Director, Office of Solid Waste, U.S. EPA	Review of applicability of §3001(b)(3)(A)(ii) of RCRA to smelting and refining wastes; prompted by petition for rulemaking to list certain aluminum smelter wastes as hazardous under §3001(b)(1). The memo analyzes the legal options available for interpreting §3001(b)(3)(A)(ii) and presents regulatory options for implementing the appropriate legal interpretations of the Exclusion. The memo, however, does not make any recommendations for interpreting the section.
April 3, 1984	Memorandum from Margaret B. Silver, Office of General Counsel, U.S. EPA to John H. Skinner, Director, Office of Solid Waste, U.S. EPA	Reply to a 3/26/84 memorandum (missing from the files) asking for an evaluation of three interpretations of §3001(b)(3)(A)(ii). Memo discusses legislative intent of Mining Waste Exclusion with respect to the three interpretations.

SUMMARY OF SIGNIFICANT ISSUES

Several options for interpreting the exclusion vis-a-vis smelting and refining wastes were evaluated. Of the three interpretations, the interpretation that is most consistent with Congressional intent is that the Exclusion covers wastes from extraction and beneficiation, and certain large volume processing wastes, such as smelting slag and phosphogypsum.

ELECTRIC UTILITIES

INQUIRER: Paul Emler, Jr., Chairman, Utility Solid Waste Activities Group, Washington, D.C.

SECTOR: Utilities, coal gasification

WASTE STREAM(S): Fossil fuel combustion wastes

KEY WORD(S): Fossil fuel combustion, fifty percent rule, co-disposed, co-treated, necessarily associated with energy production

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
January 13, 1981	Letter from Gary N. Dietrich, Associate Deputy Assistant Administrator for Solid Waste, U.S. EPA, to Paul Emler, Jr., Chairman, Utility Solid Waste Activities Group	Response to letter of October 10, 1980 to Administrator Costle regarding the Solid Waste Disposal Act Amendments of 1980 and their relation to the electric utility industry (letter missing from file). Provides interpretation of the fossil fuel combustion waste exclusion in 40 CFR 261.4(b)(4) stating that "fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels," are not hazardous wastes.

SUMMARY OF SIGNIFICANT ISSUES

Pending completion of further studies, EPA interprets 40 CFR 261.4 (b)(4) (fossil fuel combustion waste exclusion) to include: (1) fly ash, bottom ash, boiler slag, and flue gas emission control wastes resulting from (a) the combustion solely of coal, oil, or natural gas, (b) the combustion of any mixture of these fossil fuels, or (c) the combustion of any mixture of coal and other fuels, up to a 50 percent mixture of such other fuels; and (2) wastes produced in conjunction with the combustion of fossil fuels, which are necessarily associated with the production of energy, and which traditionally have been, and which actually are, mixed with and co-disposed or co-treated with fly ash, bottom ash, boiler slag, or flue gas emission control waste from coal combustion.

FERROUS (FERROALLOY)

INQUIRER: Bethlehem Steel Corporation, Lackawanna Facility
SECTOR: Iron and Steel Production
WASTE STREAM(S): Blast furnace slag and thickener sludge
KEY WORD(S): Ferrous, smelting, refining

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
August 22, 1983	Letter from John Lehman, Director, Hazardous and Industrial Waste Division, Office of Solid Waste, U.S. EPA to Ernest Regna, Chief, Solid Waste Branch, EPA Region II	Response to letter of 7/7/83 (missing from file). States that the blast furnace thickener sludge produced at the Bethlehem Steel Corp. is exempted by the Mining Waste Exclusion from regulation as a hazardous waste. Notes that the Agency is currently re-evaluating the intent of the Exclusion and could narrow its scope with respect to smelting and refining wastes.

SUMMARY OF SIGNIFICANT ISSUES

Blast furnace slag and thickener sludge produced at the Bethlehem Steel Corporation are excluded from regulation as hazardous under Subtitle C by the Mining Waste Exclusion.

INQUIRER: Foote Mineral Company Ferroalloy Facility, Keokuk, Iowa

SECTOR: Ferroalloy

WASTE STREAM(S): Kish reclaim system rejects, venturi scrubber sludge, and baghouse dust from the production of ferrosilicon or silvery iron

KEY WORD(S): Fifty percent rule, ferroalloy, predominant input, steel scrap, large volume wastes

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
May 13, 1986	Memorandum from David Wagoner, Director, Waste Management Division, U.S. EPA Region VII to Marcia Williams, Director, Office of Solid Waste, U.S. EPA	Requests guidance to determine whether EPA can regulate under RCRA the waste from a facility that manufactures ferrosilicon or silvery iron. States that, after reviewing available information, Region VII was unable to determine whether the processes constitute processing of ores and minerals and, is, thus, covered by the Mining Waste Exclusion. Region VII cannot proceed with any compliance action until the regulatory status is certain.
June 10, 1986	Letter from Marcia Williams, Director, Office of Solid Waste, U.S. EPA to David Wagoner, Director, Waste Management Division, Region VII	Responds to request for guidance on the status of wastes from ferrosilicon production. States that if the predominant input to the process is steel scrap, the waste from the ferroalloy facility does not qualify for the Mining Waste Exclusion. The Agency has consistently held that metal scrap is neither an ore nor a mineral and the Exclusion only applies to wastes from the extraction, beneficiation, and processing of ores and minerals.

SUMMARY OF SIGNIFICANT ISSUES

Wastes generated in the production of ferrosilicon where the predominant input to the process is steel scrap (i.e., violates the fifty percent rule) are not exempt from RCRA Subtitle C regulation because the Agency has consistently held that metal scrap is neither an ore nor a mineral. The status of these wastes will be further clarified as the Agency re-evaluates the Exclusion and promulgates a final rule on its reinterpretation.

INQUIRER: John Lehman, Director, Waste Management Division

SECTOR: Aluminum, lead, zinc and zinc oxide, ferroalloys, titanium metal, and titanium dioxide

WASTE STREAM(S): Wastes from primary nonferrous metal smelting and refining

KEY WORD(S): Characteristic hazardous waste, large volume, population, water supply

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
July 3, 1986	Memorandum from Frank Smith, Economic Analysis Staff to John Lehman, Waste Management Division	Memo addresses the question of whether the characteristic wastes produced by primary nonferrous metal smelting and refining plants are different in quantity and locational aspects from the characteristic wastes generated by other manufacturing sectors. On the basis of quantity of wastes generated, most S&R facilities generate larger quantities of characteristic wastes than a majority of facilities (but not the larger waste generators) in other sectors. The smelting and refining waste quantities, as sector totals, are well within the normal range of sector hazardous waste quantities for all manufacturing categories. S&R facilities are more rurally located, and the nearby water supply systems on average serve smaller populations.

SUMMARY OF SIGNIFICANT ISSUES

This memo does not directly address the Mining Waste Exclusion, but does delineate differences between the characteristic wastes produced by primary nonferrous metal smelting and refining plants, both in terms of quantity and location aspects, from the characteristic wastes generated by other manufacturing sectors.

INQUIRER: REMACOR, New Castle, Pennsylvania
SECTOR: Ferrous
WASTE STREAM(S): Baghouse dust from ore reduction furnace
KEY WORD(S): Fifty percent rule, feedstock, steel scrap, smelting, refining

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
August 22, 1983	Letter from John Lehman, Director, Hazardous and Industrial Waste Division, Office of Solid Waste, U.S. EPA to D.M. Friedman, Division of Hazardous Waste Management, Pennsylvania Department of Environmental Resources	Response to 6/24/83 letter (missing from file). States that baghouse dust from the REMACOR facility's ore reduction furnace is excluded from Subtitle C regulation under the Mining Waste Exclusion because the steel scrap used as a source of iron is a relatively minor component of the charge to the furnace. Notes that the Agency is re-evaluating the interpretation of the Exclusion and could in the process narrow its scope with respect to smelting and refining wastes.

SUMMARY OF SIGNIFICANT ISSUES

Baghouse dust from the REMACOR facility's ore reduction furnace is excluded from Subtitle C regulation under the Mining Waste Exclusion because the steel scrap used as a source of iron is a relatively minor component of the charge to the furnace (i.e., meets the fifty percent rule).

INQUIRER: John H. Skinner, Director, Office of Solid Waste, U.S. EPA

SECTOR: Aluminum, copper, ferroalloy, lead, zinc

WASTE STREAM(S): Smelting and Refining Wastes

KEY WORD(S): Congressional intent, "plain meaning," "special waste" concept

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
August 1, 1983	Confidential memorandum from Margaret B. Silver, Solid Waste and Emergency Response Division, Office of General Counsel, U.S. EPA to John H. Skinner, Director, Office of Solid Waste, U.S. EPA	Review of applicability of §3001(b)(3)(A)(ii) of RCRA to smelting and refining wastes; prompted by petition for rulemaking to list certain aluminum smelter wastes as hazardous under §3001(b)(1). The memo analyzes the legal options available for interpreting §3001(b)(3)(A)(ii) and presents regulatory options for implementing the appropriate legal interpretations of the Exclusion. The memo, however, does not make any recommendations for interpreting the section.
April 3, 1984	Memorandum from Margaret B. Silver, Office of General Counsel, U.S. EPA to John H. Skinner, Director, Office of Solid Waste, U.S. EPA	Reply to a 3/26/84 memorandum (missing from the files) asking for an evaluation of three interpretations of §3001(b)(3)(A)(ii). Memo discusses legislative intent of Mining Waste Exclusion with respect to the three interpretations.

SUMMARY OF SIGNIFICANT ISSUES

Several options for interpreting the Exclusion vis-a-vis smelting and refining wastes were evaluated. Of the three interpretations, the interpretation that is most consistent with Congressional intent is that the Exclusion covers wastes from extraction and beneficiation, and certain large volume processing wastes, such as smelting slag and phosphogypsum.

INQUIRER: Richard Stoll, Freedman, Levy, Kroll, & Simonds Law Offices

SECTOR: Ferrous

WASTE STREAM(S): Solid waste from blast furnace

KEY WORD(S): Blast furnace waste, slag, burning hazardous waste

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
February 10, 1986	Letter from Richard Stoll; Freedman, Levy, Kroll, & Simonds Law Offices, to Margaret Silver, Office of General Counsel, U.S. EPA	Reiterates Mr. Stoll's understanding of conclusions reached during telephone conversation on February 5, 1986, including the following: (1) where a blast furnace makes iron from iron ore, resulting solid waste would be exempted from hazardous waste regulation; (2) the burning of hazardous waste for energy recovery in the blast furnace would not change this result; (3) under EPA's proposed reinterpretation, slag from a blast furnace would still not be considered hazardous; and (4) EPA's final reinterpretation is not expected until the fall of 1986.
February 12, 1986	Letter from Margaret Silver, Office of General Counsel, to Richard Stoll, Freedman, Levy, Kroll, & Simonds Law Offices	Confirms that letter dated February 10, 1986 from Mr. Stoll describing the status of iron-making blast furnace waste accurately reflected February 5, 1986 telephone conversation. References two attached memoranda (missing from file) regarding the status of wastes from two other processes related to the Mining Waste Exclusion.

SUMMARY OF SIGNIFICANT ISSUES

Letter dated February 10, 1986 from Richard Stoll to Margaret Silver describing the status of iron-making blast furnace waste accurately reflected their February 5, 1986 telephone conversation. Mr. Stoll's understanding of the conclusions reached during the telephone conversation included the following: (1) where a blast furnace makes iron from iron ore, resulting solid waste would be exempted from hazardous waste regulation; (2) the burning of hazardous waste for energy recovery in the blast furnace would not change this result; (3) under EPA's proposed reinterpretation, slag from a blast furnace would still not be considered hazardous; and (4) EPA's final reinterpretation is not expected until the fall of 1986.

INQUIRER: Toledo Coke Corporation, Toledo, Ohio

SECTOR: Iron and Steel

WASTE STREAM(S): Decanter coal tar

KEY WORD(S): Recycle to process, direct line processing

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
July 22, 1987	Letter from Carl Curry, Environmental Coordinator, Toledo Coke Corporation, to Becky Strom, U.S. EPA Region V	Requests an exclusion of decanter coal tar from regulation as a hazardous waste. Cites an inspection performed by EPA and Versar resulting from the Ohio listing of a waste pile containing decanter tar and coke breeze, constituting storage of decanter tar. States that it now appears that decanter coal tar sludge is not subject to notification requirements of Section 3010 of RCRA, because it is recyclable and satisfies 40 CFR 261.6 (a)(3)(vii). Additionally, states that decanter coal tar is used as an ingredient used to make coke without being reclaimed; it is returned as a substitute for coal, and the coke making process uses coal as a feedstock.
August 11, 1987	Letter from Judy Ketcher, Acting Chief, Solid Waste Branch, U.S. EPA Region V to Marcia Williams, Director, Office of Solid Waste, U.S. EPA	Requests assistance in interpreting the Mining Waste Exclusion as it applies to the storage of coal tar decanter sludge in a waste pile prior to recycling. Disagrees with Toledo Coke that the Exemption extends to coke refineries and states that Toledo Coke is not producing iron and steel on site. The coal tar decanter sludge is a by-product of the production of coke, not the production of iron and steel.

DATE	DOCUMENT	SUBJECT
September 4, 1987	Letter from Marcia Williams, Director, Office of Solid Waste, U.S. EPA to Judy Ketcher, Acting Chief, Solid Waste Branch, U.S. EPA Region V	States that 40 CFR 261.6 (a)(3)(vii) exempts the products coke and coal tar made from recycled decanter tank tar sludge and does not pertain to decanter tank tar sludge stored for recycle. Furthermore, the exemption under 40 CFR 261.2 (e)(1)(iii) "Returned to the original process from which they are generated, without first being reclaimed," also does not pertain to the waste pile because the manufacture of coke is producing a fuel. The fuel is used as a reducing agent during the production of iron.

SUMMARY OF SIGNIFICANT ISSUES

The decanter coal tar sludge waste pile at the Toledo Coke is not exempt from regulation as a hazardous waste, even though the facility claimed that the material is recyclable and satisfies 40 CFR 261.6(a)(3)(vii). Region V did not concur with the facility's claim because the exemption pertains to facilities that are actually involved in the production of steel and iron, and that the exemption is extended only to a by-product of that production process. Region V stated that Toledo Coke was not producing iron and steel on-site and that the coal tar decanter sludge is a by-product of the production of coke, not of iron and steel (i.e., not a direct line process). The Office of Solid Waste did not address this issue directly, but stated that the exemption does not pertain to the decanter tank tar sludge stored for recycle because the exemption covers the products coke and coal tar make from recycled decanter tank tar sludge. In addition, the exemption under 40 CFR 261.2 (e)(1)(iii) "Returned to the original process from which they are generated, without first being reclaimed," also does not pertain to the waste pile because the manufacture of coke is producing a fuel. The fuel is used as a reducing agent during the production of iron. Therefore, in accordance with 40 CFR 261.2(e)(2)(ii) the waste pile (EPA Hazardous Waste K087) at Toledo Coke's plant is subject to the federal hazardous waste regulations.

INQUIRER: U.S. Steel Corporation, Gary Works Complex
 SECTOR: Ferrous (Steel)
 WASTE STREAM(S): Slag generated by a basic oxygen furnace
 KEY WORDS: Alloying, steelmaking

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
January 17, 1986	Letter from R.S. Walters, Manager-Engineering, Gary Works Complex, U.S. Steel, to Christa Henson, Indiana State Board of Health, Division of Land Pollution Control	Requests approval to burn phthalic anhydride production residue in a test to aid conversion of scrap steel and molten iron into liquid steel. Company believes that the phthalic material will be oxidized/combusted and will not harm the environment. Moreover, wastes that have resulted from the burning of this material have passed EP Toxicity tests.
April 22, 1986	Letter from David Lamm, Assistant Commissioner for Solid and Hazardous Waste Management, Indiana Department of Environmental Management to Margaret Silver, Office of General Counsel, U.S. EPA	Requests determination as to whether the Mining Waste Exclusion covers the slag generated by a basic oxygen furnace (BOF) used in steelmaking when a listed hazardous waste is used to aid the steelmaking process. Moreover, wastes that have resulted from the burning of this material have passed EP Toxicity tests.

