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COMMENTS OF ORMET CORPORATION

ON THE PROPOSED REMEDIAL ACTION PLAN

FOR THE ORMET CORPORATION SUPERFUND SITE

JUNE 9, 1994

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INTRODUCTION

Pursuant to Section 430(f)(3) of the National Contingency Plan ("NCP"), 40 C.F.R. § 300.430(f)(3), Ormet Corporation ("Ormet") hereby submits its comments on the Proposed Remedial Action Plan ("PRAP") prepared by the United States Environmental Protection Agency ("EPA"), in consultation with the Ohio Environmental Protection Agency ("Ohio EPA"), for the Ormet Superfund Site (the "Site"). The PRAP for the Site was published for public comment on April 11, 1994, and EPA originally requested comments by May 11, 1994. Pursuant to 40 CFR § 300.430(f)(3), Ormet requested, and was granted by EPA, an additional 30 days through June 10, 1994, to submit its comments on the PRAP. (See Letter from R. S. Wiedman to L. Murphey dated April 19, 1994, attached as Appendix 1).

Ormet has cooperated fully with EPA and Ohio EPA throughout the Superfund process, which to this point, has spanned almost seven years. Throughout this process, Ormet has often performed tasks beyond those legally required or technically warranted, in an effort to accommodate EPA and Ohio EPA (sometimes collectively referred to as the "Agencies"). Ormet's objective has been and is to identify and implement a technically sound and cost-effective approach to address Site conditions which is consistent with the industrial setting and long-term industrial use to which this Site is and has been dedicated. The approach to this Site followed by the Agencies, with respect to the remedial investigation ("RI") and feasibility study ("FS"), has seldom been practical and has often resulted in a significant waste of time and resources. The PRAP published by EPA on April 11 reflects the Agencies' continued failure to place the Site in a proper context and acknowledge that the Site is, in fact, an operating industrial facility to which residential remediation standards are not relevant, cost-effective or

consistent with the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. §§ 9601, et seq., or the NCP.

The Superfund process has come under tremendous criticism due to careless mismanagement of resources by responsible governmental authorities. In this instance, Ormet spent over several million dollars to complete the RI/FS for this Site. Much of the cost associated with the RI/FS is due to the same administrative mismanagement for which the Agencies have been widely criticized.

Under the terms of the of the Administrative Order on Consent (the "CO") between Ormet and the Agencies for the RI and FS, Ormet is required to reimburse the Agencies for their costs, as well as the costs of Agency contractors, of which there have been many. Too often, Ormet has been forced to pay for the mismanagement and poor quality of the work performed by the Agencies and their contractors. For example, as discussed more fully in two Dispute Resolutions, dated November 7, 1991 and June 9, 1993 under Section XX of the CO, Ormet incurred costs in the tens of thousands of dollars to arrange for its representatives and its consultants to travel from long distances to Columbus, Ohio for a meeting with the Agencies (which had been confirmed the preceding day), only to have the Agencies cancel the meeting after the meeting was scheduled to begin.[1] Ormet was then forced to incur substantial expense

[1] As required by the amended CO, a project review meeting was scheduled for March 19 and 20, 1991, at which the Agencies were required to present their comments on the first FS submittal for discussion with Ormet. Ormet confirmed these meeting dates the week prior to the meeting, as well as the day before the scheduled meeting date, when Ormet and representatives were present in Columbus preparing to meet with the Agencies and the Agencies confirmed that they were prepared to meet with Ormet. Because of the wide range of topics to be covered and the importance of the meeting, Ormet had present in Columbus its representatives, lawyers and environmental consultants. The Ormet representatives were (continued...)

in correcting work performed by the Agencies and their contractors.[2] (Copies of Ormet's Dispute Resolution Requests are attached hereto as Appendices 2 and 3). Substantial amounts of time and other resources have also been expended to correct inadequate work performed by Agency contractors, responding to inconsequential, vague and often inconsistent comments on drafts of documents and in performing tasks which go beyond what was required or reasonable under the terms of the CO.

The Agencies have repeatedly and without justification accused Ormet of delaying the completion of the RI/FS process, even though Ormet has diligently worked toward the expeditious resolution of this process. In November, 1993, Ormet submitted a completed draft

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[1](...continued)
kept waiting in Columbus for a day and a half until the Agencies cancelled the meeting after the originally scheduled meeting time. The reason given to Ormet for the cancellation was that the Agencies had not finished their internal discussions and were not prepared to meet with Ormet. The meeting had to be rescheduled for April 10 and 11 and Ormet was forced to reconvene the same group of experts and legal counsel for the rescheduled meeting, which was also held in Columbus.

[2] Although the Baseline Risk Assessment ("BRA") received from the Agencies in March 1991, was supposed to be the final BRA for the Ormet Site, the document was deficient and had to be substantially revised twice and was not finalized by EPA until March, 1992. One of the most serious flaws in the BRA involved EPA's failure to properly perform the air modeling study, as agreed between Ormet and the Agencies to model transport of fugitive particulate matter from potential source areas at the Ormet Site.

One of the more glaring examples of the inadequacy of the air modeling study was the failure to model potential impacts at the selected receptor located across the Ohio River from the Ormet Site. Because EPA's contractor, Life Systems, Inc., inverted the coordinate system used in the air modeling study, the study was initially performed on a receptor point located in an unpopulated area on the wrong side of the Ohio River. EPA and a second contractor, Metcalf and Eddy, Inc., failed to correct this fatal flaw when the modeling study was reviewed prior to being published in "final form." Ormet conducted its own modeling study and found the flaws in EPA's study and provided EPA's contractor with a data file which enabled EPA's contractor to correct some of the more serious flaws.