DATE	DOCUMENT	SUBJECT
June 16, 1986	Letter from Margaret Silver, Office of General Counsel, U.S. EPA to David Lamm, Assistant Commissioner for Solid and Hazardous Waste Management, Indiana Department of Environmental Management	Concludes that the Mining Waste Exclusion does not apply to basic oxygen furnace slag because alloying is not considered "processing of ores and minerals" and steelmaking is an alloying process. Conclusion based on EPA's proposed reinterpretation of the Mining Waste Exclusion (50 <u>Federal Register</u> 40923, October 2, 1985).

SUMMARY OF SIGNIFICANT ISSUES

The Mining Waste Exclusion from Subtitle C regulation cannot be applied to basic oxygen furnace slag because steelmaking is an alloying process, and in EPA's proposed reinterpretation of the Mining Waste Exclusion (50 Federal Register 40293, October 2, 1985), alloying is not considered "processing of ores and minerals."

GENERAL

INQUIRER: Asarco Incorporated

SECTOR: None Specified (Asarco has interests in copper, lead, silver, gold and other metals).

WASTE STREAM(S): None Specified

KEY WORD(S): RTC methodology, Bevill boundaries

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
September 1, 1987	Memo from Dan Derkics, Chief, EPA Large Volume Wastes Section, to Files.	Meeting with Representatives of Asarco. Asarco expressed concerns over proposed and ongoing methodology for preparation of the RTC. These concerns involved: industry review, use of CERCLA data (outdated practices), scope, listing of wastes, and use of EP Toxicity or TCLP tests.

SUMMARY OF SIGNIFICANT ISSUES

Asarco contests RTC methodology, and among other issues states that EPA should include for comparison in the RTC all mineral processing wastes, whether within or without of the Bevill boundaries. Asarco would much prefer to change management practices than have wastes listed. Asarco prefers an ionized water leach test.

INQUIRER: Camp Dresser & McKee Inc.

SECTOR: None Specified

WASTE STREAM(S): None Specified

KEY WORD(S): Uniquely associated, waste processing, waste treatment and processing, fifty percent rule for secondary material, end point of processing, direct line/auxiliary process, Bevill waste recovery, intermediate products

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
June 16, 1987	Memo from Jens Deichmann, CDM-Austin, to Rob Walline, EPA Region VIII	Provides suggested definitions for the terms uniquely associated, waste processing, and waste treatment. Summarizes the following Mining Waste Exclusion issues: direct line processing/auxiliary processes; uniquely associated wastes; end point of processing; fifty percent rule for secondary materials; treatment of processing of Bevill Wastes; use of hazardous waste fuels; alloying/fabrication manufacturing wastes; and off-site processing and sale of intermediate products. Includes a draft of "A Review of the Exclusion of Mining Waste From Subtitle C Regulation."

SUMMARY OF SIGNIFICANT ISSUES

Uniquely associated wastes are those that are produced in the course of, and, by their physical or chemical nature, are peculiar to the extraction, beneficiation, and processing of ores and minerals. Waste processing is the extraction of useful products from mining wastes through physical and/or chemical means. Waste treatment is the physical and/or chemical alteration of mining wastes prior to disposal for the purpose of volume and/or hazard reduction.

INQUIRER: EPA Region IX

SECTOR: General

WASTE STREAM(S): Leachate derived from sulfide ore residues (cinders and slag piles)

KEY WORD(S): Pyritic cinders, fragmented slag, sulfide processing, Mining Waste Exclusion reinterpretation, large volume waste

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
April 4, 1985	Letter from Harry Seraydarian, Chief, Toxics and Waste Management Division, EPA Region IX, to John H. Skinner, Director, EPA Office of Solid Waste	Requests clarification on applicability of Bevill Exclusion to leachate from residues, which are excluded wastes, even though it fails RCRA EP toxicity test (40 CFR Part 261 Subpart C). Stauffer Chemical in Martinez, CA operates sulfuric acid plant on property formerly used in processing sulfide ores. Residues (cinder and slag piles) have contaminated groundwater and soil with metals (Zn, Cu, Cd). Groundwater, evaporating in surface impoundments, failed EP for Cd content and had low pH.
May 16, 1985	Letter from H. Skinner, Director, EPA Office of Solid Waste, to Harry Seraydarian, Chief, Toxics and Waste Management Division, EPA Region IX	Addresses questions regarding applicability of Mining Waste Exclusion to leachate from pyritic cinders and fragmented slag, which are excluded wastes. States that the leachate is within the Exclusion because it is derived from excluded wastes. Also states that until the reinterpretation of the Exclusion, the sludges from the impoundment should be managed prudently.

SUMMARY OF SIGNIFICANT ISSUES

Requests clarification on applicability of Bevill Exclusion to leachate from residues, which are excluded wastes, even though it fails RCRA EP (40 CFR Part 261 Subpart C). The waste from the pyritic cinders and fragmented slag are covered by the Mining Waste Exclusion because they are derived from excluded wastes.

INQUIRER: Dexter Hinckley
SECTOR: General
WASTE STREAM(S): General
KEY WORD(S): Toxicity and volume scoring system

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
August 26, 1986	Memo from Dexter Hinckley, Project Officer, EPA, Large Volume Waste Section, Special Wastes Branch, to John P. Lehman, Director, Waste Management Division	Application of toxicity and volume scoring system to wastes from smelter and similar facilities.

SUMMARY OF SIGNIFICANT ISSUES

The toxicity and volume scoring system can be applied to wastes that are currently excluded from regulation, which demonstrates that these wastes are very similar to those currently under regulation.

INQUIRER: U.S. EPA
SECTOR: Precious Metals
WASTE STREAM(S): Cupels
KEY WORD(S): Cupels, assay, precious metals, recycling, lead

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
November 22, 1989	Memorandum from Alan Pittman, ICF, to Dan Derkics and Bob Hall, EPA	Explains that cupels are used primarily in the mining industry for fire assaying, and that the lead impregnated cupels (approximately 30 grams of lead for a 1.5 inch cupel) are discarded after one use. Assayers use up to 200-300 cupels per day, bringing total use per year into the millions of cupels. Results indicate that at least 95 percent of cupels are used in mining-related assaying, with five percent used by others such as jewelry manufacturers.

SUMMARY OF SIGNIFICANT ISSUES

At least 95 percent of cupels are used for mining-related fire assaying. Process of fire assaying results in lead impregnated cupels that are discarded. Millions of cupels used by industry per year.

INQUIRER: Nevada Department of Conservation and Natural Resources, Carson City, Nevada

SECTOR: Precious Metals

WASTE STREAM(S): Nitric acid containing silver and fire assay cupels containing substantial quantities of lead from the fire assay process

KEY WORD(S): Cupels, silver, gold, precious metals, lead

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
April 19, 1984	Letter from Thomas Fronapfel, P.E., Environmental Engineer, Nevada Department of Conservation and Natural Resources, to John Lehman, Director, Waste Management and Economics Division, U.S. EPA	Outlines concerns regarding wastes produced by mining laboratories, on and off site. Concerns include several issues involved in the regulation of nitric acid from gold and silver mining operations.
May 9, 1984	Letter from John Lehman, Director, Waste Management and Economics Division, EPA, to Thomas Fronapfel, P.E., Nevada Department of Conservation and Natural Resources	States that both the nitric acid waste and the fire assay cupels are solid waste from the extraction, beneficiation, and processing of ores and minerals and are therefore covered under the Mining Waste Exclusion, regardless of whether they are generated by mining operations or commercial laboratories. Adds that the Agency is currently reinterpreting the exclusion.

SUMMARY OF SIGNIFICANT ISSUES

Determination is reached that laboratory wastes from gold and silver mining operations are covered by the Mining Waste Exclusion because they are solid waste from the extraction, beneficiation, and processing of ores and minerals. "These wastes are excluded regardless of whether they are generated by mining operations or commercial laboratories." However, the Agency is currently re-evaluating its 11/19/80 interpretation of the Exclusion.

INQUIRER: United States Department of the Interior
SECTOR: None Specified
WASTE STREAM(S): Overburden, waste rock, and mill tailings resulting from mining or milling
KEY WORD(S): Overburden, waste rock, mill tailings

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
January 13, 1981	Letter from James Rachlesberger, Assistant to the Secretary, US Department of the Interior, to Docket Clerk, EPA Office of Solid Waste	DOI comments on EPA's 11/19/80 interpretation of the Mining Waste Exclusion. This letter recommends that coverage under the RCRA Mining Waste Exclusion be limited to those solid waste products resulting from the exploration, mining, and normal processing or beneficiation of the ore or mineral to an end product such as concentrates, yellowcakes, phosphate rock, copper precipitate, or taconite pellets.

SUMMARY OF SIGNIFICANT ISSUES

The Mining Waste Exclusion is meant to exclude from coverage under Subtitle C the overburden, waste rock, and mill tailings resulting from mining or milling. It is not meant to exclude solid wastes from refining or further beneficiation carried out as a discrete process.

INQUIRER: John Lehman, Director Waste Management Division

SECTOR: Aluminum, lead, zinc and zinc oxide, ferroalloys, titanium metal, and titanium dioxide

WASTE STREAM(S): Wastes from primary nonferrous metal smelting and refining

KEY WORD(S): Characteristic hazardous waste, large volume, population, water supply

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
July 3, 1986	Memorandum from Frank Smith, Economic Analysis Staff to John Lehman, Waste Management Division	Memo addresses the question of whether the characteristic wastes produced by primary nonferrous metal smelting and refining plants are different in quantity and locational aspects from the characteristic wastes generated by other manufacturing sectors. On the basis of quantity of wastes generated, most S&R facilities generate larger quantities of characteristic wastes than a majority of facilities (but not the larger waste generators) in other sectors. The smelting and refining waste quantities, as sector totals, are well within the normal range of sector hazardous waste quantities for all manufacturing categories. S&R facilities are more rurally located, and the nearby water supply systems on average serve smaller populations.

SUMMARY OF SIGNIFICANT ISSUES

This memo does not directly address the Mining Waste Exclusion, but does delineate differences between the characteristic wastes produced by primary nonferrous metal smelting and refining plants, both in terms of quantity and location aspects, from the characteristic wastes generated by other manufacturing sectors.

INQUIRER: EPA Office of General Counsel

SECTOR: None Specified (probably rotary kiln processing - lime, lightweight aggregate, cement)

WASTE STREAM(S): Wastes from burning hazardous wastes in boilers and industrial furnaces, such as APC dust

KEY WORD(S): Hazardous waste combustion, industrial furnace, co-firing, primary feed

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
February 25, 1987	Memo from Steven Silverman, Attorney, Office of General Counsel, EPA, to Francis Blake, General Counsel, EPA	States that wastes from burning hazardous wastes in these devices are presently excluded, though storage of hazardous waste preceding burning is regulated. Outlines specifics of RCRA proposed rule to regulate boilers and industrial furnaces burning hazardous wastes. States that the Bevill exclusion still applies to industrial furnaces processing ores or minerals when these devices co-fire hazardous waste as long as ores and minerals are the primary feed to the device.

SUMMARY OF SIGNIFICANT ISSUES

EPA's current, but "not completely articulated" position is that ore and mineral processing wastes generated in furnaces and boilers that co-fire hazardous wastes are excluded from Subtitle C according to the Bevill Amendment, as long as the ores and minerals are the primary feed to the furnace.

INQUIRER: John Welles, EPA Region VIII

SECTOR: Smelters, primary metal refining, synthetic fuels

WASTE STREAM(S): Flue dust from smelters, waste treatment sludges from primary metal refining, mill tailings

KEY WORD(S): High volume, low toxicity wastes versus low volume, high toxicity wastes

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
September 1, 1983	Memorandum from John Welles, Regional Administrator, EPA Region VIII, to Lee M. Thomas, Assistant Administrator, Office of Solid Waste and Emergency Response, EPA	Recommends that the Agency clarify and limit its expansive 11/19/80 interpretation of the mining waste exclusion, particularly in the area of off-site secondary processing of currently exempt wastes. Region VIII is concerned with low volume, high toxicity wastes. Welles also requests clarification on the status of synthetic fuels development, particularly oil shale and coal based synfuels.
September 30, 1983	Letter from Lee M. Thomas, Assistant Administrator, EPA, to John G. Welles, Regional Administrator, EPA Region VIII	States concern for an expansive interpretation of Mining Waste Exclusion. Explains that review of scope of exemption, analysis of legal options available for interpretation, and evaluation of regulatory alternatives will occur with assistance from Office of General Counsel. After review and analysis, and input from Regions, best course of action will be decided regarding mining exemption. Accepts offer of assistance from Region VIII Mining Wastes Technical Advisory Group.

SUMMARY OF SIGNIFICANT ISSUES

The Mining Waste Exclusion's applicability to low volume, high toxicity wastes and synthetic fuels development needs to be narrowed to avoid including wastes from off-site secondary processing of currently exempt wastes. Assistant Administrator's staff, Office of General Counsel, and Region VIII

Mining Wastes Technical Advisory Group to review scope of mining waste exemption and evaluate regulatory alternatives.

INQUIRER: John H. Skinner, Director, Office of Solid Waste, U.S. EPA

SECTOR: Aluminum, copper, ferroalloy, lead, zinc

WASTE STREAM(S): Smelting and Refining Wastes

KEY WORD(S): Congressional intent, "plain meaning," "special waste" concept

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
August 1, 1983	Confidential memorandum from Margaret B. Silver, Solid Waste and Emergency Response Division, Office of General Counsel, U.S. EPA to John H. Skinner, Director, Office of Solid Waste, U.S. EPA	Review of applicability of §3001(b)(3)(A)(ii) of RCRA to smelting and refining wastes; prompted by petition for rulemaking to list certain aluminum smelter wastes as hazardous under §3001(b)(1). The memo analyzes the legal options available for interpreting §3001(b)(3)(A)(ii) and presents regulatory options for implementing the appropriate legal interpretations of the exclusion. The memo, however, does not make any recommendations for interpreting the section.
April 3, 1984	Memorandum from Margaret B. Silver, Office of General Counsel, U.S. EPA to John H. Skinner, Director, Office of Solid Waste, U.S. EPA	Reply to a 3/26/84 memorandum (missing from the files) asking for an evaluation of three interpretations of §3001(b)(3)(A)(ii). Memo discusses legislative intent of Mining Waste Exclusion with respect to the three interpretations.

SUMMARY OF SIGNIFICANT ISSUES

Several options for interpreting the exclusion vis-a-vis smelting and refining wastes were evaluated. Of the three interpretations, the interpretation that is most consistent with Congressional intent is that the Exclusion covers wastes from extraction and beneficiation, and certain large volume processing wastes, such as smelting slag and phosphogypsum.

GOLD

INQUIRER: James T. Allen, California Department of Health Services

SECTOR: Gold and Silver

WASTE STREAM(S): Gold/silver carbon adsorption process

KEY WORD(S): Gold and silver recovery processing, Bevill Exclusion

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
February 5, 1990	Letter from James T. Allen, Chief, Alternative Technology Division, Toxic Substance Control Program, California Department of Health Services to Dan Derkics, U.S. EPA	Requests clarification of EPA's final rule for mineral processing waste originating from the gold/silver carbon adsorption process. Explains that process uses activated carbon granules to adsorb gold from solution and that wastes from this process consist of nonmetalliferous minerals, heavy metals, and cyanide compounds. States that Department not clear whether EPA's final rule on mining waste exclusion removed this waste from Bevill exclusion. Cites conflicting regulatory determinations that places the Department in doubt about the status of the wastes. Inquires specifically about whether EPA regulates gold/silver wastes from carbon adsorption under Subtitle C or Subtitle D.

SUMMARY OF SIGNIFICANT ISSUES

Requests clarification of EPA's final rule on wastes from gold/silver carbon adsorption process as to whether waste regulated under: (1) Bevill exclusion; and (2) RCRA Subtitle C or D. In EPA's 9/1/89 final rule on the mining waste exclusion (54 FR, No. 169), the carbon adsorption process was not identified as a beneficiation operation. Secondly, waste from the carbon adsorption process was not retained within the Bevill exclusion. However, the Economic Impact Screening Analysis in the 9/1/89 FR (pages 36634-36638) identified gold/silver as one of the mineral processing sectors not generating potentially hazardous wastes.

INQUIRER: U.S. EPA
SECTOR: Precious Metals
WASTE STREAM(S): Cupels
KEY WORD(S): Cupels, assay, precious metals, recycling, lead

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
November 22, 1989	Memorandum from Alan Pittman, ICF, to Dan Derkics and Bob Hall, EPA	Explains that cupels are used primarily in the mining industry for fire assaying, and that the lead impregnated cupels (approximately 30 grams of lead for a 1.5 inch cupel) are discarded after one use. Assayers use up to 200-300 cupels per day, bringing total use per year into the millions of cupels. Results indicate that at least 95 percent of cupels are used in mining-related assaying, with five percent used by others such as jewelry manufacturers.

SUMMARY OF SIGNIFICANT ISSUES

At least 95 percent of cupels are used for mining-related fire assaying. Process of fire assaying results in lead impregnated cupels that are discarded. Millions of cupels used by industry per year.

INQUIRER: Nevada Department of Conservation and Natural Resources, Carson City, Nevada

SECTOR: Precious Metals

WASTE STREAM(S): Nitric acid containing silver and fire assay cupels containing substantial quantities of lead from the fire assay process

KEY WORD(S): Cupels, silver, gold, precious metals, lead

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
April 19, 1984	Letter from Thomas Fronapfel, P.E., Environmental Engineer, Nevada Department of Conservation and Natural Resources, to John Lehman, Director, Waste Management and Economics Division, U.S. EPA	Outlines concerns regarding wastes produced by mining laboratories, on and off site. Concerns include several issues involved in the regulation of nitric acid from gold and silver mining operations.
May 9, 1984	Letter from John Lehman, Director, Waste Management and Economics Division, EPA, to Thomas Fronapfel, P.E., Nevada Department of Conservation and Natural Resources	States that both the nitric acid waste and the fire assay cupels are solid waste from the extraction, beneficiation, and processing of ores and minerals and are therefore covered under the Mining Waste Exclusion, regardless of whether they are generated by mining operations or commercial laboratories. Adds that the Agency is currently reinterpreting the exclusion.

SUMMARY OF SIGNIFICANT ISSUES

Determination is reached that laboratory wastes from gold and silver mining operations are covered by the Mining Waste Exclusion because they are solid waste from the extraction, beneficiation, and processing of ores and minerals. "These wastes are excluded regardless of whether they are generated by mining operations or commercial laboratories." However, the Agency is currently re-evaluating its 11/19/80 interpretation of the Exclusion.

INQUIRER: Karaganis & White, Attorneys at Law
SECTOR: Gold
WASTE STREAM(S): Cyanide compounds
KEY WORD(S): Definition of a mining by-product that is discarded

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
March 30, 1987	Letter from Barbara Magel, Karaganis & White LTD., Attorneys at Law, to Matt Strauss, Chief of Characterization and Assessment Division, EPA, OSW and Lisa K. Friedman, EPA, Office of General Counsel	Letter requesting clarification of the regulatory status of waste cyanide compounds used in gold heap leaching and vat leaching mining operations. Barbara Magel believes these compounds should be considered regulated wastes under Subtitle C of RCRA.

SUMMARY OF SIGNIFICANT ISSUES

Waste cyanide compounds used in gold heap leaching and vat leaching mining operations contain high levels of cyanide. The cyanide waste would meet the definition of a mining by-product that is discarded under 40 CFR 261.2(e) and 40 CFR 261.2(b)(3). Therefore, this waste material should be regulated under Subtitle C of RCRA.

LEAD

INQUIRER: Schuylkill Metals Corporation, Baton Rouge, Louisiana

SECTOR: Secondary Lead Production

WASTE STREAM(S): Blast furnace slags from secondary lead production

KEY WORD(S): Mining waste exclusion, secondary processing

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
May 4, 1984	Letter from E.B. Cornette, Executive Vice President, Schuylkill Metals Corporation, to U.S. Senator Russell Long	Notes that blast furnace slag from primary lead production is excluded from Subtitle C regulation while that from secondary lead production is not. Requests support in amending this "inequity" by allowing exclusion for secondary lead producers.
May 23, 1984	Letter from Senator Russell Long to Congressional Liaison, EPA	Requests a report on the Mining Waste Exclusion as it applies to secondary lead production.
June 18, 1984	Letter from Lee Thomas, Assistant Administrator, U.S. EPA, to Senator Russell Long	The status of slags from lead production under the RCRA hazardous waste control program was reviewed, and it was determined that the exclusion of wastes from secondary facilities was not intended. Notes that the primary smelter waste exclusion is temporary and that EPA is reexamining the Exclusion.

SUMMARY OF SIGNIFICANT ISSUES

EPA states that the Mining Waste Exclusion applies to primary lead producers but not to secondary lead producers. EPA acknowledges that this constitutes a temporary inconsistency; however, wastes from secondary lead smelters were never intended to be covered by the Mining Waste Exclusion.

INQUIRER: John H. Skinner, Director, Office of Solid Waste, U.S. EPA

SECTOR: Aluminum, copper, ferroalloy, lead, zinc

WASTE STREAM(S): Smelting and Refining Wastes

KEY WORD(S): Congressional intent, "plain meaning," "special waste" concept

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
August 1, 1983	Confidential memorandum from Margaret B. Silver, Solid Waste and Emergency Response Division, Office of General Counsel, U.S. EPA to John H. Skinner, Director, Office of Solid Waste, U.S. EPA	Review of applicability of §3001(b)(3)(A)(ii) of RCRA to smelting and refining wastes; prompted by petition for rulemaking to list certain aluminum smelter wastes as hazardous under §3001(b)(1). The memo analyzes the legal options available for interpreting §3001(b)(3)(A)(ii) and presents regulatory options for implementing the appropriate legal interpretations of the Exclusion. The memo, however, does not make any recommendations for interpreting the section.
April 3, 1984	Memorandum from Margaret B. Silver, Office of General Counsel, U.S. EPA to John H. Skinner, Director, Office of Solid Waste, U.S. EPA	Reply to a 3/26/84 memorandum (missing from the files) asking for an evaluation of three interpretations of §3001(b)(3)(A)(ii). Memo discusses legislative intent of Mining Waste Exclusion with respect to the three interpretations.

SUMMARY OF SIGNIFICANT ISSUES

Several options for interpreting the exclusion vis-a-vis smelting and refining wastes were evaluated. Of the three interpretations, the interpretation that is most consistent with Congressional intent is that the Exclusion covers wastes from extraction and beneficiation, and certain large volume processing wastes, such as smelting slag and phosphogypsum.

INQUIRER: Robert Steinwurtzel, Esq., Brown, Roady, Bonvillian, & Gold

SECTOR: Lead Smelting (Secondary Operations)

WASTE STREAM(S): Emission control dust/sludge, waste solution from acid leaching of emission control dust/sludge

KEY WORD(S): Subtitle C, Part B, Report to Congress, secondary processing, listed wastes

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
September 20, 1984	Letter from A. James Barnes, General Counsel, U.S. EPA, to Robert Steinwurtzel, Esq., of Brown, Roady, Bonvillian and Gold*	Responds to Steinwurtzel's inquiry as to whether the RCRA mining waste exclusion applies to wastes from secondary lead smelting operations. States that EPA has never interpreted the exclusion to apply to secondary lead smelting wastes. States that the agency currently lists wastes No. K069 (emission control dust/sludge) and K100 (waste leaching solution from acid leaching of said sludge) as hazardous. States that the mining waste exclusion is temporary, pending completion of EPA's Report to Congress on mining waste, stressing that the exclusion is under review and may thus be modified.
October 25, 1984	Letter from Lee Thomas, Assistant Administrator, EPA, to Honorable W. Henson Moore, U.S. House of Representatives	Responds to letter supporting Steinwurtzel's inquiry about the status of secondary lead processing wastes. States that although an "inequity" may exist, wastes from secondary lead smelters are not covered by the Mining Waste Exclusion.

*Note: The August 29, 1984 letter from Steinwurtzel to the EPA Administrator which is referred to by Barnes in his letter, and to which he is responding, is not attached to this document.

SUMMARY OF SIGNIFICANT ISSUES

The RCRA mining waste exclusion has not been interpreted to apply to secondary lead smelting wastes. Many members of the lead smelting industry have implicitly or explicitly agreed with EPA's interpretation. The Mining Waste Exclusion is temporary pending completion of EPA studies, a Report to Congress, and a review of the scope of the exemption.

LIGHTWEIGHT AGGREGATE

INQUIRER: Hazardous Waste Treatment Council

SECTOR: Not Specified

WASTE STREAM(S): Secondary smelting furnaces, hazardous waste combustion residues

KEY WORD(S): Lightweight Aggregate, sham recycling

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
April 15, 1987	Letter from J. Winston Porter, Assistant Administrator - EPA, to Richard Fortuna, Executive Director, Hazardous Waste Treatment Council	Addresses questions raised by Mr. Fortuna in previous correspondence, including questions concerning enforcement actions, Louisiana's authority to administer the definition of solid waste regulations, the regulation of sham recycling, regulations requiring that wastes placed on the ground be chemically fixed, and the applicability of the Mining Waste Exclusion to industrial furnaces and their residues.

SUMMARY OF SIGNIFICANT ISSUES

Addresses several questions relating to solid waste enforcement and regulations for the Marine Shale Processors facility. The Mining Waste Exclusion applies to devices that process ores or minerals. If an industrial furnace is operating to destroy wastes, as it does with sham burning, then its residues would not be excluded. The Agency maintains that secondary smelting furnaces are not covered by the Mining Waste Exclusion even though some of these furnaces burn small percentages of ores and minerals.

INQUIRER: Norlite Corporation/Northeast Solite, Cohoes, New York

SECTOR: Shale Mining, production of lightweight aggregate

WASTE STREAM(S): Shale fines sludge

KEY WORD(S): Beneficial reuse, wastewater exclusion, lightweight aggregate, rotary kiln, hazardous waste combustion, cement kiln dust, delisting, Superfund, hazardous by characteristic, direct firing

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
May 25, 1984	Memo from Conrad Simon, Director, EPA Air & Waste Management Division, to John H. Skinner, Director, EPA OSW	Requests a regulatory interpretation regarding mineral processing residuals where waste solvents are employed as fuels, specifically those wastes generated from the thermal expansion of shale in rotary kilns that are fired with hazardous waste fuel. Norlite claims that the shale fines sludge it generates is exempt and that its generation is very similar to the generation of cement kiln dust for the production of portland cement. Testing data show the shale fines sludge is non-hazardous. Region II is unsure of how to interpret RCRA in Norlite's case. Includes attachment with Norlite's waste classification for shale fines sludge. [The attached document appears to be "Attachment II" as referenced in the letter. "Attachment I" does not appear to be attached to this packet.]

DATE	DOCUMENT	SUBJECT
August 15, 1984	Memorandum from John Skinner, Director, EPA Office of Solid Waste, to Conrad Simon, Director, EPA Air and Waste Management Division	Responds to request for a regulatory interpretation. The shale fines sludge deposited in the surface impoundment at Norlite is excluded from regulation. However, Norlite's shale fines sludge is not excluded under the beneficial reuse exclusion, as this applies to the process only and not to any wastes generated during the process. States that the wastewater exclusion does not apply to Norlites's shale fines sludge.
March 16, 1985	Letter from Walter Mugdan, Chief, Waste and Toxic Substances Branch, Office of Regional Counsel, to John Greenthal, Esq., Director, Division of Environmental Enforcement, NY State Department of Environmental Conservation	Responds to a request for a regulatory interpretation on mineral processing residuals generated by combustion units burning hazardous waste fuel. States that aggregate kiln residues are excluded from regulation under Subtitle C. However, they may be subject to state hazardous waste regulations. Solite's shale fines sludge is also excluded under the beneficial reuse exclusion if the hazardous waste-derived fines have undergone a chemical reaction so as to become inseparable by physical means. Solite's shale fines sludge is not excluded under the wastewater exclusion.

SUMMARY OF SIGNIFICANT ISSUES

The letters address shale fines sludge at two different facilities and their status under the Mining Waste Exclusion. Lightweight aggregate kiln residues are excluded and are therefore not subject to regulation under Subtitle C of RCRA. However, they may be subject to state Subtitle C regulations. Solite's shale fines sludge is also excluded under the beneficial reuse exclusion if the hazardous waste-derived fines have undergone a chemical reaction so as to become inseparable by physical means. Norlite's sludge, however, is not excluded under the beneficial reuse exclusion, as this applies to the process only and not to any wastes generated during the process. The wastewater exclusion does not apply to either facility's shale fines sludge. If residual wastes generated by hazardous waste reuse (i.e., burning in a rotary kiln) are only hazardous by characteristic, then the operating conditions of the kiln would be of little consequence and hazardous constituents, other than EP toxicity metals, could enter the sludge at any concentration. Region II was unaware that EPA intended that cement kiln dust be excluded from regulation when the operation is based on direct-fired waste fuels.

INQUIRER: EPA Office of General Counsel

SECTOR: None Specified (probably rotary kiln processing - lime, lightweight aggregate, cement)

WASTE STREAM(S): Wastes from burning hazardous wastes in boilers and industrial furnaces, such as APC dust

KEY WORD(S): Hazardous waste combustion, industrial furnace, co-firing, primary feed

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
February 25, 1987	Memo from Steven Silverman, Attorney, Office of General Counsel, EPA, to Francis Blake, General Counsel, EPA	States that residues from burning hazardous wastes in these devices are presently excluded, though storage of hazardous waste preceding burning is regulated. Outlines specifics of RCRA proposed rule to regulate boilers and industrial furnaces burning hazardous wastes. States that the Bevill exclusion still applies to industrial furnaces processing ores or minerals when these devices co-fire hazardous waste as long as ores and minerals are the primary feed to the device.

SUMMARY OF SIGNIFICANT ISSUES

EPA's current, but "not completely articulated" position is that ore and mineral processing wastes generated in furnaces and boilers that co-fire hazardous wastes are excluded from Subtitle C according to the Bevill Amendment, as long as the ores and minerals are the primary feed to the furnace.

OIL, GAS, AND GEOTHERMAL

INQUIRER: Amoco Oil Company, Casper, WY
SECTOR: Petroleum Refining
WASTE STREAM(S): API separator wastewater effluent, API separator sludge

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
January 24, 1984	Letter from Robert L. Duprey, Director, Air and Waste Management Division, EPA Region VIII, to Alan Corson, Office of Solid Waste, EPA	States concerns regarding status of Soda Lake as a RCRA Subtitle C regulated surface impoundment, due to disposal of API separator sludge in the lake without treatment in a dissolved air flotation and high levels of lead and chromium. Requests a clarification of the following: (1) the applicability of reactive sulfides to wastewater lagoons and municipal lagoons, (2) the applicability of the mixture rule to K051 sludge in refinery wastewater, and (3) the advisability of analyzing bottom sludge for lead and chromium and at what level these constituents are of concern.

SUMMARY OF SIGNIFICANT ISSUES

The status of Soda Lake, a petroleum refinery wastewater surface impoundment, as a regulated Subtitle C waste management unit needs to be clarified.

INQUIRER: Robert L. Duprey, Director, Air and Hazardous Materials Division, U.S. EPA Region VIII

SECTOR: Coal Mining, phosphate rock, uranium ore, crude oil, natural gas, geothermal

WASTE STREAM(S): Mining and drilling wastes associated with the above sectors

KEY WORD(S): SMCRA, Solid Waste Disposal Act Amendments of 1980, mining waste

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
October 23, 1980	Memorandum from Robert Duprey, Director, Air and Hazardous Materials Division, U.S. EPA Region VIII, to Steffen Plehn, Deputy Assistant Administrator, U.S. EPA	Contains Region VIII's interpretations of the Solid Waste Disposal Act Amendments of 1980 as they relate to the coal mining, phosphate rock, uranium ore, crude oil, natural gas, and geothermal industry sectors, all of which are represented in Region VIII. Requests that Plehn's staff review the interpretations and make comments.