FS Report, which was technically and factually sound and consisted of thousands of pages of text and appendices. The draft FS Report contained analyses of potential remedial measures which far exceed the level of detail found in many FS reports approved by the Agencies for other Superfund Sites, and responded to comments from the Agencies which had taken the Agencies over a year to prepare. The Agencies claimed that Ormet delayed the completion of the RI/FS process, even though as late as October, 1993, in the context of preparing an addendum to the completed FS Report, EPA was still identifying new, previously unidentified regulations, which EPA believes constitute potential applicable and relevant and appropriate requirements ("ARARs") for this Site. Under the NCP and the terms of the Amended CO, the Agencies were required to provide Ormet with all ARARs sufficiently in advance of the completion of the FS Report to allow for the proper consideration of these requirements in the comparative analysis conducted as part of the FS. See 40 C.F.R. § 300.515(d)(1) ("the lead and support agencies shall identify their respective potential ARARs and provide them to each other in a timely fashion, i.e., no later than the early stages of the comparative analysis. . . .")

In January, 1991, even though the RI had not been completed, EPA sought to amend the CO to provide for the accelerated completion of the FS Report, which would have resulted in the completion of the FS Report prior to the scheduled completion of the RI Report. Ormet agreed to the accelerated schedule requested by EPA and in return, the Agencies agreed not to proceed on a "piecemeal" basis and to provide Ormet with their comments and direction in an organized and orderly fashion. (See Letter from R.S. Wiedman to J. Lupton dated February 21, 1994, attached as Appendix 4).

Despite a revision process that can, at best be described as cumbersome, Ormet substantially complied with all of its deadlines for submitting documents and completing revisions required by the Agencies, even though the Agencies' accelerated schedule added substantial expense to this process. The Agencies, on the other hand, have repeatedly failed to meet their obligations under the CO and the agreement under which the CO was amended to provide for an accelerated completion of the FS. Indeed, in one instance the Agencies took over one year to complete their review of a draft FS Report, even though the amended CO required the Agencies to complete their review within 30 business days. Moreover, the Agencies repeatedly failed to honor their commitment to avoid proceeding on a piece-meal basis which forced Ormet to respond to vague, ill-defined and often inconsistent demands for revisions to various submittals.

The delays associated with the completion of the RI/FS process, if any, are rooted in the Agencies' failure to coordinate and review submissions on a timely basis, the piecemeal approach imposed by the Agencies in the preparation of the RI and FS Reports, and the inconsistent and disjointed comments to which Ormet frequently had to respond. The Agencies have also attempted to manipulate the Superfund process in an attempt to justify unnecessarily stringent and expensive remedial measures for areas of the Site. The remedial measures the Agencies have proposed in the PRAP do not reflect cost effective measures as required by Section 121 of CERCLA, 42 U.S.C. § 9621.

BACKGROUND[3]

Plant Operations

The Ormet Facility (the "Facility") is situated along the west bank of the Ohio River, in Monroe County, Ohio, approximately 35 miles south of Wheeling, West Virginia. The Facility occupies the northeastern half of an area known as Buck Hill Bottom, a lens-shaped stretch of land approximately 2.5 miles long and about 0.5 miles wide, at its widest point. The southwestern half of Buck Hill Bottom is occupied by another industrial facility, Consolidated Aluminum Corporation ("CAC"). The entire Buck Hill Bottom area has been used exclusively for industrial purposes for more than thirty five (35) years.

Ormet is a primary aluminum producer and employs approximately 1,500 people in the Ohio Valley region. Ormet utilizes an aluminum reduction process, producing metallic aluminum from alumina. The Facility was constructed in 1957 and began operations in 1958. Ormet and CAC obtain process water from their own deep radial wells, commonly referred to as "Ranney Wells" after the name of the company that installed the wells. These wells are located on the west bank of the Ohio River about 2100 feet apart.

Ormet produces primary aluminum from alumina. Powdered alumina (non-fibrous aluminum oxide) is shipped by barge to Ormet via the Mississippi and Ohio Rivers from a bauxite refinery located near Burnside, Louisiana. The barges dock along the river bank next to the Facility and the alumina is transferred into storage containers located at the Facility, from which it is transferred into bins above electrolytic pots. Pots are steel shells which are lined

[3] The background information provided and the points raised in this section are intended to help place Ormet's comments in context and to assist the reader in understanding Ormet's comments on the PRAP.

with pre-baked blocks of a mixture of anthracite and pitch which are joined with a small amount of similar material and baked in-situ. Ormet has 1,032 pots housed in 12 buildings at the Facility. The potliner eventually deteriorates to a point at which it must be removed and the pot is relined.

Through a computerized system, alumina is fed into a bath of molten cryolite, (at approximately 1800 degrees fahrenheit) that serves as the electrolyte in the electrolytic pots. Large carbon anode blocks, produced on-site from calcined petroleum and pitch, are installed in the electrolytic pots through which electricity enters. Direct current electricity (92,000 amperes) passes through the electrolyte in which the alumina is dissolved and then the cathode lining around the pot. During this process the carbon anode is slowly consumed and must be replaced periodically. The electro-chemical reaction that takes place separates the dissolved alumina down into two parts: molten-aluminum and oxygen. The oxygen combines with carbon from the anode blocks and is vented from the pot as carbon dioxide gas, while the aluminum collects in a molten pool in the pot. Periodically, typically every 32 hours, the pot is tapped and close to 1,500 pounds of aluminum is siphoned into a large crucible and transported to the casting house. The molten-aluminum is cast into different forms such as sows and extrusion billets. The aluminum is allowed to harden and then is prepared for shipment. Some of the aluminum is alloyed before casting to give it special properties.

Ancillary operations at the Facility include production and baking of carbon anodes for use in the reduction process. Anodes are formed by mixing various constituents which are then pressed into block form and baked for a period of time. Prior to undergoing the baking process anodes are referred to as "green anodes." During the period of 1958 to 1980,

the former spent potliner storage area ("FSPSA") was used to store spent potliners. Green anodes which did not meet Ormet's performance specifications were also stored in this area. The concentrations of polynuclear aromatic hydrocarbons ("PAHs") found in the FSPSA above the concentrations typically found in spent potliner are attributable to the green anodes stored in the FSPSA. Green anodes are not a listed hazardous waste under the federal Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. §§ 6901, et seq., or the Ohio Solid Waste Management Act, R.C. Chapter 3734, and green anodes do not exhibit hazardous characteristics.

The salt in the molten electrolyte is predominantly cryolite (Na_3AlF_6), a non-hazardous material. As the introduction of cryolite to the process continues, the integrity of the lining is adversely affected. This material will actually intercalate within the crystalline lattice of the carbon materials, causing distortion and stress within the lining. The insulating materials are similarly affected and become thermally conductive as they are impregnated with fluoride salts. Failure can occur by cracking or excessive heaving of the lining.

When these failures occur, trace amounts of cyanide are formed due to the ingress of air and subsequent reaction of nitrogen in the air with the carbonaceous portion of the lining under the extreme heat of the reduction process. This ingress of air continues and cyanide continues to be formed, until the lining deteriorates to a point where it must be removed from service to prevent molten aluminum from burning through the steel metal shell.

Cyanide is not formed in the anodes, because anodes are exposed to large amounts of air and are actually consumed in the reduction process. Similarly, because cyanide is not a

constituent of the air emissions from the process, there is no cyanide associated with residual material from air pollution control systems, such as wet scrubber sludge.

From 1958 to 1968, approximately 85,000 tons of spent potliner material were placed in an open storage area, a standard practice of the industry at that time. The FSPSA is approximately 13.8 acres and is located in the northeast portion of the Ormet property. Spent potliner was listed as a hazardous waste under RCRA in 1989. The sole hazardous constituent for which potliner was listed as a hazardous waste was cyanide. (See EPA Background Document for Spent Potliner, attached hereto as Appendix 5). Another defining characteristic of potliner is that it has a relatively high pH, although well below the level at which a material can be classified as a characteristic hazardous waste due to corrosivity. The pH of potliner is typically around 10.0.

At various times from 1958 to 1981, Ormet utilized one or more of five retention ponds (former disposal ponds ("FDPs") 1 through 5) located in the northeastern portion of the Ormet property. These ponds were constructed of natural materials in a manner consistent with the standard industrial practice at that time. A portion of pond 3 and much of pond 5 are underlain by natural layers of low permeability silt and clay, while the balance of the surface area underlying the FDPs is composed predominantly of sand and gravel.

Ormet's five disposal ponds have different operational histories. Ponds 1 through 4, the four smaller ponds, which range in size from 1.1 to 1.9 acres, were used from 1957 to 1969. When in use, these four ponds received sludge from the pot-room wet scrubber system and/or the wet scrubber system for the anode bake furnace. These FDPs also may have received very small amounts of tailings from the cryolite recovery system. Toward the end of the useful

life of these FDPs, the sludges contained in the ponds were treated through the application of an acidic solution to adjust the pH of the solids contained in the ponds. Some of the acidic solution was spent pickle liquor obtained from Wheeling Pittsburgh Steel Corporation.

From 1968 to 1981, Ormet operated an on-site cryolite-recovery plant in the southwest corner of the Facility. The cryolite recovery plant utilized a caustic digestion process to recover cryolite from spent potliner. In this process, potliner material was crushed and then slurried with weak caustic to begin the extraction process. From there, the material was sent to a digestion tank, where live steam, consisting of 2 to 3 percent steam and 50 percent caustic, were used to extract fluoride and alumina at 210 degrees Fahrenheit. From the digester, the slurry was sent to the #1 thickener, where the undissolved carbon, alumina, and other insolubles were separated from the fluoride/alumina-rich liquor. This liquor was then pumped to the carbonators, where the sodium fluoride and alumina were reacted with carbon dioxide to form cryolite (Na_3AlF_6). The solids from the #1 thickener were sent to the mud wash thickener, where additional fluoride was recovered by rinsing the solids with water. The remaining solids became the tailings, which were pumped to FDP 5. The vast majority, approximately 95%, of the spent potliner stored in the FSPSA was processed through the cryolite recovery plant. In the fall of 1980, Ormet removed remaining spent potliner from the FSPSA and sent it off-site for disposal at an approved disposal facility.

FDP 5, which is approximately 13 acres, was constructed in 1967 for the purpose of receiving tailings from the cryolite recovery system. The cryolite tailings consisted primarily of carbonaceous material from the potliner after it had been treated in the caustic digestion process. The tailings were discharged into FDP 5 in a slurry form, consisting of approximately

80% water and 20% tailings. Tailings were discharged to the pond from one of several discharge points located around the perimeter, to allow for an even distribution of sediment in the pond.

Beginning in June, 1971, Ormet began treating the cryolite plant tailings slurry and pond water using chlorine to destroy free cyanide and calcium hypochlorite to reduce fluoride. (See Ormet Chemical Services Project Group Report "Effects of Chlorine and Calcium on Cryolite Plant Pond Water" (May 26, 1971), attached hereto as Appendix 6). The treated slurry was then pumped into FDP 5 from various directions to ensure thorough mixing in the pond water.

Adjacent to FDP 5, Ormet disposed of construction and demolition debris. The majority of this material is carbon scrap, refractory brick, and metal (steel) with a lesser amount of wood paste board. These materials are believed to have been relatively inert. The vast majority of the material disposed of in the CMSD was comprised of used furnace brick which is a non-hazardous refractory brick. This material was placed throughout the CMSD, but it was concentrated particularly along the outer edge of the CMSD along the Ohio River. The entire northeastern portion of the CMSD along the eastern side of FDP 5 is comprised almost entirely of furnace brick. This material was placed in this area to support the eastern berm of FDP 5 and is identical to material which has been accepted for use as road fill/aggregate and is ideal for use as rip rap to protect against washout.