SUMMARY OF SIGNIFICANT ISSUES

Discusses the integration of RCRA regulations with SMCRA regulations, and the impact on storage, treatment, and disposal of hazardous mine waste by coal mining facilities. States that Region VIII's interpretation of terms "solid waste" and "mine waste" does not include spent chemical products listed in 40 CFR Part 261.33 (e) and (f) or solvents that are classified as hazardous wastes because they exhibit one of the four criteria of a hazardous waste. Discusses Region VIII's interpretation of suspension of regulation of wastes associated with the exploration, development, or production of crude oil, natural gas, or geothermal energy for at least 24 months.

INQUIRER: Robert L. Duprey, Director, Air and Waste Management, U.S. EPA Region VIII

SECTOR: Oil Shale Production

WASTE STREAM(S): Oil shale production wastes

KEY WORD(S): Primary production activities, upgrade processes

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
May 8, 1984	Letter from Robert L. Duprey, Director, Air and Waste Management, U.S. EPA Region VIII, to Cora Beebe, Director, Office of Policy and Program Management, U.S. EPA	States Duprey's belief that the Mining Waste Exclusion applies only to wastes associated from primary mining and oil shale production activities and that wastes created through secondary upgrade processes are potentially regulated under RCRA. Requests guidance on these matters.

SUMMARY OF SIGNIFICANT ISSUES

States Duprey's belief that the Mining Waste Exclusion applies only to wastes associated from primary mining and oil shale production activities and that wastes created through secondary upgrade processes are potentially regulated under RCRA.

INQUIRER: Unocal

SECTOR: Oil Shale

WASTE STREAM(S): Syncrude manufacturing waste

KEY WORD(S): Tailored solid waste management regulations, upgrade definition, beneficiation

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
March 3, 1989	Memo from Dan Derkics, Chief, Large Volume Waste Section, EPA, to Jim Alwood, Program Manager, Chemical Control Division, EPA	The Chemical Control Division agrees with Unocal's determination that the Mining Waste Exclusion does not encompass their "upgrade" facility. Also, the retort process at Parachute Creek is a beneficiation process and, as such, wastes from it are eligible for the Mining Waste Exclusion.

NOTE: This letter is a response to Jim Alwood's January 27, 1989 memo to Devereaux Barnes concerning Parachute Creek oil shale project and letter from Mr Sharrer to Jim Alwood on February 6, 1989 containing process flow diagrams and descriptions.

SUMMARY OF SIGNIFICANT ISSUES

Wastes from the mining, crushing, screening, and retorting operations are considered solid wastes from "extraction and beneficiation." According to the December 1985 Report to Congress, tailored solid waste management regulations (under RCRA Subtitle D) would be developed for these wastes. However, the "upgrade" facility is viewed as a "processing" facility and thus, is equivalent to a petroleum refining facility that is subject to RCRA Subtitle C hazardous waste management requirements. Therefore, Subtitle C regulations apply to Syncrude manufacturing at the upgrade facility.

INQUIRER: Solv-Ex Corporation
SECTOR: Oil and Gas Extraction
WASTE STREAM(S): Sand wastes from oil extraction
KEY WORD(S): Standard Industrial Classification, Tar sands, Box cut advancing pit mine.

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
August 4, 1982	Letter from Stan Zygmunt, Vice President, G.A. Baca and Associates, Ltd., to Allan Corson, Chief of Waste Characterization Branch, Hazardous and Industrial Waste Division, OSW, U.S. EPA	Request for verification of exclusion from the RCRA regulations for a tar sand mining and processing facility planned by Solv-Ex Corp. in New Mexico. Describes company's two-phase approach to full development of plant, oil extraction process, and methods for treatment and disposal of waste sand. Mentions state's approval of waste discharge plan.

SUMMARY OF SIGNIFICANT ISSUES

Company sought federal verification of exclusion from RCRA regulations for a tar sand mining and processing facility planned by the Solv-Ex Corporation.

PHOSPHORIC ACID

INQUIRER: Robert L. Duprey, Director, Air and Hazardous Materials Division, U.S. EPA Region VIII

SECTOR: Coal Mining, phosphate rock, uranium ore, crude oil, natural gas, geothermal

WASTE STREAM(S): Mining and drilling wastes associated with the above sectors

KEY WORD(S): SMCRA, Solid Waste Disposal Act Amendments of 1980, mining waste

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
October 23, 1980	Memorandum from Robert Duprey, Director, Air and Hazardous Materials Division, U.S. EPA Region VIII, to Steffen Plehn, Deputy Assistant Administrator, U.S. EPA	Contains Region VIII's interpretations of the Solid Waste Disposal Act Amendments of 1980 as they relate to the coal mining, phosphate rock, uranium ore, crude oil, natural gas, and geothermal industry sectors, all of which are represented in Region VIII. Requests that Plehn's staff review the interpretations and make comments.

SUMMARY OF SIGNIFICANT ISSUES

Discusses the integration of RCRA regulations with SMCRA regulations, and the impact on storage, treatment, and disposal of hazardous mine waste by coal mining facilities. States that Region VIII's interpretation of terms "solid waste" and "mine waste" does not include spent chemical products listed in 40 CFR Part 261.33 (e) and (f) or solvents that are classified as hazardous wastes because they exhibit one of the four criteria of a hazardous waste. Discusses Region VIII's interpretation of suspension of regulation of wastes associated with the exploration, development, or production of crude oil, natural gas, or geothermal energy for at least 24 months.

INQUIRER: Kaiser Aluminum, Mulberry Florida Plant

SECTOR: Phosphoric Acid

WASTE STREAM(S): Hydrochloric acid, fluosilicic acid

KEY WORD(S): Auxiliary process, off-site processing

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
1985	Letter from James Scarbrough, P.E., Chief, Residuals Management Branch, Waste Management Division, to John Stubbs, Vice President and General Manager, Kaiser Aluminum and Chemical Corporation	States in response to previous correspondence of October 22, 1985 that the hydrochloric acid waste stream results not from the initial basic processing of the mined phosphate rock, but from further processing of fluosilicic acid obtained from phosphoric acid manufacturers and sodium chloride designed to yield the sodium silicofluoride product. Consequently, all units connected with this waste stream are subject to RCRA Subtitle C regulations. Notes that in order for other Mining Waste Exclusion claims to be evaluated, additional information is required.
June 17, 1986	Letter from William Prior, Director, Environmental Affairs, Kaiser Chemicals, to Marcia Williams, Director, Office of Solid Waste, U.S. EPA	Apologizes for failure to respond promptly to the "1986 National Screening Survey." States Kaiser's position that its Mulberry operation meets the regulatory definition for an exempt facility under the Mining Waste Exclusion.
July 26, 1986	Letter from Patrick Tobin, US EPA Waste Management Division, to Marcia Williams, Director, Office of Solid Waste	Introduces attached response to Kaiser's claim that the Mulberry operation meets the definition of an exempted facility under the Mining Waste Exclusion. Attachment outlines the reasoning behind denial of the exclusion for the Mulberry facility.

SUMMARY OF SIGNIFICANT ISSUES

EPA presents justification for its decision that hydrochloric acid generated at Kaiser's Mulberry operation is not excluded from Subtitle C hazardous waste regulation. EPA concluded that the hydrochloric acid waste stream that results from the production of sodium silicofluoride is derived from the processing of fluosilicic acid, a by-product of phosphoric acid production that Kaiser purchases from area phosphoric acid manufacturers. Because the hydrochloric acid is not produced in the initial basic processing of the mined phosphate rock but results instead from an auxiliary process (i.e., the manufacture of sodium silicofluoride), it cannot be covered by the Mining Waste Exclusion. Furthermore, because the waste stream is hazardous as defined by 40 CFR 261.20, all units associated with the waste stream must be managed in accordance with RCRA Subtitle C.

INQUIRER: Tampa Bay Regional Planning Council (TBRPC)

SECTOR: Phosphoric Acid

WASTE STREAM(S): Phosphogypsum

KEY WORD(S): Phosphogypsum, classification as hazardous/non-hazardous waste, EP-toxicity criteria

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
February 2, 1984	Letter from William A. Ockunzzi, Executive Director, TBRPC to William D. Ruckelshaus, Administrator, EPA	Requests information about the basis for the current status or classification of phosphogypsum waste as non-hazardous, thus exempting phosphogypsum from hazardous waste legislation.
February 24, 1984	Letter from John H. Skinner, Director, Office of Solid Waste to William A. Ockunzzi, Executive Director, TBRPC	Responds to request for information on basis for current status of phosphogypsum. States that waste gypsum produced as a by-product of processing phosphate rock is exempted by Section 3001(b)(3)(A)(ii) of RCRA from regulation as hazardous waste. Also states that EPA is required to study disposal and utilization of solid waste to determine adverse effects on human health and environment. Explains that EPA has completed pre-survey of wastes from phosphate processing industry (including five sites from Florida) and no samples of waste from Florida exceeded EP toxicity criteria. States that EPA is planning a joint study with Florida Institute of Phosphate Research (FIPR) to conduct detailed ground-water monitoring at four phosphogypsum disposal sites and suggests that TBRPC contact FIPR or Bureau of Mines for information on potential beneficial uses of phosphogypsum.

DATE	DOCUMENT	SUBJECT
April 9, 1984	Letter from Sandra L. Rahn, Chairman, Tampa Bay Regional Planning Council to William D. Ruckelshaus, Administrator, EPA	Requests that EPA keep TBRPC up to date on studies and activities to determine if phosphogypsum is a hazardous waste. Also suggests that studies proceed with all deliberate speed as findings are of considerable importance to health and safety of the region's residents.

SUMMARY OF SIGNIFICANT ISSUES

Correspondence notes that EPA (as of 1984) classifies phosphogypsum as non-hazardous because it is exempted from regulation as a hazardous waste by Section 3001(b)(3)(A)(ii) of RCRA. EPA is pursuing further studies to determine if phosphogypsum has adverse effects on human health and the environment.

INQUIRER: Texasgulf, Aurora, North Carolina

SECTOR: Phosphoric Acid

WASTE STREAM(S): Filter cake from the defluorinization of phosphate ore

KEY WORD(S): Auxilliary process, EP-toxicity for cadmium

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
August 11, 1986	Letter from J.J. Jewett; McGuire, Woods, & Battle, to Patrick O'Hare, Senior Assistant Attorney General, Supreme Court of Virginia, and to Marcia Williams, Director, EPA Office of Solid Waste	States Texasgulf's position that certain filter cake wastes are within the scope of the Mining Waste Exclusion even though a relatively small quantity of filter cake that is borderline EP Toxic for cadmium has been generated. Contains the following three supporting exhibits: (1) description of the defluorinated phosphate process; (2) Federal Register notice (45 FR 76618) identifying and listing hazardous wastes and hazardous waste standards; and, (3) a Declaratory Ruling by the State of New York's Department of Environmental Conservation concerning the petition of Norlite Corporation and Northeast Solite Corporation on the issue of whether the kiln dust, or shale fines, from its aggregate kilns is a hazardous waste or is excluded from classification as a hazardous waste. The Declaratory Ruling determined that fines are currently not a hazardous waste because of the Mining Waste Exclusion, but are solid waste and subject to regulations as such.

SUMMARY OF SIGNIFICANT ISSUES

Texasgulf's position on the regulation of filter cake includes a recommendation that it be excluded from regulation as hazardous under Subtitle C of RCRA based on the Mining Waste Exclusion and supported by the three attached documents. No response noting an EPA determination is available.

RARE EARTH METALS

INQUIRER: Hecla Mining Company (Davis, Graham & Stubbs)

SECTOR: Copper, sodium germanate, and gallium

WASTE STREAM(S): Tailings pond

KEY WORD(S): Beneficiation definition, leaching, solvent extraction, electrowinning, precipitation

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
May 8, 1990	Letter from Davis, Graham, & Stubbs, Attorneys for Hecla Mining Company, to Mr. Terry Anderson, EPA Region VIII.	Regarding Hecla Mining Company, Apex Facility near St. George, Utah. The following activities occur at the facility: grinding, washing, sorting, filtration, solvent extraction, electrowinning, and precipitation. Hecla concludes these constitute beneficiation based on EPA's 1/23/90 final rule. Most focus is on the leaching operation, which Hecla claims generates a solid waste stream earthen in character and physically and chemically similar to the ore that enters the operation.

SUMMARY OF SIGNIFICANT ISSUES

Status of leaching process is in question. Cites previous EPA language that suggests it regards leaching as beneficiation process. For example, EPA noted in the 9/1/90 final rule that "the RTC explicitly includes leaching operations as an integral part of the extraction and beneficiation domain. . . ." - 54 FR 36618. Other cites included.

INQUIRER: MolyCorp Incorporated
 SECTOR: Rare Earth Metals
 WASTE STREAM(S): Mining tailings with lead/iron residues in the form of filter cakes
 KEY WORD(S): TCLP, mixture rule

DOCUMENTS TRANSFERRED DECISIONS MADE

DATE	DOCUMENT	SUBJECT
January 30, 1991	Note from Christine Caseres, to Bob Hall, EPA, OSW	Describes process steps from crushing ore to the generation of waste. ✓
January 24, 1991	Fax from Christine Caseres to Bob Hall, EPA, OSW	Describes all three types of lead/iron filter cake waste generated in the past and the lead/iron mixture filter cake. Contains flow charts and waste characterization data. ✓
April 8, 1991	Fax from Peter Soyka, ICF, Inc., to Bob Hall, EPA, OSW	Review and comments on a flow diagram and other information submitted by MolyCorp. ? ✓
August 29, 1991	Letter from Ronald Pilorin, State of California, OTS, Alternative Technology Division, to Robert Sega, MolyCorp, Incorporated	The mining tailings received a nonhazardous classification from the Department on March 10, 1986, but MolyCorp is now proposing to alter the waste stream by mixing it with lead/iron filter cake. MolyCorp was advised that the lead/iron residues may be a hazardous waste and that mixing the tailings with the residues would require a treatment permit from the department. They also were informed that the lead/iron residues may be subject to federal hazardous waste classification and therefore have to be managed as hazardous waste in California. ✓

Note: Missing a letter from Ms. Corinda Yen from December 19, 1989 and Ms. Caryn Woodhouse to MolyCorp from November 15, 1990.

SUMMARY OF SIGNIFICANT ISSUES

EPA supported California's preliminary determination that Molycorp's lead/iron residues are mineral processing wastes that are not retained within the Mining Waste Exclusion. These wastes exhibit a characteristic of a hazardous waste based on their lead threshold of 5 mg/l using TCLP. Treatment of a hazardous waste by mixing it with a nonhazardous waste requires a permit. Dilution of a hazardous waste is specifically prohibited as a means of attaining a treatment standard. Lead/iron residues as hazardous waste are subject to California's land disposal restrictions and must be treated to meet treatment standards prior to land disposal.

INQUIRER: Teledyne Wah Chang Albany (TWCA)

SECTOR: Zirconium, hafnium, titanium, niobium (columbium), tantalum, vanadium

WASTE STREAM(S): Fines, turnings or chips, sweepings, and grinder sludge from crucible burn pots and smokehouse wastes

KEY WORD(S): Uniquely associated, primary production, secondary production

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
October 26, 1984	Letter from Stuart Haus, Department Staff, Metrek Division, The Mitre Corporation, to Angela Wilkes, EPA, Office of Solid Waste	Includes several attachments describing facility processes, wastes, and data. Requests clarification of whether the wastes produced by TWCA and burned in the smokehouse facility and crucible burn pots come under the Mining Waste Exclusion and whether waste treatment in the crucible burn pots and the smokehouse facility at TWCA constitutes incineration or constitutes thermal treatment other than incineration.

SUMMARY OF SIGNIFICANT ISSUES

MITRE concludes that the waste streams are uniquely associated with the primary production of zirconium, hafnium, and titanium and the secondary production of titanium. In Mitre's opinion, except for wastes from secondary titanium production, the four waste streams generated in the reduction and distillation steps are all eligible for the Mining Waste Exclusion. None of the waste streams secondary titanium production qualify for the Mining Waste Exclusion.