In the early 1970's, the Army Corps of Engineers began the planning and construction of a lock and dam system on the Ohio River south of the Facility, near the town of Hannibal, Ohio. As a result of the construction of the Hannibal lock and dam, the level of

the Ohio River was raised from elevation 602 to 623 mean sea level, the current elevation of the normal river pool. The United States also obtained from Ormet an easement granting certain flood control rights to the United States and restricting Ormet's right to construct structures and fill the land. (See Easement from Ormet to the United States, dated April 4, 1973, and Recorded in Deed Volume 164, page 3, Recorder's Office, Monroe County, Ohio, attached as Appendix 7).

The First Groundwater Investigation

In July and August, 1971, Ormet found that water from its Ranney Well, which is used for cooling rectifiers at the Facility, was causing unacceptable scaling. Ormet determined that the water from the Ranney well contained concentrations of certain constituents greater than that which typically occur naturally.

In December, 1971, Ormet retained Fred H. Klaer, Jr. & Associates ("Klaer"), a well-known hydrogeologic consulting firm located in Columbus, Ohio, to evaluate the geologic and hydrologic conditions between the Ranney Well and the areas upgradient of the process area of the Facility, and to recommend means of addressing the situation from the standpoint of ensuring the suitability of water obtained from the Ranney Well for process needs. (A copy of the Klaer Report is attached as Appendix 8).

During the first phase of the Klaer study, it was determined that the alterations in the water extracted by the Ormet Ranney Well were related to activities upgradient of the process areas at the Facility at the northeastern end of Ormet's property. Klaer recommended that Ormet create a negative barrier or hydraulic divide by pumping from an extraction well or wells thus, collecting the affected groundwater prior to its reaching the Ormet Ranney well.

The second phase of the Klaer study included the drilling of five additional monitoring wells between Ormet and CAC to confirm that the contaminated water had not migrated west of the Ormet Ranney Well and that the Ormet Ranney Well was serving as the hydraulic control over the movement of the contaminated groundwater. Additional monitoring wells were also installed between the Ormet Ranney Well and the upgradient source area. At the end of the second phase in the Klaer study in September, 1972, Klaer concluded that there was in effect a hydraulic divide caused by the Ormet Ranney Well situated between Ormet and CAC.

In late 1972, Klaer completed the final two phases of the first groundwater investigation. These two phases were intended to evaluate the feasibility of installing an interceptor well system to restrict and collect the flow of contaminated groundwater prior to its reaching the Ormet Ranney Well. Subsequently, an interceptor well system was installed approximately 178 feet north of the Ormet Ranney Well. In the final phase of the first groundwater investigation, Klear concluded that the installation of the interceptor well system upgradient of the Ormet Ranney Well was successful in intercepting almost all of the flow of affected groundwater prior to its reaching the Ormet Ranney Well.

The Second Groundwater Investigation

In November, 1977, Dames and Moore was retained to prepare an analysis of the hydrogeologic conditions at the Ormet Facility as a follow-up to the Klaer study. (A copy of the Dames & Moore Report is attached as Appendix 9). Dames & Moore confirmed the findings of the Klaer investigation and recommended that the interceptor well system designed and installed by Klaer be maintained and that a third interceptor well be installed to the south

of the FSPSA, adjacent to the northeastern corner of the FDPs. This third interceptor well was installed in March, 1982 and was operated until June, 1989, when it was shut down with the concurrence of EPA and Ohio EPA, because it was determined that it had no substantive effect on the containment of the plume.

The Third Groundwater Investigation

In 1983, the groundwater consulting firm of Geraghty & Miller was retained to conduct additional hydrogeologic site investigations to better define the source, nature, and extent of groundwater contamination, as well as possible remedial alternatives for addressing Site conditions. (A copy of the Geraghty & Miller Report is attached as Appendix 10). A copy of Geraghty & Miller's report was submitted to Ohio EPA on May 11, 1984. Ohio EPA acknowledged receipt of the report, but never responded to the report substantively. The Geraghty & Miller study generally confirmed the findings of the original studies done by Klaer in 1972 and Dames & Moore in 1977. It also confirmed that groundwater affected by Ormet's past practices of accumulating potliners in the FSPSA and, to a much lesser extent, the material in FDPs, was entirely confined within the boundaries of Ormet's property. Geraghty & Miller also concluded that the cyanide found in the affected groundwater beneath the Facility was predominantly iron-complexed cyanide, which is extremely stable and non-toxic. The primary source of alterations to the groundwater was identified as the FSPSA and it was noted that impacts to groundwater related to the FDPs were greatly reduced.

The Fourth Groundwater Investigation

In 1985, Geraghty & Miller was again retained by Ormet to further define the nature and extent of the groundwater alternations. During this investigation, Geraghty & Miller

installed an additional 30 groundwater monitoring wells. Ormet requested the Agencies to participate in this investigation, but the Agencies declined. Ormet was subsequently included on the National Priorities List and the Geraghty & Miller wells installed in 1985 were included in the RI conducted at the Site.

Current Groundwater Conditions

During the RI, Geraghty & Miller installed six additional monitoring wells and collected two rounds of groundwater samples from these additional wells, as well as from many of the pre-existing groundwater wells installed by Geraghty & Miller. The results of the RI confirmed Geraghty & Miller's earlier determinations that the primary source of the groundwater contamination is the FSPSA and that impacts related to the FDPs have declined naturally over time and are much less significant than the impact from the FSPSA. Indeed, the most recent analyses of groundwater samples, collected during 1988 and 1990 (four to six years ago), from wells located immediately downgradient of the FDPs indicate that the quality of groundwater directly downgradient of the FDPs meets or exceeds the drinking water standards for cyanide. (See Summary Table attached hereto as Appendix 11).

As part of its NPDES sampling program, Ormet routinely monitors the quality of groundwater at the existing interceptor wells. Data collected from the interceptor wells since 1972, clearly indicate that groundwater quality has continued to improve since Ormet discontinued use of the FSPSA. The evaluations of data collected prior to and concurrent with the RI indicate that, over time, groundwater conditions in the aquifer will continue to improve, regardless of whether remedial measures are implemented at the Ormet Site.