SILVER

INQUIRER: James T. Allen, California Department of Health Services

SECTOR: Gold and Silver

WASTE STREAM(S): Gold/silver carbon adsorption process

KEY WORD(S): Gold and silver recovery processing, Bevill Exclusion

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
February 5, 1990	Letter from James T. Allen, Chief, Alternative Technology Division, Toxic Substance Control Program, California Department of Health Services to Dan Derkics, U.S. EPA	Requests clarification of EPA's final rule for mineral processing waste originating from the gold/silver carbon adsorption process. Explains that process uses activated carbon granules to adsorb gold from solution and that wastes from this process consist of nonmetalliferous minerals, heavy metals, and cyanide compounds. States that Department not clear whether EPA's final rule on mining waste exclusion removed this waste from Bevill exclusion. Cites conflicting regulatory determinations that places the Department in doubt about the status of the wastes. Inquires specifically about whether EPA regulates gold/silver wastes from carbon adsorption under Subtitle C or Subtitle D.

SUMMARY OF SIGNIFICANT ISSUES

Requests clarification of EPA's final rule on wastes from gold/silver carbon adsorption process as to whether waste regulated under: (1) Bevill exclusion; and (2) RCRA Subtitle C or D. In EPA's 9/1/89 final rule on the mining waste exclusion (54 FR, No. 169), the carbon adsorption process was not identified as a beneficiation operation. Secondly, waste from the carbon adsorption process was not retained within the Bevill exclusion. However, the Economic Impact Screening Analysis in the 9/1/89 FR (pages 36634-36638) identified gold/silver as one of the mineral processing sectors not generating potentially hazardous wastes.

INQUIRER: U.S. EPA
SECTOR: Precious Metals
WASTE STREAM(S): Cupels
KEY WORD(S): Cupels, assay, precious metals, recycling, lead

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
November 22, 1989	Memorandum from Alan Pittman, ICF, to Dan Derkics and Bob Hall, EPA	Explains that cupels are used primarily in the mining industry for fire assaying, and that the lead impregnated cupels (approximately 30 grams of lead for a 1.5 inch cupel) are discarded after one use. Assayers use up to 200-300 cupels per day, bringing total use per year into the millions of cupels. Results indicate that at least 95 percent of cupels are used in mining-related assaying, with five percent used by others such as jewelry manufacturers.

SUMMARY OF SIGNIFICANT ISSUES

At least 95 percent of cupels are used for mining-related fire assaying. Process of fire assaying results in lead impregnated cupels that are discarded. Millions of cupels used by industry per year.

INQUIRER: Nevada Department of Conservation and Natural Resources, Carson City, Nevada

SECTOR: Precious Metals

WASTE STREAM(S): Nitric acid containing silver and fire assay cupels containing substantial quantities of lead from the fire assay process

KEY WORD(S): Cupels, silver, gold, precious metals, lead

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
April 19, 1984	Letter from Thomas Fronapfel, P.E., Environmental Engineer, Nevada Department of Conservation and Natural Resources, to John Lehman, Director, Waste Management and Economics Division, U.S. EPA	Outlines concerns regarding wastes produced by mining laboratories, on and off site. Concerns include several issues involved in the regulation of nitric acid from gold and silver mining operations.
May 9, 1984	Letter from John Lehman, Director, Waste Management and Economics Division, EPA, to Thomas Fronapfel, P.E., Nevada Department of Conservation and Natural Resources	States that both the nitric acid waste and the fire assay cupels are solid waste from the extraction, beneficiation, and processing of ores and minerals and are therefore covered under the Mining Waste Exclusion, regardless of whether they are generated by mining operations or commercial laboratories. Adds that the Agency is currently reinterpreting the exclusion.

SUMMARY OF SIGNIFICANT ISSUES

Determination is reached that laboratory wastes from gold and silver mining operations are covered by the Mining Waste Exclusion because they are solid waste from the extraction, beneficiation, and processing of ores and minerals. "These wastes are excluded regardless of whether they are generated by mining operations or commercial laboratories." However, the Agency is currently re-evaluating its 11/19/80 interpretation of the Exclusion.

TITANIUM

INQUIRER: John Lehman, Director, Waste Management Division

SECTOR: Aluminum, lead, zinc and zinc oxide, ferroalloys, titanium metal, and titanium dioxide

WASTE STREAM(S): Wastes from primary nonferrous metal smelting and refining

KEY WORD(S): Characteristic hazardous waste, large volume, population, water supply

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
July 3, 1986	Memorandum from Frank Smith, Economic Analysis Staff to John Lehman, Waste Management Division	Memo addresses the question of whether the characteristic wastes produced by primary nonferrous metal smelting and refining plants are different in quantity and locational aspects from the characteristic wastes generated by other manufacturing sectors. On the basis of quantity of wastes generated, most S&R facilities generate larger quantities of characteristic wastes than a majority of facilities (but not the larger waste generators) in other sectors. The smelting and refining waste quantities, as sector totals, are well within the normal range of sector hazardous waste quantities for all manufacturing categories. S&R facilities are more rurally located, and the nearby water supply systems on average serve smaller populations.

SUMMARY OF SIGNIFICANT ISSUES

This memo does not directly address the Mining Waste Exclusion, but does delineate differences between the characteristic wastes produced by primary nonferrous metal smelting and refining plants, both in terms of quantity and location aspects, from the characteristic wastes generated by other manufacturing sectors.

INQUIRER: Timet, Henderson, Nevada

SECTOR: Titanium

WASTE STREAM(S): Wastes from primary processing of titanium ore

KEY WORD(S): Uniquely associated wastes, mixture rule, interpretation of Bevill Amendment

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
June 24, 1983	Letter from John P. Lehman, Director, Waste Management and Economics Division, to Phil Bobel, Chief, Toxics and Waste Programs Branch, Region IX	Response to 4/27/83 request for clarification of regulatory status under RCRA of the Timet facility in Region IX claiming exemption through the Mining Waste Exclusion. The solid wastes produced in the Timet "sponge" plant are currently excluded. The wastes from the melt shop operations and the processing of purchased alloys would not be excluded, while solid waste from the processing of the titanium ore would be excluded. States that more information about the composition of the alloys and ratio of ore and alloys is necessary before determination can be made. Finally, 54,000 pounds/year of spent halogenated solvents are being disposed of in the landfill, and if they are not "uniquely associated with these mining and allied processing operations", they are not excluded.

DATE	DOCUMENT	SUBJECT
April 4, 1984	Letter from John Lehman to Phil Bobel	States that Timet's primary waste streams are currently excluded from regulation under the Mining Waste Exclusion. Because the amount of titanium ore far outweighs the amount of alloys and recycled scrap in the mixture, the waste resulting from processing of this mixture is excluded. The exclusion does not apply to halogenated waste solvents or metal forming or cutting wastes, as they are not uniquely associated with this operation.

SUMMARY OF SIGNIFICANT ISSUES

EPA provides a determination that the Mining Waste Exclusion applies to wastes generated from the processing of a mixture of titanium ore and purchased alloys at the Timet facility because the amount of titanium ore significantly exceeds the amount of alloys in the process mixture. Halogenated solvents, cutting wastes, and metal forming wastes, however, are not covered by the Exclusion because they are not uniquely associated with the process; these wastes must be managed and disposed of in accordance with Subtitle C of RCRA.

TITANIUM DIOXIDE

INQUIRER: duPont, New Johnsonville, Tennessee

SECTOR: Titanium Dioxide

WASTE STREAM(S): Spent acidic chlorine/chloride aqueous injection waste from the processing of ilmenite ore

KEY WORDS: Produced in, unique to, injection waste, hazardous waste determination, uniquely associated

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
October, 1983	Memorandum from Donald J. Guinyard, Chief, Water Supply Branch, U.S. EPA, to James Scarbrough, Chief, Residuals Management Branch	Requests a determination of the RCRA hazardous waste status as per 40 CFR 261.3 for process effluent disposed in injection wells at the E.I. duPont Titanium Dioxide Plant, New Johnsonville, TN.
October 24, 1983	Memorandum from Scarbrough to Guinyard	States that process effluent disposed via injection is not hazardous because it is exempt under 40 CFR 261.4(b)7 (i.e., the "ores and minerals" exemption) and is defined as solid waste for regulatory purposes.

DATE	DOCUMENT	SUBJECT
November 7, 1983	Memorandum from Scarbrough to Guinyard	Reverses EPA's decision in Scarbrough's October 24, 1983 memorandum, based on additional regulatory determination by EPA Headquarters and the preamble to the November 19, 1980 regulations. States that the "ores and minerals" exemption does not apply to solid wastes "... such as spent solvents, pesticide wastes, and discarded commercial chemical products" not uniquely associated with mining and mineral processing. The injected waste contains chromium, but chromium is specifically excluded by 40 CFR 261.4(b)(6); instead, the waste is hazardous because it has a pH of 0.1 to 1.5 and, thus, fails the corrosivity characteristic.
November 10, 1983	Record of communication between Bill Steiner of EPA and Scarbrough	Summarizes outcome of meeting with duPont to discuss the determination. Notes duPont's strong objection and request for a meeting with Scarbrough.
November 28, 1983	Letter from James Scarborough, Chief, Residuals Management Branch to John Lehman, Director, Waste Management and Economics Division	Requests guidance on Mining Waste Exclusion as it applies to spent acidic chlorine/chloride aqueous injection waste generated by the E.I. duPont titanium dioxide plant. Attachment contains a regulatory history of the plant, including previous guidance, the basis for determination of the waste as hazardous, and supporting arguments.

DATE	DOCUMENT	SUBJECT
April 4, 1984	Summary of Bevill amendment's applicability to duPont's Titanium Dioxide plant wastes Letter from John Lehman, Director, Waste Management and Economics Division to James Scarbrough, Chief, Residuals Management Branch, Region IV	Document contains background and legislative history, and EPA enforcement of regulations. As a result of this, document states that duPont's TiO_2 manufacturing wastes are covered by the Exclusion. The conclusion is based on the belief that TiO_2 wastes <u>genuinely and legitimately</u> result from the extraction, beneficiation, and processing of the ilmenite ore. These process wastes result from the exploration, mining, milling, smelting, and refining of such ores. These acidic wastes are <u>produced in, and are unique to</u> such exploration, mining, milling, smelting or refining operations. States that the solid wastes from the processes at the duPont titanium dioxide plant near New Johnsonville, Tennessee are excluded from Subtitle C regulation under the Mining Waste Exclusion. In particular, the provision that the exclusion does not apply to "spent solvents" and "commercial chemical products" not uniquely associated with mineral processing operations applies only to materials used in, not produced by, the process. Because the acid in the injected waste is not added to extract titanium from ilmenite ore but is produced as a by-product of the chlorination process, the injected wastes fall within the Exclusion. States that EPA is reevaluating its earlier interpretation to further clarify the wastes covered by the exclusion.

SUMMARY OF SIGNIFICANT ISSUES

The Mining Waste Exclusion applies to process effluent from titanium dioxide production at duPont's New Johnsonville titanium dioxide facility regardless of the fact that it contains an acid that exhibits the RCRA corrosivity characteristic; this exemption is allowed because the acid, while not uniquely associated with the process, is not an addition to but is, rather, a by-product of the process.

INQUIRER: Kemira, Inc., Savannah, Georgia Plant
SECTOR: Titanium Dioxide
WASTE STREAM(S): Wastes from titanium dioxide production
KEY WORD(S): Land disposal restriction, 40 CFR 261.4(b)(7)

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
July, 1987	Letter from J. Winston Porter, EPA Assistant Administrator, to G.L. Roberts, Vice President and Technical Director, Kemira, Inc.	Responds to Robert's June 25, 1987 letter requesting a one-year extension of the effective date of the prohibition on the land disposal of hazardous wastes. States that Kemira's operations were evaluated and, due to the plant's processing ilmenite and rutile ore using the sulfate and chloride processes, the wastes from the facility are temporarily excluded by the Bevill Amendment. Porter states that assuming that these are the only wastes in the impoundment, they are not subject to Subtitle C. Asserts that Subtitle C requirements could be imposed at a later date and suggests that the State be consulted to determine if the wastes are regulated under the State's hazardous waste program.

SUMMARY OF SIGNIFICANT ISSUES

The impoundment at the Kemira facility is not subject to Subtitle C regulation assuming that the wastes in the impoundment consist only of those from processing ilmenite and/or rutile ore using the sulfate and chloride processes to obtain titanium dioxide. The impoundment may be subject to State hazardous waste requirements.

INQUIRER: John Lehman, Director, Waste Management Division

SECTOR: Aluminum, lead, zand zinc oxide, ferroalloys, titanium metal, and titanium dioxide

WASTE STREAM(S): Wastes from primary nonferrous metal smelting and refining

KEY WORD(S): Characteristic hazardous waste, large volume, population, water supply

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
July 3, 1986	Memorandum from Frank Smith, Economic Analysis Staff to John Lehman, Waste Management Division	Memo addresses the question of whether the characteristic wastes produced by primary nonferrous metal smelting and refining plants are different in quantity and locational aspects from the characteristic wastes generated by other manufacturing sectors. On the basis of quantity of wastes generated, most S&R facilities generate larger quantities of characteristic wastes than a majority of facilities (but not the larger waste generators) in other sectors. The smelting and refining waste quantities, as sector totals, are well within the normal range of sector hazardous waste quantities for all manufacturing categories. S&R facilities are more rurally located, and the nearby water supply systems on average serve smaller populations.

SUMMARY OF SIGNIFICANT ISSUES

This memo does not directly address the Mining Waste Exclusion, but does delineate differences between the characteristic wastes produced by primary nonferrous metal smelting and refining plants, both in terms of quantity and location aspects, from the characteristic wastes generated by other manufacturing sectors.

INQUIRER: SCM Chemicals, Inc., Hawkins Point Plant

SECTOR: Titanium Dioxide

WASTE STREAM(S): Wastes from titanium dioxide production

KEY WORD(S): Batch attack lagoon, land disposal restrictions

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
May 29, 1987	Letter from Donald E. Knapp, Vice President, SCM Chemicals, to Mr. Stephen R. Wassersug, Director (US EPA Region III), and Mr. John Humphries, Acting Section Chief (Delmarva, DE and D.C. Section), Hazardous Waste Management Branch, US EPA Region III	SCM correspondence to urge response by July 9, 1987 to request filed with US EPA Region III for a finding under 40 CFR 265.221 (c) regarding surface impoundment (known as the "batch attack lagoon") at SCM's titanium dioxide Hawkins Point plant in Baltimore, MD. Letter describes previous information submissions including (1) Evaluation by EPA's National Groundwater Task Force Team; (2) SCM's petition for modification of the MTRs under Section 3005(j)(13) of RCRA; and (3) revised Part B Permit Application.
July 6, 1987	Letter from J. Winston Porter, Assistant Administrator for Solid Waste and Emergency Response to James Seif, Regional Administrator	The wastes from processing at the SCM facility are temporarily excluded by the Bevill Amendment from regulation. Assuming that the wastes from this processing are the only wastes in the batch attack lagoon, the lagoon is not subject to Subtitle C requirements. Notes that Subtitle C requirements could be imposed at a later date if EPA determines that Subtitle C regulation is appropriate.

SUMMARY OF SIGNIFICANT ISSUES

SCM Chemicals requested a prompt decision from EPA Region III on the application of 40 CFR 265.221(c) (i.e., alternative design and operating practices for surface impoundments used to treat, store, or dispose of hazardous wastes) to its batch attack lagoon, an impoundment in which SCM disposed of wastes from ilmenite ore processing (titanium dioxide production). SCM further stated that if the response was delayed past July 9, 1987, production of titanium dioxide would be disrupted due to possible application of land disposal restrictions for "California list" wastes. No additional documentation is available to describe EPA's response to this letter. EPA did, however, note in its July 6, 1987 letter that wastes derived from the processing of ilmenite ore to produce titanium dioxide that are disposed in the batch attack lagoon are temporarily exempted (at the time of the correspondence) from Subtitle C regulation under the Bevill Amendment.

INQUIRER: Janet L. Weller, Cleary, Gootlieb, Steen, & Hamilton
SECTOR: Titanium Dioxide
WASTE STREAM(S): Wastes from titanium dioxide production
KEY WORD(S): 40 CFR 261.4(b), exclusion from definition of hazardous waste

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
May 11, 1984	Letter from Janet Weller, Cleary, Gottlieb, Steen & Hamilton, to U.S. EPA Freedom of Information Officer	Letter requests that EPA provide any records relating to the scope or application of the exclusion set out in 40 CFR 261.4(b)(7) and any records pertaining to the applicability of that exemption to wastes from titanium dioxide production.
June 15, 1984	Letter from John Skinner, Director of OSW, to Janet Weller	Letter acknowledges Weller's request and includes a list of enclosed documents, which were compiled from information EPA had readily available.