The geologic setting of the Ormet Facility is typical of the Ohio Valley, with deposits of coal and shales layered between the rock units outcropping along the valley wall which are subject to weathering and become incorporated in the alluvial aquifer deposits (e.g., sand and gravel) covering the valley floor. Drilling logs prepared during and prior to the RI at and around the Site noted layers or bands of "carbonaceous" or "peat type" material up to about two inches thick, imbedded within the predominantly sand and gravel aquifer matrix. These deposits can be in direct contact with groundwater in the alluvial aquifer and constitute a source of constituents dissolved in the groundwater. Because constituents such as arsenic, vanadium, manganese, beryllium and others are naturally associated with the types of geologic deposits, e.g., coal and shale, found in the Ohio Valley, they can occur in groundwater at concentrations higher than are typically found in other hydrogeologic settings.

ORMET'S GENERAL COMMENTS

Ormet's general comments are provided in this section. These comments pertain to the Addendum to the FS Report prepared by EPA, the PRAP and matters which apply to more than one area at the Ormet Site.

1. Ohio EPA's Refusal To Approve The Completed FS Report Constitutes A Violation Of The Administrative Order By Consent Re: Remedial Investigation and Feasibility Study (U.S. EPA Docket No. V-W-87-C-013) And Any Comments Submitted By Ohio EPA That Are Inconsistent With The Information Contained In The FS Report Should Be Disregarded

Ormet completed the FS Report and submitted it to the Agencies for final review in April, 1993. In October, 1993, EPA conditionally approved the FS Report as drafted, provided Ormet agreed to include at the front of the document an Addendum prepared by EPA. (A copy of EPA's letter transmitting the Addendum is attached hereto as Appendix 12). The revised Addendum was included in the FS Report subject to Ormet's express objection and specific recognition that Ormet did not agree with the contents of the Addendum. (A copy of Ormet's response to the Addendum is attached hereto as Appendix 13). By letter dated October 12, 1993, Ohio EPA disapproved the FS Report. (A copy of Ohio EPA's letter dated December 8, 1993, is attached hereto as Appendix 14). Ohio EPA also clarified, by letter dated December 8, 1993, that it "did not participate in the development of, or concur with, the U.S. EPA Addendum to the FS Report." (See Ohio EPA letter dated December 8, 1993 attached hereto as Appendix 15). In this same letter, Ohio EPA indicated that it would not sign the completion certification for the FS Report. After Ormet submitted the final FS Report, including the Addendum, EPA and Ohio EPA prepared the PRAP and conducted a public availability session in which the FS Report was held out to the public as complete.

Ohio EPA's purported objections to the draft FS Report were entirely without merit. For example, Ohio EPA alleged that the FS Report did not provide an alternative which fulfilled the requirements of the Ohio solid waste closure performance standards which were identified as a potential ARAR for this site, i.e., OAC 3745-27-11(G), for the design of a solid waste landfill. Ohio EPA did not, however, provide a reference to the specific deficiency alleged; rather, Ohio EPA simply stated that the conceptual drawings in the FS Report were inadequate. A vague comment of this nature is inappropriate and entirely inadequate to justify Ohio EPA's refusal to approve the FS Report.

Ohio EPA also stated that the FS Report did not contain a remedial component which satisfies the requirements of OAC 3745-54-18, which provides that containment measures associated with new hazardous waste landfills to be located in a 100-year floodplain must be constructed to prevent washout.[4] First, as noted previously, the CMSD contains a significant amount of brick material which is ideal for use as rip rap and has in fact adequately prevented washout for decades. Second, the standard referenced by Ohio EPA is not applicable to any of the areas at the Site because they are not hazardous waste units.

Ohio EPA also alleged that Ormet failed to establish the presence of the natural levee along the entire face of the CMSD and to provide for the protection of the seep collection

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[4] Ohio EPA's letter incorrectly states that "Ohio EPA has determined that this ARAR is applicable to the construction material scrap dump." The requirements of OAC 3745-54-18 are siting criteria which apply on a prospective basis and do not apply retroactively to the facilities which were utilized prior to the promulgation of this regulation. Since the jurisdictional prerequisites to the applicability of this regulation are not satisfied, this administrative requirement cannot and is not an "applicable" requirement. Moreover, it is entirely improper for Ohio EPA to make an administrative determination during the RI/FS process that any requirement is conclusively determined to be an ARAR. Throughout the FS process ARARs must be identified solely as "potential" ARARs.

system in the FS Report. The incorporation of the natural levee into the remedial measures for the CMSD is based upon data collected during the RI which appear to indicate that there is a natural levee along the face of the CMSD. The full extent of this natural levee has not been evaluated at this point, because such an evaluation is beyond the scope of the RI/FS process. Moreover, the presence of the natural levee is not critical to the technical sufficiency of the containment measures conceptualized in the FS Report. Consideration of the presence or absence of the natural levee is a matter better suited for the remedial design phase of the Superfund process, should the remedy to be implemented for the CMSD call for the incorporation of the natural levee into the remedial measure.

Similarly, the seep collection system described in conceptual terms in the FS Report has obviously not been designed at this point and the precise nature of the seep collection is not critical to the conceptual discussion of this remedial measure in the FS Report. There are a variety of ways to design engineering controls, such as seep collection systems, and that is the purpose of the remedial design phase of the Superfund process.[5]

Ohio EPA also suggested in its letter "disapproving" the FS Report that there was an undefined deficiency in the flood control measures for the CMSD incorporated in the FS report. Ohio EPA failed and refused, however, to identify this alleged deficiency.

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[5] Both EPA and Ohio EPA also stated in their letters that the containment measures for the CMSD contained in the FS Report do not provide for adequate "freeboard, which may be necessary because of wave action in the Ohio River . . . ." The evaluation of freeboard, if necessary, is an issue properly suited for the remedial design phase. Nonetheless, a review of the FS Report clearly discloses that freeboard was addressed in the FS Report. Figure 5.9 shows that revetments would be place above the 100 year flood level and the amount of material needed for freeboard was factored into the volume calculations for these materials contained in the FS Report.