SUMMARY OF SIGNIFICANT ISSUES

Documents discuss release of information by EPA regarding scope and application of the regulatory exemption (of solid wastes from the definition of hazardous wastes) in 40 CFR 261.4(b)(7) and applicability of that exemption to wastes from titanium dioxide production.

URANIUM

INQUIRER: Robert L. Duprey, Director, Air and Hazardous Materials Division, U.S. EPA Region VIII

SECTOR: Coal Mining, phosphate rock, uranium ore, crude oil, natural gas, geothermal

WASTE STREAM(S): Mining and drilling wastes associated with the above sectors

KEY WORD(S): SMCRA, Solid Waste Disposal Act Amendments of 1980, mining waste

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
October 23, 1980	Memorandum from Robert Duprey, Director, Air and Hazardous Materials Division, U.S. EPA Region VIII, to Steffen Plehn, Deputy Assistant Administrator, U.S. EPA	Contains Region VIII's interpretations of the Solid Waste Disposal Act Amendments of 1980 as they relate to the coal mining, phosphate rock, uranium ore, crude oil, natural gas, and geothermal industry sectors, all of which are represented in Region VIII. Requests that Plehn's staff review the interpretations and make comments.

SUMMARY OF SIGNIFICANT ISSUES

Discusses the integration of RCRA regulations with SMCRA regulations, and the impact on storage, treatment, and disposal of hazardous mine waste by coal mining facilities. States that Region VIII's interpretation of terms "solid waste" and "mine waste" does not include spent chemical products listed in 40 CFR Part 261.33 (e) and (f) or solvents that are classified as hazardous wastes because they exhibit one of the four criteria of a hazardous waste. Discusses Region VIII's interpretation of suspension of regulation of wastes associated with the exploration, development, or production of crude oil, natural gas, or geothermal energy for at least 24 months.

ZINC

INQUIRER: John Lehman, Director, Waste Management Division

SECTOR: Aluminum, lead, zinc and zinc oxide, ferroalloys, titanium metal, and titanium dioxide

WASTE STREAM(S): Wastes from primary nonferrous metal smelting and refining

KEY WORD(S): Characteristic hazardous waste, large volume, population, water supply

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
July 3, 1986	Memorandum from Frank Smith, Economic Analysis Staff to John Lehman, Waste Management Division	Memo addresses the question of whether the characteristic wastes produced by primary nonferrous metal smelting and refining plants are different in quantity and locational aspects from the characteristic wastes generated by other manufacturing sectors. On the basis of quantity of wastes generated, most S&R facilities generate larger quantities of characteristic wastes than a majority of facilities (but not the larger waste generators) in other sectors. The smelting and refining waste quantities, as sector totals, are well within the normal range of sector hazardous waste quantities for all manufacturing categories. S&R facilities are more rurally located, and the nearby water supply systems on average serve smaller populations.

SUMMARY OF SIGNIFICANT ISSUES

This memo does not directly address the Mining Waste Exclusion, but does delineate differences between the characteristic wastes produced by primary nonferrous metal smelting and refining plants, both in terms of quantity and location aspects, from the characteristic wastes generated by other manufacturing sectors.

INQUIRER: New Jersey Zinc Company

SECTOR: Zinc

WASTE STREAM(S): Partially reclaimed zinc oxide

KEY WORD(S): Zinc oxide, "derived-from" rule, K061 hazardous waste, kiln residue

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
January 25, 1988	Letter from Marcia E. Williams, Director, Office of Solid Waste, to Robert E. Greaves, Chief, Waste Management Branch	Letter addresses a number of regulatory issues surrounding New Jersey Zinc's Palmerton, NJ site, including classification of a K061 storage pile; the regulatory status of Waelz kiln residue; classification of a kiln as reclamation furnace or hazardous waste incinerator; and regulation of exempted waste under RCRA corrective action requirements.

SUMMARY OF SIGNIFICANT ISSUES

EPA states in this correspondence that New Jersey Zinc Company must obtain a RCRA permit for their K061 storage pile because it involves solid waste management; that is, the AMC v. EPA opinion does not apply. Also, partially reclaimed zinc oxide is both a solid and hazardous waste; the regulatory status of kiln residue and the partially reclaimed zinc oxide depends on the type of feed to the kiln; if the only hazardous waste New Jersey Zinc used in the kiln was K061, the residues may not be hazardous. Furthermore, use of F006 and F019 wastewater treatment sludges that are not ordinarily associated with zinc smelting means that the kiln may be more properly classified as a hazardous waste incinerator as opposed to a reclamation furnace. Regarding exempted waste under RCRA corrective action, RCRA section 3001(b)(3) exemptions do not extend to Section 3004(u), as explained in the second HSWA Codification Rule. Also, releases from pre-RCRA inactive units are within the authority of RCRA Section 3004(u) based on 40 CFR Section 264.101 which provides that an owner/operator of a facility seeking a RCRA permit must institute corrective action for releases from units at the facility "...regardless of the time at which waste was placed in such unit." In addition, releases from units excluded from RCRA jurisdiction under the AMC opinion would be handled the same as other product or process releases; that is, the unit holding the product is not a SWMU, but areas contaminated by "routine and systematic discharges" from the unit are SWMUs.

INQUIRER: Mark Schollenberger, Illinois EPA, for Big River Zinc Corporation, Sauget, IL

SECTOR: Zinc

WASTE STREAM(S): Preleach filtrate, acid plant blowdown and waste waters, solid residuals from lime treatment and clarification, waste waters from electrowinning and casting

KEY WORD(S): Beneficiation, processing, zinc process, secondary materials

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
March 18, 1991	Facsimile from Mark Schollenberger, Illinois EPA, to Bob Hall, U.S. EPA, OSW/Waste Management Division	Conveys letter prepared by Mr. Larry Estep of Big River Zinc Corporation describing operations at the facility. Mr. Schollenberger requests guidance regarding classification of operations as beneficiation or processing.
April 11, 1991	Memorandum from ICF Incorporated to Bob Hall	Provides observations on the information provided regarding classifying Big River's operations.

SUMMARY OF SIGNIFICANT ISSUES

EPA conducted an analysis of the document submitted by Schollenberger to prepare guidance on classifying Big River's operations as beneficiation or processing. EPA advised that if only extraction and beneficiation operations occur "upstream" of Big River Zinc, the transition from beneficiation to processing occurs at some point within the Big River Zinc facility and not before. If processing of the ores did occur prior to the Big River Zinc facility, none of Big River's operations would be considered beneficiation (54 FR 36619). EPA concluded that the transition from beneficiation to processing appears to occur with the roasting operation at the facility, because the "leaching" operation at Big River is actually a digestion process. This digestion process dissolves a significant fraction of the ore concentrate feed and produces low volumes of solid residues that are different chemically and physically from the ore concentrate feed.

INQUIRER: John H. Skinner, Director, Office of Solid Waste, U.S. EPA

SECTOR: Aluminum, copper, ferroalloy, lead, zinc

WASTE STREAM(S): Smelting and Refining Wastes

KEY WORD(S): Congressional intent, "plain meaning," "special waste" concept

DOCUMENTS TRANSFERRED/DECISIONS MADE

DATE	DOCUMENT	SUBJECT
August 1, 1983	Confidential memorandum from Margaret B. Silver, Solid Waste and Emergency Response Division, Office of General Counsel, U.S. EPA to John H. Skinner, Director, Office of Solid Waste, U.S. EPA	Review of applicability of §3001(b)(3)(A)(ii) of RCRA to smelting and refining wastes; prompted by petition for rulemaking to list certain aluminum smelter wastes as hazardous under §3001(b)(1). The memo analyzes the legal options available for interpreting §3001(b)(3)(A)(ii) and presents regulatory options for implementing the appropriate legal interpretations of the Exclusion. The memo, however, does not make any recommendations for interpreting the section.
April 3, 1984	Memorandum from Margaret B. Silver, Office of General Counsel, U.S. EPA to John H. Skinner, Director, Office of Solid Waste, U.S. EPA	Reply to a 3/26/84 memorandum (missing from the files) asking for an evaluation of three interpretations of §3001(b)(3)(A)(ii). Memo discusses legislative intent of Mining Waste Exclusion with respect to the three interpretations.

SUMMARY OF SIGNIFICANT ISSUES

Several options for interpreting the exclusion vis-a-vis smelting and refining wastes were evaluated. Of the three interpretations, the interpretation that is most consistent with Congressional intent is that the Exclusion covers wastes from extraction and beneficiation, and certain large volume processing wastes, such as smelting slag and phosphogypsum.

Zinc

lehmn_2.new (John Lehman, Director Waste Management Division)

Memorandum from Frank Smith, Economic Analysis Staff, to John Lehman, Waste Management Division. July 3, 1986.

njzinc.new (New Jersey Zinc Company)

Letter from Marcia E. Williams, Director, Office of Solid Waste, to Robert E. Greaves, Chief, Waste Management Branch. January 25, 1988.

schollen.new (Mark Schollenberger, Illinois EPA, for Big River Zinc Corporation, Sauget, IL)

Facsimile from Mark Schollenberger, Illinois EPA (conveying letter prepared by Mr. Larry Estep of Big River Zinc Corporation) to Bob Hall, U.S. EPA, OSW/Waste Management Division. March 18, 1991.

Memorandum from ICF Incorporated to Bob Hall. April 11, 1991.

skinner.new (John H. Skinner, Director, Office of Solid Waste, U.S. EPA)

Confidential memorandum from Margaret B. Silver, Solid Waste and Emergency Response Division, Office of General Counsel, U.S. EPA, to John H. Skinner, Director, Office of Solid Waste, U.S. EPA. August 1, 1983.

Memorandum from Margaret B. Silver, Office of General Counsel, U.S. EPA, to John H. Skinner, Director, Office of Solid Waste, U.S. EPA. April 3, 1984.

Missing

skinner.new (John H. Skinner, Director, Office of Solid Waste, U.S. EPA)

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Memorandum from John Welles, Regional Administrator, EPA Region VIII, to Lee M. Thomas, Assistant Administrator, Office of Solid Waste and Emergency Response, EPA. September 1, 1983.

Letter from Lee M. Thomas, Assistant Administrator, EPA, to John G. Welles, Regional Administrator, EPA Region VIII. September 30, 1983.

region-9.new (Region IX)

Letter from Harry Seraydarian, Chief, Toxics and Waste Management Division, EPA Region IX, to John H. Skinner, Director, EPA Office of Solid Waste. April 4, 1985.

Letter from John H. Skinner, Director, EPA Office of Solid Waste, to Harry Seraydarian, Chief, Toxics and Waste Management Division, EPA Region IX. May 16, 1985.

skinner.new (John H. Skinner, Director, Office of Solid Waste, U.S. EPA)

Confidential memorandum from Margaret B. Silver, Solid Waste and Emergency Response Division, Office of General Counsel, U.S. EPA to John H. Skinner, Director, Office of Solid Waste, U.S. EPA. August 1, 1983.

Memorandum from Margaret B. Silver, Office of General Counsel, U.S. EPA to John H. Skinner, Director, Office of Solid Waste, U.S. EPA. April 3, 1984.

Gold

cahealth.new (James T. Allen, California Department of Health Services)

Letter from James T. Allen, Chief, Alternative Technology Division, Toxic Substance Control Program, California Department of Health Services to Dan Derkics, U.S. EPA. February 5, 1990.

cupel-1.new (U.S. EPA)

Memorandum from Alan Pittman, ICF, to Dan Derkics and Bob Hall, EPA. November 22, 1989.

cupel-2.new (Nevada Department of Conservation and Natural Resources, Carson City, Nevada)

Letter from Thomas Fronapfel, P.E., Environmental Engineer, Nevada Department of Conservation and Natural Resources, to John Lehman, Director, Waste Management and Economics Division, U.S. EPA. April 19, 1984.

Letter from John Lehman, Director, Waste Management and Economics Division, EPA, to Thomas Fronapfel, P.E., Nevada Department of Conservation and Natural Resources. May 9, 1984.

karalaw.sep (Karaganis & White, Attorneys at Law)

Letter from Barbara Magel, Karaganis & White LTD., Attorneys at Law, to Matt Strauss, Chief of Characterization and Assessment Division, EPA, OSW and Lisa K. Friedman, EPA, Office of General Counsel. March 30, 1987.

Lead

schuytki.new (Schuylkill Metals Corp.)

Letter from E.B. Cornette, Executive Vice President, Schuylkill Metals Corporation, to U.S. Senator Russell Long. Subject: Inequity in Mining Waste Exclusion between primary and secondary lead processing. May 4, 1984.

Letter from Senator Russell Long, U.S. Senate, to Congressional Liaison, EPA. Subject: Request for copy of Mining Waste Exclusion as it applies to secondary lead production. May 23, 1984.

Letter from Lee Thomas, Assistant Administrator, EPA, to Senator Russell Long. Subject: Status of secondary lead processing wastes under the Mining Waste Exclusion. June 18, 1984.

skinner.new (John H. Skinner, Director, Office of Solid Waste, U.S. EPA)

Confidential memorandum from Margaret B. Silver, Solid Waste and Emergency Response Division, Office of General Counsel, U.S. EPA to John H. Skinner, Director, Office of Solid Waste, U.S. EPA. August 1, 1983.

Memorandum from Margaret B. Silver, Office of General Counsel, U.S. EPA to John H. Skinner, Director, Office of Solid Waste, U.S. EPA. April 3, 1984.

steinwtz.new (Robert Steinwurtzel, Esq., Brown, Roady, Bonvillian & Gold)

Letter from A. James Barnes, General Counsel, EPA, to Robert Steinwurtzel, Esq., of Brown, Roady, Bonvillian & Gold. Subject: Status of secondary lead processing wastes under the Mineral Waste Exclusion. September 20, 1984.

Letter from Lee Thomas, Assistant Administrator, EPA, to Honorable W. Henson Moore, U.S. House of Representatives. Subject: Status of secondary lead processing wastes under the Mining Waste Exclusion. October 25, 1984.

Missing

steinwtz.new (Robert Steinwurtzel, Esq., Brown, Roady, Bonvillian & Gold)

Letter from Robert Steinwurtzel, Esq., of Brown, Roady, Bonvillian & Gold, to EPA Administrator. Subject: Status of secondary lead processing wastes under the Mineral Waste Exclusion. August 29, 1984. (Referenced in letter from A. James Barnes, General Counsel, EPA, to Robert Steinwurtzel, Esq., of Brown, Roady, Bonvillian & Gold. September 20, 1984.)

Lightweight Aggregate

marine.new (Marine Shale Facility)

Letter from Mr. J. Winston Porter, Assistant Administrator, EPA, to Mr. Richard C. Fortuna, Executive Director, Hazardous Waste Treatment Council. April 15, 1987.

norlite.new (Norlite Corporation/Northeast Solite, Cohoes, New York)

Memorandum from Conrad Simon, Director, Air and Waste Management Division, EPA Region 2, to John H. Skinner, Director, EPA OSW. May 25, 1984. With one attachment (appears to be attachment II as referenced in text of letter).

Memorandum from John Skinner, Director, Office of Solid Waste, to Conrad Simon, Director, Air and Waste Management Division. August 15, 1984.

Letter from Walter Mugdan, Chief, Waste and Toxic Substances Branch, Office of Regional Counsel, to John Greenthal, Esq., Director, Division of Environmental Enforcement, NY State Department of Environmental Conservation. March 16, 1985.

ogc.new (EPA Office of General Counsel)

Memo from Steven Silverman, Attorney, Office of General Counsel, EPA, to Francis Blake, General Counsel, EPA. February 25, 1987.

Missing

marine.new (Marine Shale Facility)

Letter from Mr. Richard C. Fortune, Executive Director, Hazardous Waste Treatment Council, to EPA (Region VI or HQ or both). January 6, 1987. (Referenced in a letter from Mr. J. Winston Porter, Assistant Administrator, EPA, to Mr. Richard C. Fortuna, Executive Director, Hazardous Waste Treatment Council. April 15, 1987.)