Ohio EPA had ample opportunity to comment on the draft FS Report and the CO provided Ohio EPA with an almost unlimited editorial license. (See CO, Section X, ¶3). In fact, the Agencies took full advantage of this license in manipulating the drafting of the RI and FS Reports. After taking full advantage of this editorial license, Ohio EPA chose to remain silent with respect to the substance of the final FS Report. Even so, Ohio EPA actively participated in the preparation of the PRAP. Accordingly, Ohio EPA must be treated as having concurred in the FS Report as drafted and any comments from Ohio EPA inconsistent with the material and information included in the FS Report are irrelevant and must be disregarded.

2. The PRAP Fails To Recognize That The Cyanide Detected In Various Areas At The Ormet Site Is Predominantly Non-Toxic Iron-Complexed Cyanide

Cyanides are a group of organic and inorganic compounds that contain the CN- moiety. Cyanides can exist in various forms in the environment, ranging from toxic free cyanides to relatively non-toxic complexed cyanides. (See Cyanide Analysis Prepared by Dr. F. Jones, Geraghty & Miller (1994), attached hereto as Appendix 16). Free cyanide refers to the sum of the cyanide ion and molecular hydrogen cyanide. Simple cyanides are compounds, such as sodium cyanide, that consist of a cyanide ion and a cation. Complex cyanides are compounds in which cyanide is incorporated into a complex or complexes. See Id.

Cyanide can be absorbed into the body by all routes of exposure and, once absorbed, it can be distributed throughout the body via blood flow. See Id. In the body, free cyanide is a rapid toxicant that disrupts the transfer of energy within cells in the body. Energy transfer is disrupted because free cyanides complex with metals in various enzymes in the body

inhibiting the changes in chemical structure which are necessary for energy generation within the cells resulting in cellular disruption.

Complexed cyanides are relatively non-toxic because cyanides in the complexed form, are not free to complex with the body's enzymes. In the body complexed cyanides are relatively stable and very little free cyanide is found. The relative toxicity of complexed cyanides depends upon how stable the complex is in the environment. Some cyanide complexes disassociate relatively easily and can thereby release cyanide ions (free cyanide) which can be toxic to humans when absorbed into the body. Iron cyanide complexes, i.e., ferricyanide and ferrocyanide, are extremely stable in the environment and are considered relatively non-toxic. See Id.

The Geraghty & Miller groundwater investigation completed in 1984 concluded that the cyanide detected in various areas at the Ormet Site is predominantly iron-complexed cyanide. Subsequent analytical work performed as part of the RI supports this conclusion.

The hazardous constituent for which potliner was listed as a hazardous waste by EPA is cyanide. (See EPA Background Document for Potliner, attached as Appendix 5). The free component of cyanide is the species of cyanide which poses health concerns due to their bioavailability. (See 57 Fed. Reg. 31776, 3178 (July 17, 1992)).

The PRAP fails to account for the fact that the cyanide present at the Ormet Site is predominantly iron-complexed cyanide and is essentially non-toxic. EPA has recognized that free cyanide is the constituent in potliner which poses a risk to human health and is the reason potliner was listed as a hazardous waste. Therefore, the risks posed by areas such as the FSPSA

and groundwater are much less significant than stated in the PRAP and there is no basis for applying hazardous waste containment standards anywhere at the Site.

3. The Comparative Analysis Of Site-Wide Alternatives Performed By EPA In The Addendum And In The PRAP Are Not Accurate And To The Extent The Selection Of The Preferred Remedy In The PRAP Is Based Upon This Comparative Analysis, The Remedy Selection Process Is Not Consistent With CERCLA Or The NCP

The comparative analysis in the Addendum is not accurate and to the extent the preferred remedy selected by EPA and included in the PRAP is based upon this comparative analysis, the preferred remedy is not adequately supported. No technical basis for the scoring of specific remedial measures is provided in the Addendum and the evaluation of various containment measures in the Addendum and in the PRAP appear to contradict measures taken at other Superfund sites. With respect to the comparison of containment measures, i.e., single barrier and dual barrier caps, EPA and Ohio EPA approved an FS report which concluded that single and dual barrier caps are essentially equivalent in terms of effectiveness and reliability over the long-term. (See FS Report for the Buckeye Reclamation Superfund Site, Belmont County, Ohio (April 30, 1991), attached as Appendix 17).

With regard to the comparative analysis contained in the Addendum, Ormet provides the following specific comments:

1. The statement that interceptor wells placed closer to the source will achieve maximum contaminant levels ("MCLs") in a shorter period of time is misleading. As acknowledged in the PRAP, it is estimated that interceptor wells placed closer to the FSPSA would be expected to achieve MCLs in approximately the same amount of time as that projected for the existing extraction system (See FS Report, Appendix K);

2. Single barrier caps (RCRA Subtitle D capping standards) and dual barrier caps (RCRA Subtitle C capping standards) are both very effective over the

long term; however, dual barrier caps are almost twice as expensive as single barrier caps.[6] Therefore, single barrier caps are much more cost effective;

3. The long term reliability analysis selectively mischaracterizes the nature of various alternatives, the conclusions regarding long-term reliability are unfounded and the distinctions between site-wide alternatives are arbitrary. For example, there is no basis for concluding that site-wide alternative 3 is any less reliable than site-wide alternatives 4 through 10; and

4. As discussed in greater detail in the Specific Comments section, the conclusions regarding the implementability of various containment measures over the FDPs are unfounded. The FS Report concludes that a single barrier cap utilizing a synthetic membrane as the impermeable barrier could be installed with little or no need to stabilize the pond solids. No technical support is provided for the unfounded assertion that engineering difficulties may be experienced with the settlement of unstable material under site-wide alternatives 3, 5, 8 and 10.

The support for the comparative analysis contained in the FS Report is well documented and there is no basis for disregarding that comparative analysis and relying instead on the comparative analysis contained in the Addendum.

4. EPA's Cost-Effectiveness Analysis Required by CERCLA And the NCP Has Not Been Performed Correctly

Ormet completed the FS Report and submitted the document to the Agencies for review and approval in April, 1993. By letter dated October 12, 1993, EPA notified Ormet that it would approve the FS Report, provided Ormet agreed to include at the front of the document an addendum (the "Addendum") prepared by EPA. (A copy of EPA's letter is attached as Appendix 12; the original Addendum is attached as Appendix 18). In the original Addendum, EPA purported to perform a comparative analysis of alternatives in accordance with the NCP.

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[6] References to RCRA Subtitle D single barrier caps and RCRA Subtitle C dual barrier caps are intended to refer to the landfill capping standards applicable to solid waste and hazardous waste landfills located within the State of Ohio, respectively.

This version of the Addendum did not, however, include in the comparative analysis a comparison of the cost-effectiveness of each remedial measure.

Section 430 of the NCP, 40 CFR § 300.430, requires that each remedial alternative be compared to nine defined evaluation criteria. One of the most important of these criteria is cost effectiveness. Indeed, the cost effectiveness component of the detailed analysis is mandated by Section 121 of CERCLA which provides that:

> The [EPA] shall select appropriate remedial actions determined to be necessary to be carried out . . . which provide for cost-effective response.

[42 U.S.C. § 9621(a)].

In the original Addendum, however, EPA chose to ignore the cost-effectiveness criterion in performing its detailed analysis and formulating its ranking of alternatives.

At a meeting held in Chicago with EPA, Ohio EPA participating via telephone conference, Ormet challenged the propriety of omitting a statutorily mandated evaluation criterion from the detailed evaluation process. By letter dated November 10, 1993, EPA provided Ormet with a revised version of the Addendum in which EPA performed a cost-effectiveness analysis as part of the detailed analysis of site-wide alternatives. EPA's cost-effectiveness analysis essentially grouped alternatives and remedial measures into three different categories, low, moderate and high, based upon the alternative being considered. For example, EPA placed site-wide alternatives 1, 2 and 3 into the low cost-effectiveness category, alternatives 4, 5, 8 and 10 into the moderate cost-effectiveness category and alternatives 6, 7 and 9 into the high overall cost-effectiveness category. The cost effectiveness of the alternatives was then evaluated by comparing the three categories among each other.

EPA failed, however, to compare the cost effectiveness of various remedial measures among each other. For example, EPA selected for the CMSD a containment remedial measure which would comply with the State of Ohio and federal hazardous waste regulations, the most stringent containment requirements typically considered for a Superfund site. Nowhere in the PRAP does EPA compare the cost effectiveness of a Subtitle C cap versus less restrictive containment measures, such as a natural vegetative soil cover or a standard solid waste cap. This failure is striking, given that EPA has acknowledged that less stringent containment measures are essentially the same in terms of long-term effectiveness and permanence. See Buckeye Reclamation Superfund Site Feasibility Study Report attached as Appendix 17 and the Buckeye Reclamation Superfund Site Record of Decision attached as Appendix 19.[7]

CERCLA and the NCP require that a detailed cost-effectiveness analysis be performed and that EPA select be the most cost-effective remedial measure. In the preamble to the NCP, EPA stated that:

> EPA . . . intends that in determining whether a remedy is cost-effective, the decision-maker should both compare the cost to effectiveness of each alternative individually and compare the cost and effectiveness of alternatives in relation to one another. [Citation to Proposed Rulemaking omitted]. In analyzing an individual alternative, the decision-maker should compare, using best professional judgement, the relative magnitude of cost to effectiveness of the alternative. In comparing alternatives to one another, the decision-maker should examine incremental cost differences in effectiveness. Thus, for example, if the difference in the effectiveness is small but the difference in cost is very large,

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[7] Appendices I & J to the FS report includes computer modeling analysis for the permeability of a Subtitle C hazardous waste cap (dual barrier). The model performed to determine permeability, the HELP model, is a standard model utilized by Ohio EPA and EPA to determine the permeability of landfill caps. These modeling studies demonstrate that both a RCRA subtitle D or a RCRA subtitle C cap would virtually eliminate any infiltration.

> a proportional relationship between the two does not exist. The more expensive remedy may not be cost-effective.

[55 Fed. Reg. 8665, 8728 (March 8, 1990)]. Nowhere in the PRAP does EPA explain why it believes individual remedial measures are more cost effective than other remedial measures.

In the PRAP, EPA chose to disregard the ten site-wide remedial alternatives developed in the FS Report. Rather, EPA chose to mix and match remedial measures to design an eleventh site-wide alternative, which EPA selected as the preferred site-wide alternative for the Site. Obviously, since EPA did not compare the cost effectiveness of remedial measures against each other, there is no way to determine whether the components of the preferred remedy are cost-effective.

The absence of a proper cost-effectiveness analysis is particularly apparent with respect to the various containment measures evaluated in the FS Report and incorporated into site-wide alternatives. Consistent with the evaluation of single and dual barrier caps at other Superfund Sites located within the State of Ohio, the FS Report concludes that both single and dual barrier caps are reliable over the long-term (50 to 100 years). See FS Report at pages 6-66 and 6-102. With respect to the other evaluation criteria, such as implementability, single barrier caps generally rate higher marks than dual barrier caps. See FS Report, Chpt. 6. With respect to cost, however, single barrier caps are much less expensive at every area of the Ormet Site for which they were considered. The FS Report includes a cost-effectiveness analysis for remedial measures and, not surprising, single barrier caps are much more cost-effective than dual barrier caps at any area of the Site. Therefore, there is absolutely no basis for selecting dual barrier capping alternatives for any area at the Ormet Site and the most stringent containment measure which should even be considered is a RCRA Subtitle D single barrier cap.