Letter from Mr. Richard C. Fortune, Executive Director, Hazardous Waste Treatment Council, to EPA (Region VI or HQ or both). March 27, 1987. (Referenced in a letter from Mr. J. Winston Porter, Assistant Administrator, EPA, to Mr. Richard C. Fortuna, Executive Director, Hazardous Waste Treatment Council. April 15, 1987.)

norlite.new (Norlite Corporation/Northeast Solite, Cohoes, New York)

Letter from Norlite to EPA Region II. Subject: Response to EPA complaint concerning its shale fines sludge. ca: 1983. (Referenced as Attachment II in memorandum from Conrad Simon, Director, Air and Waste Management Division, EPA Region 2, to John H. Skinner, Director, EPA OSW. May 25, 1984.)

Letter from John Greenthal, Esq., Director, Division of Environmental Enforcement, NY State Department of Environmental Conservation, to Waste and Toxic Substances Branch, Office of Regional Counsel, EPA Region II. January 18, 1985. (Referenced in letter from Walter Mugdan, Chief, Waste and Toxic Substances Branch, Office of Regional Counsel, EPA Region II, to John Greenthal, Esq., Director, Division of Environmental Enforcement, NY State Department of Environmental Conservation. March 16, 1985.)

Memorandum from John Skinner to Conrad Simon. August 15, 1984. (Referenced in letter from Walter Mugdan, Chief, Waste and Toxic Substances Branch, Office of Regional Counsel, EPA Region II, to John Greenthal, Esq., Director, Division of Environmental Enforcement, NY State Department of Environmental Conservation. March 16, 1985.)

Oil, Gas, and Geothermal

amoco.new (Amoco Oil Company, Casper, WY)

Letter from Robert L. Duprey, Director, Air and Waste Management Division, EPA Region VIII, to Alan Corson, Office of Solid Waste, EPA. January 24, 1984.

duprey_1.new (Robert L. Duprey, Director, Air and Hazardous Materials Division, U.S. EPA Region VII)

Memorandum from Robert Duprey, Director, Air and Hazardous Materials Division, U.S. EPA Region VIII, to Steffen Plehn, Deputy Assistant Administrator, U.S. EPA. October 23, 1980.

duprey_2.new (Robert L. Duprey, Director, Air and Hazardous Materials Division, U.S. EPA Region VII)

Letter from Robert L. Duprey, Director, Air and Waste Management, U.S. EPA Region VIII, to Cora Beebe, Director, Office of Policy and Program Management, U.S. EPA. May 8, 1984.

derk-oil.new (Dan Derkics, Chief, Large Volume Waste Section, EPA)

Memo from Dan Derkics, Chief, Large Volume Waste Section, EPA, to Jim Alwood, Program Manager, Chemical Control Division, EPA. March 3, 1989.

solvex.sep (Solv-Ex Corporation)

Letter from Stan Zygmunt, Vice President, G.A. Baca and Associates, Ltd., to Allan Corson, Chief of Waste Characterization Branch, Hazardous and Industrial Waste Division, OSW, U.S. EPA. August 4, 1982.

Missing

amoco.new (Amoco Oil Company, Casper, WY)

Letter from Amoco Oil Company, Wyoming Refinery, to EPA Office of Solid Waste, Waste Characterization Branch. November 4, 1983. (Referenced in letter from Robert L. Duprey, Director, Air and Waste Management Division, EPA, to Alan Corson, Office of Solid Waste, EPA. January 24, 1984.)

derk-oil.new (Dan Derkics, Chief, Large Volume Waste Section, EPA)

Memorandum from Jim Alwood, Program Manager, Chemical Control Division, EPA, to Devereaux Barnes (EPA?). January 27, 1989. (Referenced in memo from Dan Derkics, Chief, Large Volume Waste Section, EPA, to Jim Alwood, Program Manager, Chemical Control Division, EPA. March 3, 1989.)

Letter from Mr. Sharrer to Dan Derkics, Chief, Large Volume Waste Section, EPA. February 6, 1989. (Referenced in memo from Dan Derkics, Chief, Large Volume Waste Section, EPA, to Jim Alwood, Program Manager, Chemical Control Division, EPA. March 3, 1989.)

solvex.sep (Solv-Ex Corporation)

Memorandum from John G. Welles, Administrator, EPA Region VIII, to Lee Thomas, Assistant Administrator, EPA (Referenced in letter from Lee Thomas, Assistant Administrator, EPA, to John G. Welles, Administrator, EPA Region VIII. September 30, 1983.)

Phosphoric Acid

duprey_1.new (Robert L. Duprey, Director, Air and Hazardous Materials Division, U.S. EPA Region VIII)

Letter from Robert Duprey, Director, Air and Hazardous Materials Division, EPA Region VIII, to Steffen Plehn, Deputy Assistant Administrator, U.S. EPA. October 23, 1980.

kaiser.new (Kaiser Aluminum and Chemical Corporation)

Letter from James H. Scarbrough, Waste Management Division, U.S. EPA Region IV, to John M. Stubbs, Kaiser Aluminum and Chemical Corporation. 1985.

Letter from William Prior, Director, Environmental Affairs, Kaiser Chemicals, to Marcia Williams, Director, Office of Solid Waste, U.S. EPA. June 17, 1986.

Letter from Patrick Tobin, US EPA Waste Management Division, to Marcia Williams, Director, Office of Solid Waste. July 26, 1986.

tampabay.new (William A. Ockunzzi, Executive Director, Tampa Bay Regional Planning Council)

Letter from William A. Ockunzzi, Executive Director, TBRPC to William D. Ruckelhaus, Administrator, EPA. February 2, 1984.

Letter from John H. Skinner, Director, Office of Solid Waste to William A. Ockunzzi, Executive Director, TBRPC. February 24, 1984.

Letter from Sandra L. Rahn, Chairman, Tampa Bay Regional Planning Council to William D. Ruckelshaus, Administrator, EPA. April 9, 1984.

txgulf.sep (Texasgulf, Aurora, North Carolina)

Letter from J.J. Jewett; McGuire, Woods & Battle, to Patrick O'Hare, Senior Assistant Attorney General, Supreme Court of Virginia. August 11, 1986.

Missing

kaiser.new (Kaiser Aluminum and Chemical Corporation)

Letter from Mr. William Prior, Kaiser Aluminum and Chemical Corporation, to Mr. John Sarrikko, Florida Department of Environmental Regulation. October 22, 1985. (Referenced in a letter from James H. Scarbrough, Waste Management Division, U.S. EPA Region IV, to John M. Stubbs, Kaiser Aluminum and Chemical Corporation. 1985.)

Letter from Mr. John Stubbs, Kaiser Aluminum and Chemical Corporation, to Mr. James Scarbrough, EPA. October 22, 1985. (Referenced in a letter from James H. Scarbrough, Waste Management Division, U.S. EPA Region IV, to John M. Stubbs, Kaiser Aluminum and Chemical Corporation. 1985.)

Letter from Patrick Tobin, Director, Waste Management Division, EPA, to Kaiser Aluminum and Chemical Corporation, explaining EPA's justification for its denial of the applicability of the mining waste exemption to the production of sodium silicofluoride at Kaiser. (Referenced in memorandum from Tobin to Marcia Williams, Director, EPA Office of Solid Waste. July 26, 1986.)

txgulf.sep (Texasgulf, Aurora, North Carolina)

Response from EPA to Texasgulf on applicability of mining waste exclusion to filter cake from the defluorination of phosphate ore. (Implicitly requested in letter from J.J. Jewett; McGuire, Woods & Battle, to Patrick O'Hare, Senior Assistant Attorney General, Supreme Court of Virginia. August 11, 1986.)

Letter from John Skinner, Director, Office of Solid Waste, EPA, to EPA Region II. August 15, 1984. (Referenced in letter from J.J. Jewett; McGuire, Woods & Battle, to Patrick O'Hare, Senior Assistant Attorney General, Supreme Court of Virginia. August 11, 1986.)

Rare Earth Metals

hecla.new (Hecla Mining Company (Davis, Graham & Stubbs))

Letter from Davis, Graham & Stubbs, Attorneys for Hecla Mining Company, to Mr. Terry Anderson, EPA Region VIII. May 8, 1990.

molycorp.new (Molycorp, Incorporated)

Note from Christine Caseres, to Bob Hall, EPA, Office of Solid Waste. January 30, 1991.

Fax from Christine Caseres to Bob Hall, EPA, Office of Solid Waste. January 24, 1991.

Fax from Peter Soyka, ICF, Inc., to Bob Hall, EPA, Office of Solid Waste. April 8, 1991.

Letter from Ronald Pilorin, State of California, Office of Toxic Substances, Alternative Technology Division, EPA, to Robert Sega, Molycorp, Incorporated. August 29, 1991.

twca.new (Teledyne Wah Chang Albany)

Letter from Stuart Haus, Department Staff, Metrek Division, The Mitre Corporation, to Angela Wilkes, EPA, Office of Solid Waste. October 26, 1984.

Missing

molycorp.new (Molycorp, Incorporated)

Letter from Ms. Corinda Yep, California Department of Health Services [now the Department of Toxic Substances Control], to Molycorp. December 19, 1989. (Referenced in letter from Ronald Pilorin, State of California, Office of Toxic Substances, Alternative Technology Division, EPA, to Robert Sega, Molycorp, Incorporated. August 29, 1991.)

Letter from Ms. Caryn Woodhouse, California Department of Health Services [now the Department of Toxic Substances Control], to Molycorp. November 15, 1990. (Referenced in letter from Ronald Pilorin, State of California, Office of Toxic Substances, Alternative Technology Division, EPA, to Robert Sega, Molycorp, Incorporated. August 29, 1991.)

Notice from California Department of Health Services [now the Department of Toxic Substances Control], to Molycorp. March 10, 1986. (Referenced in letter from Ronald Pilorin, State of California, Office of Toxic Substances, Alternative Technology Division, EPA, to Robert Sega, Molycorp, Incorporated. August 29, 1991.)

Silver

cahealth.new (James T. Allen, California Department of Health Services)

Letter from James T. Allen, Chief, Alternative Technology Division, Toxic Substance Control Program, California Department of Health Services to Dan Derkics, U.S. EPA. February 5, 1990.

cupel-1.new (U.S. EPA)

Memorandum from Alan Pittman, ICF, to Dan Derkics and Bob Hall, EPA. November 22, 1989.

cupel-2.new (Nevada Department of Conservation and Natural Resources, Carson City, Nevada)

Letter from Thomas Fronapfel, P.E., Environmental Engineer, Nevada Department of Conservation and Natural Resources, to John Lehman, Director, Waste Management and Economics Division, U.S. EPA. April 19, 1984.

Letter from John Lehman, Director, Waste Management and Economics Division, EPA, to Thomas Fronapfel, P.E., Nevada Department of Conservation and Natural Resources. May 9, 1984.

Titanium

lehmn_2.new (Frank Smith, Economic Analysis Staff)

Memorandum from Frank Smith, Economic Analysis Staff to John Lehman, Waste Management Division. July 3, 1986.

timet.new (Timet, Henderson, Nevada)

Memorandum from John P. Lehman, Director, Waste Management and Economics Division, to Phil Bobel, Chief, Toxics and Waste Programs Branch, EPA Region IX. June 24, 1983.

Letter from John Lehman to Phil Bobel. April 4, 1984.

Missing

timet.new (Timet, Henderson, Nevada)

Memorandum from Phil Bobel, Chief, Toxics and Waste Programs Branch, EPA Region IX, to John Lehman, Director, Hazardous and Industrial Waste Division. April 27, 1983. (Referenced in a letter from memorandum from John Lehman to Phil Bobel. June 24, 1983.)

Memorandum from Phil Bobel to John Lehman. February 24, 1984. (Referenced in a memorandum from John Lehman to Phil Bobel. April 24, 1984.)

Titanium Dioxide

dupont.new (duPont, New Johnsonville, Tennessee)

Memorandum from Donald J. Guinyard, Chief, Water Supply Branch, U.S. EPA, to James Scarbrough, Chief, Residuals Management Branch. October, 1983.

hinck_2.new (Dexter Hinckley, EPA)

Memo from Dexter Hinckley, Project Officer, EPA, Large Volume Waste Section, Special Wastes Branch, to John P. Lehman, Director, Waste Management Division. August 26, 1986.

kemira.new (Kemira, Inc., Savannah, Georgia Plant)

Letter from J. Winston Porter, EPA Assistant Administrator, to G.L. Roberts, Vice President and Technical Director, Kemira, Inc. July, 1987.

lehmn_2.new (John Lehman, Director Waste Management Division, EPA)

Memorandum from Frank Smith, Economic Analysis Staff to John Lehman, Waste Management Division. July 3, 1986.

scmchem.new (SCM Chemicals, Inc., Hawkins Point Plant)

Letter from Donald E. Knapp, Vice President, SCM Chemicals, to Mr. Stephen R. Wassersug, Director (US EPA Region III), and Mr. John Humphries, Acting Section Chief (Delmarva, DE and D.C. Section), Hazardous Waste Management Branch, US EPA. May 29, 1987.

Letter from J. Winston Porter, Assistant Administrator for Solid Waste and Emergency Response to James Seif, Regional Administrator. July 6, 1987.

Memorandum from James Scarbrough, Chief, Residuals Management Branch to Donald Guinyard, Chief, Water Supply Branch. October 24, 1983.

Memorandum from James Scarbrough, Chief, Residuals Management Branch to Donald Guinyard, Chief, Water Supply Branch. November 7, 1983.

Record of communication between Bill Steiner of EPA and James Scarbrough. November 10, 1983.

Letter from James Scarbrough, Chief, Residuals Management Branch to John Lehman, Director, Waste Management and Economics Division. November 28, 1983.

Summary of Bevill Amendment's Applicability to duPont's Titanium Dioxide Plant Wastes. November 28, 1983.

Letter from John Lehman, Director, Waste Management and Economics Division to James Scarbrough, Chief, Residuals Management Branch, Region IV. April 4, 1984.

weller.new (Janet L. Weller, Cleary, Gootlieb, Steen & Hamilton)

Letter from Janet Weller to U.S. EPA Freedom of Information Officer. May 11, 1984.

Letter from John Skinner, Director of OSW, to Janet Weller. June 15, 1984.

Missing

kemira.new (Kemira, Inc., Savannah, Georgia Plant)

Letter from G.L. Roberts, Vice President and Technical Director, Kemira, Inc., Savannah, GA, to J. Winston Porter, EPA Assistant Administrator of Solid Waste. June 25, 1987. (Referenced in Porter's response to Roberts. July, 1987.)

scmchem.new (SCM Chemicals, Inc., Hawkins Point Plant)

Letter from Charles Lettow, SCM Chemicals, to U.S. EPA Region III. May 7, 1987. (Referenced in letter from Donald E. Knapp, Vice President, SCM Chemicals, to Mr. Stephen R. Wassersug, Director (US EPA Region III), and Mr. John Humphries, Acting Section Chief (Delmarva, WV and D.C. Section), Hazardous Waste Management Branch, US EPA, May 29, 1987; and letter from J. Winston Porter, Assistant Administrator for Solid Waste and Emergency Response to James Seif, Regional Administrator, July 6, 1987.)

Uranium

duprey_1.new

**(Robert L. Duprey, Director, Air and Hazardous Materials Division, U.S.
EPA Region VII)**

Memorandum from Robert Duprey, Director, Air and Hazardous Materials Division, U.S. EPA Region
VIII, to Steffen Plehn, Deputy Assistant Administrator, U.S. EPA. October 23, 1980.

Zinc

lehm_n_2.new (John Lehman, Director Waste Management Division)

Memorandum from Frank Smith, Economic Analysis Staff, to John Lehman, Waste Management Division. July 3, 1986.

njzinc.new (New Jersey Zinc Company)

Letter from Marcia E. Williams, Director, Office of Solid Waste, to Robert E. Greaves, Chief, Waste Management Branch. January 25, 1988.

schollen.new (Mark Schollenberger, Illinois EPA, for Big River Zinc Corporation, Sauget, IL)

Facsimile from Mark Schollenberger, Illinois EPA (conveying letter prepared by Mr. Larry Estep of Big River Zinc Corporation) to Bob Hall, U.S. EPA, OSW/Waste Management Division. March 18, 1991.

Memorandum from ICF Incorporated to Bob Hall. April 11, 1991.

skinner.new (John H. Skinner, Director, Office of Solid Waste, U.S. EPA)

Confidential memorandum from Margaret B. Silver, Solid Waste and Emergency Response Division, Office of General Counsel, U.S. EPA, to John H. Skinner, Director, Office of Solid Waste, U.S. EPA. August 1, 1983.

Memorandum from Margaret B. Silver, Office of General Counsel, U.S. EPA, to John H. Skinner, Director, Office of Solid Waste, U.S. EPA. April 3, 1984.

Missing

skinner.new (John H. Skinner, Director, Office of Solid Waste, U.S. EPA)

Memorandum from John Skinner, Director, Office of Solid Waste, EPA, to Margaret Silver, Office of General Counsel, EPA. March 26, 1984. (Referenced in a memorandum from Margaret B. Silver, Office of General Counsel, U.S. EPA to John H. Skinner, Director, Office of Solid Waste, U.S. EPA. April 3, 1984.)



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

APR 7 1992

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Mr. Mark A. Smith, Attorney
Unocal Corporation
P.O. Box 7600
Los Angeles, California 90051

Dear Mr. Smith:

This letter is in response to your request for a reconsideration of the status of several waste streams generated at Molycorp's lanthanides plant at Mountain Pass, California. I would first like to thank you for hosting the February 13, 1992, EPA site visit to the Molycorp Mountain Pass mine. You and the Molycorp personnel were very helpful and cooperative with my staff during that visit. The information provided to my staff while they were on-site, as well as the additional materials shared with us in subsequent correspondence and phone calls were extremely useful in helping us to understand the complex operations at the plant.

Before responding to your specific requests, I think it important to review with you the Agency's previous decisions regarding the regulatory status of wastes from the extraction, beneficiation, and processing of ores and minerals. As you probably are aware, the Agency made a regulatory determination on July 3, 1986 (51 FR 24497), that all wastes that are uniquely associated with extraction and beneficiation of ores and minerals should remain within the Bevill exemption--that is, the Agency determined that regulation under Subtitle C of these wastes was not warranted. Therefore, the Agency decided that such wastes should be regulated under Subtitle D of the Resource Conservation and Recovery Act (RCRA).

On the other hand, the Agency has determined that relatively few wastes that are uniquely associated with mineral processing are Bevill-exempt. This is because only "high volume and low hazard" wastes are Bevill-exempt and EPA has determined that only a few mineral processing wastes satisfy these criteria. On September 1, 1989 (54 FR 36592), and January 23, 1990 (55 FR 2322), the Agency identified only 20 specific mineral processing waste streams that remain exempt (see enclosure for list of 20 mineral processing Bevill-exempt wastes); all other mineral



processing wastes are subject to Subtitle C (pending the effective date of these rules in the various states) if the wastes either exhibit one or more of the hazardous waste characteristics or are specifically listed.

Therefore, in answering your specific questions, the Agency had to determine: (1) whether the wastes in question are considered to be generated from mineral extraction, beneficiation, or processing operations, and (2) if generated from mineral processing, whether the waste was one of the 20 mineral processing wastes specifically identified by EPA as being a Bevill waste.

With that as background, the Agency's position on the status of the wastes generated by the operations at the Mountain Pass facility was first discussed in my May 14, 1991, letter (enclosed) to Ms. Paula Rasmussen of the California Department of Health Services (DHS). After reviewing the information that you provided to us in support of your request for reconsideration, we have determined that our original decisions concerning the application of 40 CFR 261.4(b)(7) to these waste streams remain valid, with one clarification. Our revised conclusion regarding the classification of the spent lead sand filters is discussed later in this letter.

After careful analysis of Molycorp's process information, we have concluded that two very distinct operations are occurring in the stage of operations that Molycorp refers to as the second "leach" step. During that step, the lanthanide oxide is being digested by hydrochloric acid, and concurrently, the cerium oxide is being leached by hydrochloric acid. In the preamble to EPA's September 1, 1989, final rule (54 FR 36618-19), we defined mineral processing as an operation that: produces materials that are physically and chemically dissimilar to their feedstocks (acid digestion is specifically referred to as an example of this); generates low volume wastes; or uses a roasting/leaching sequence to produce a final or intermediate product that does not undergo further beneficiation or processing steps.

Specifically, during Molycorp's second "leach" step, a significant portion of the feedstock is reacted with a strong acid to form lanthanide chlorides. In this step, the solid lanthanide oxide ore is reacted with hydrochloric acid to produce a liquid product, namely lanthanide chloride. This step also produces lead and iron chloride wastes, which are subsequently reacted with ammonia and sodium hydrogen sulfide, respectively, to form small volumes of solid iron hydroxide and lead sulfide wastes. In our technical judgment, both the product and wastes from this step are physically and chemically dissimilar to the ore. The term "physically and chemically dissimilar" means that the physical structure (e.g., change from solid to a liquid) and chemical properties of the products or wastes are significantly

different from the ore that entered the operation. Furthermore, this step produces low volume wastes. Therefore, according to our regulatory definition, this step is the beginning of mineral processing.

A parallel example of acid digestion is the sulfuric acid attack of phosphate matrix ore. The Agency stated in the preamble to the September 1, 1989, final rule (54 FR 36618-19) that acid digestion of phosphate matrix ore is mineral processing. This acid digestion destroys the physical structure and changes the chemical properties of the phosphate matrix ore. This type of acid digestion is similar to Molycorp's second "leach" step.

In addition, based on observations during EPA's site visit and review of Molycorp's flow diagrams, the second "leach" step also leaches the cerium oxide to produce a higher concentrate cerium oxide product. In this roasting/leaching sequence, the roasting step converts cerium (III) fluorocarbonate to cerium (IV) oxide, which then undergoes leaching with hydrochloric acid to produce a cerium oxide concentrate. With respect to the cerium oxide, the second "leach" step is the leaching portion of a roasting/leaching sequence that produces a final or intermediate product (low grade cerium concentrate) that does not undergo further beneficiation or processing steps. Therefore, according to our regulatory definition, this step is the beginning of mineral processing.

All wastes generated after mineral processing begins (54 FR 36619) are mineral processing wastes, provided they meet the definition of "uniquely associated". The wastes generated during or subsequent to the second "leach" step, which include the iron/lead mixture filter cake, lead backwash sludge, lead filter cake, iron filter cake, and SX-crud resulting from waste cleaned out of solvent extraction units are uniquely associated with mineral processing. Although these wastes are mineral processing wastes, they are not among the 20 permanently exempt mineral processing wastes and, thus, may be subject to RCRA Subtitle C if they are characteristically hazardous or they are listed as hazardous.

As we indicated above, the concept of "uniquely associated" also bears on our determination of the status of selected waste streams from the Mountain Pass facility. This concept has been used consistently by the Agency as a factor in determining which wastes would remain under the Bevill Amendment. (See 45 FR 76619, November 19, 1980 and 54 FR 36616, September 1, 1989.) Wastes not uniquely associated with mineral extraction, beneficiation, or processing include discarded commercial chemicals (such as finished mineral-derived products found to be off-specification), many cleaning wastes (such as a spent commercial solvent that was used in cleaning production vessels) and used lubricating oils. At the Molycorp plant, the pinion gear grease and spilled solvent cleaned up from the floor of the chemical plant are not uniquely associated with mineral extraction, beneficiation, or processing; therefore, as we

concluded in our initial letter to the California DHS, these wastes are not exempt mining or mineral processing wastes. Wastes that are not uniquely associated with mineral extraction, beneficiation, or processing may be subject to RCRA Subtitle C if they are characteristically hazardous or they are listed as hazardous.

However, contrary to our statements in the May 14, 1991, letter, our improved understanding of your operations at Mountain Pass leads us to conclude that spent lead sand filter cinders are uniquely associated with mineral processing operations because this waste contains waste components (e.g., lead) that originate from the orebody as a result of direct contact with the mineral values (i.e., lanthanides) being processed. Since the spent lead sand filter cinders are generated after mineral processing begins and are not on the list of 20 wastes, however, they are not Bevill-exempt.

Molycorp personnel recently indicated to us that the waste zinc contaminated with mercury is now being sold off-site as a product for recyclable zinc. If this material is not listed as a hazardous waste, is not a spent material (40 CFR 261.1(c)(1)), and is not over accumulated (40 CFR 261.1(c)(8)), RCRA would define it as a byproduct and not a waste. Since this material may not be a waste, there may be no longer a need for EPA to interpret the Bevill status of this material.

Please be assured that EPA recognizes the difficulties posed by generation and management of these non-exempt waste streams. To address these concerns, it may be possible to evaluate your process to determine whether less toxic or lower volume wastes could be generated, or whether there are recycling opportunities for these wastes. We would be most willing to work with Molycorp to examine pollution prevention and recycling options.

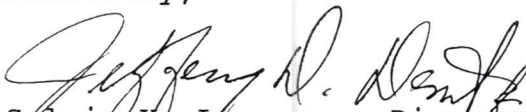
Finally, I want to take this opportunity to clarify some apparent misconceptions about the filter cake generated from the Molycorp mineral processing activities. As my staff indicated to you and Doug McAllister during recent phone conversations, according to 53 FR 37045 (September 23, 1988), mixed wastes are wastes that contain both hazardous waste subject to RCRA and radioactive waste subject to the Atomic Energy Act (AEA). However, while the waste streams generated by Molycorp may be characteristically hazardous and thus subject to RCRA Subtitle C, they do not appear to be subject to AEA because they are not "source material", "special nuclear material", or "byproduct material" (42 U.S.C. 2014). With this clarification in mind, Molycorp may want to conduct a new inquiry into the availability of off-site recycling and disposal options for the existing inventory of drummed filter cake.

It should also be noted that while the lead/iron residues may be subject to California land disposal restrictions of 22 CCR 66261.21, the Agency has not yet developed treatment standards

under EPA's Land Disposal Restrictions program--that is, EPA has not yet restricted land disposal of mineral processing hazardous wastes according to 55 FR 22528 (June 1, 1990). Thus, company concerns regarding RCRA limitations on disposal of the filter cake as early as May 8, 1992, may be alleviated.

We hope this letter adequately explains why our previous conclusions continue to be valid for the waste streams at the Mountain Pass facility. Please feel free to contact Mr. Matthew Straus, Director, Waste Management Division at (703) 308-8414 if you have any further questions or if MolyCorp would like our assistance in pursuing pollution prevention and recycling options.

Sincerely,



Sylvia K. Lowrance, Director
Office of Solid Waste

Enclosure

cc: Paula Rasmussen
Daniel McGovern

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

Enclosure

MAY 14 1991

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Ms. Paula Rasmussen, Chief
Surveillance and Enforcement Branch
State of California - Department of Health Services
245 West Broadway, Suite 350
Long Beach, California 90802

Dear Ms. Rasmussen:

In response to your inquiry, dated March 21, 1991, the U.S. Environmental Protection Agency (EPA) Headquarters has analyzed the information provided by the California Department of Health Services (DHS) pertaining to the MolyCorp Mountain Pass lanthanides plant and its solid wastes. We believe that all of the wastes identified in your letter are either mineral processing wastes that are not exempt from RCRA Subtitle C or are wastes that are not uniquely associated with mining or mineral processing. Consequently, these materials would be subject to regulation as RCRA hazardous wastes if they exhibit one or more of the characteristics of hazardous waste (e.g., toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP)). The basis for our opinion is outlined in the following paragraphs.

On September 1, 1989, EPA published a final rule (attached) establishing a formal regulatory distinction between wastes generated by ore and mineral extraction and beneficiation operations (all such wastes are exempt from Subtitle C), and wastes generated by ore and mineral processing operations (of which only 20 specific mineral processing wastes remain exempt) (54 FR 36592). Included in this final rule is a definition of eligible beneficiation operations, as well as an extensive discussion in the preamble of how this definition had been developed and how it had been and was to be applied by the Agency. Throughout this discussion, EPA stated that the distinctions between beneficiation and processing were not always immediately obvious or clear, and that decisions requiring application of the definitions presented in the rule had to be made in keeping with the spirit of the Mining Waste Exclusion and in accordance with common sense (see, for example, discussions on pp. 36618-9). In addition, the Agency made it clear in this notice that the sequences of steps may be a pertinent factor. For example, operations that might otherwise be considered beneficiation, but that follow an initial mineral processing step in a facility's production sequence, would be considered processing operations. Therefore, wastes from such operations would be considered mineral processing wastes.

With regard to the specific distinctions between beneficiation and processing operations, EPA stated that the principal difference between the two is that while both types of operations may involve the use of certain agents (e.g., heat and/or acid) to enhance the qualities of an ore or mineral, beneficiation operations, in general, do not fundamentally alter the physical structure of the mineral feedstock. That is the wastes that leave the operation generally resemble the minerals that entered the operation (are "earthen in character"). In contrast, mineral processing operations often destroy the physical structure of the mineral feedstock (e.g., through fusion or acid digestion) and generate wastes that bear little resemblance to the materials entering the operation.

With these analytical guidelines in mind, EPA reviewed the flow diagrams and other information submitted by MolyCorp through your department to determine where beneficiation ended and processing began. We make the following observations: 1) the second "leaching" step in the operation appears to more closely resemble acid digestion (a mineral processing operation) than it does a conventional leaching (beneficiation) process; 2) the resulting waste is not generated in large quantities, is not earthen in character, and appears to contain very high concentrations of toxic heavy metals, i.e., is not high volume and low hazard (the principal distinguishing characteristics of true special wastes); and 3) the wastes are currently managed on-site in exactly the same manner as are many other hazardous wastes generated at typical industrial facilities.

Therefore, EPA views the preliminary judgment made by California DHS as accurate and fully supportable, although our rationale for one waste, lead sand filter cinders, differs somewhat. None of the wastes in question are exempt. Therefore, they are subject to regulation as hazardous wastes if they exhibit one or more of the characteristics of hazardous waste. The removal of the mining waste exclusion for these wastes is already effective in states such as California where EPA continues to operate the Subtitle C program.

In Attachment 3 to your March 21, 1991 letter, you listed eight specific wastestreams generated at the MolyCorp facility for which you needed a status determination. For clarity, I will respond with the Agency's opinion for each individual waste.

1. Pinion Gear Grease

Because this waste is commonly generated at many types of industrial facilities, this waste is not uniquely associated with mineral extraction, beneficiation, or processing; therefore, it is not a mining or mineral processing waste. The rationale presented in your March 21, 1991, letter concerning this decision is correct.

2. Iron/Lead Mixture Filter Cake.
3. Lead Filter Cake. and
4. Iron Filter Cake

These are mineral processing wastes. As such they are not exempt from RCRA Subtitle C regulation, because they are not among the twenty temporarily exempt mineral processing wastes, but are instead low-volume wastes removed from the Bevill exemption by the September 1, 1989, Final Rule.

5. Lead Backwash Sludge.

This is not an exempt mining or mineral processing waste.

6. Lead Sand Filter Cinders.

Contrary to your March 21, 1991, letter, this is not a mining or mineral processing waste, since it is not uniquely associated with mineral extraction, beneficiation, or processing. The use of sand filters is not unique to mining.

7. Waste Zinc Contaminated with Mercury

This is a mineral processing waste. As such it is not exempt from RCRA Subtitle C regulation, because it is not among the twenty temporarily exempt mineral processing wastes, but is instead a low-volume waste removed from the Bevill exemption by the September 1, 1989, Final Rule.

8. SX-Crud

Spilled solvent cleaned up from the floor of the chemical plant is not uniquely associated with mineral extraction, beneficiation, or processing; therefore it is not a mining or mineral processing waste, as you noted.

Waste cleaned out of solvent extraction units is a mineral processing waste. As such it is not exempt from RCRA Subtitle C regulation, because it is a low-volume mineral processing waste removed from the Bevill exemption by the September 1, 1989, Final Rule.

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If you have further questions concerning this matter, please contact Bob Hall or Bob Tonetti at 703-308-8412 and 703-308-8424, respectively.

Sincerely,


Sylvia K. Lowrance
Director
Office of Solid Waste

Attachment

cc: Rich Vaille
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