5. EPA's Baseline Risk Assessment Is Based Upon Absurd Assumptions And Future Use Scenarios Which Do Not Reflect Realistic Exposure Scenarios

In the Fact Sheet published with the PRAP, as well as the PRAP itself, EPA states that it "has determined that the contamination at the Ormet Site poses an unacceptable health risk currently to trespassers and in the future to potential Site residents and therefore, it is necessary to take action to address the contamination at the Site." See EPA Fact Sheet at page 3; PRAP at page 4. This determination is based solely on the BRA prepared for EPA by its contractors Donahue & Associates, Inc. and LifeSystems, Inc. (referred to as "LifeSystems") for the Ormet Site. The BRA contains assumptions about existing and hypothetical exposure scenarios for the Site which are unreasonable and inconsistent with EPA policy. EPA defines the "reasonable maximum exposure" scenario as the "highest exposure that is reasonably expected to occur at a site." (Risk Assessment Guidance for Superfund Vol. 1, Human Health Evaluation Manual (Part A) "Risk Assessment Guidance", pages 6-4 (December, 1989). Neither the overall characterization of the Ormet Site nor any of the individual exposure scenarios even remotely qualify as reasonable. Rather, the exposure assumptions for the Site have been manipulated in a manner which grossly overstates the risk presented.

The BRA, as originally drafted, included a statement that in the area in which the Site is located, Monroe County, "future population growth of over 25% has been projected . . . ." (See, Ormet Corporation Notice of Dispute Resolution dated November 7, 1991, attached as Appendix 2.) This statement was proven by Ormet to be blatantly erroneous, as the Monroe County area has actually experienced a population decline over the last 8 years of 10.8%. See Id. at Attachment C. Ormet also pointed out in this Notice of Dispute that the

Ormet Facility is an operating industrial facility situated in a rural, but heavily industrialized area. Moreover, restrictions on construction along the Ohio River and the proximity to the CAC facility downriver and the several miles of undeveloped area upriver along the Ohio River, makes it unreasonable to assume that the Site will ever be utilized for residential purposes in the foreseeable future.

EPA's conclusions that a future residential use scenario is reasonable contradicts EPA guidance and policy. With regard to future residential and land use assumptions, EPA guidance states:

> Assume future residential land uses if it seems possible based on the evaluation of available information. For example, if the Site is currently industrial but is located near residential areas in an urban area, future residential land use may be a reasonable possibility. <u>If the Site is industrial and is located in a very rural area with a low population density and growth, future residential use would probably be unlikely.</u>

Risk Assessment Guidance at pages 6-7 (emphasis added). Consideration of a future residential use scenario at the Ormet Site also contradicts emerging EPA policy.

In a draft directive dated October 20, 1992, EPA recognized that the foreseeability of future residential uses of a site, including groundwater, should not be projected beyond 10 years. In other words, the EPA recognized that land use projections beyond 10 years would not be considered in the baseline risk assessment nor in the final remediation. (<u>See</u> EPA Draft Directive, attached as Appendix 20.)[8]

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[8] Subsequent to the promulgation of the NCP, EPA issued a ground water protection strategy entitled "Protecting the Nation's Groundwater: EPA Strategy for the 1990s." (July 1991). In this policy, EPA stated that "groundwater remediation activities must be prioritized to limit the risk of adverse effects to human health first and then to restore currently used and reasonably expected sources of drinking water and ground water closely hydrologically (continued...)

The Agencies preferred remedy completely ignores the fact that the only reasonably foreseeable use of the Site is industrial. Monroe County is sparsely populated (Census for calendar year 1990 indicates a total population of 15,497) and the population in the County is declining. Moreover, Ormet is a principal employer in Monroe County. If Ormet were no longer using the Site for its operations, population and hence, demand for residential property, would decline even more rapidly than it is at the present. Any remedy selected for the Site must reflect the fact that future residential use is such a remote possibility that it should not be considered in either the risk evaluation process or in selecting the preferred remedy.

Similarly, there is no basis for concluding that there is a potential risk associated with the Site due to on-site trespassing. In the BRA, Life Systems developed the trespasser scenario without ever consulting Ormet or obtaining actual evidence about trespassing incidents at the Ormet Site. Nonetheless, Life Systems assumed that the same hypothetical individual will trespass across the Site 32 times per year for 10 years. Such assumptions are patently absurd given the fact that the Ormet Site is an operating industrial facility with a well-trained 24 hour a day, 365 day per year security force. Ormet pointed out to Life Systems and the Agencies during the preparation of the BRA that such assumptions are absurd and that the Ormet security

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[8](...continued)
connected to surface waters, whenever such restorations are practical and attainable . . . in making remediation decisions, EPA must take a realistic approach to restoration based upon actual and reasonably expected uses of the resource as well as social and economic values." EPA Draft Directive quoting EPA Groundwater Protection Strategy and Protecting the Nation's Groundwater: EPA's Strategy for the 1990's" (July, 1991) (Emphasis added).

In the Draft Directive, EPA interpreted this objective as one to "match remedial action objectives with realistic and practicable future land and groundwater use expectations, thus allowing for protective remedies consistent with the appropriate resource use."

staff has recorded only one isolated instance of trespassing over the last 30 years when a motorist's car broke down and the driver, who was intoxicated, wandered into the facility looking for assistance. Therefore, the trespasser scenario should not be relied upon to justify remedial action at this Site and it should not be considered in determining what is an appropriate remedy.

6. Groundwater Cleanup Goals Should Recognize That The Only Reasonably Foreseeable Future Use For the Ormet Site Is Industrial And, Therefore, The Residential Use Groundwater Cleanup Goals Included In The PRAP Are Not Appropriate

The PRAP contains cleanup goals for the Ormet Site based upon the level of various constituents in groundwater which would be protective of human health if the groundwater beneath the Site were used as a source of drinking water. Specifically, the groundwater cleanup goals for PCE, beryllium, cyanide and fluoride are based upon promulgated drinking water standards, arsenic is based upon the detection limit, and manganese and vanadium reflect health-based calculations. These standards are predicated upon the assumption that in the foreseeable future people will build houses at the Ormet Site and install drinking water wells into the aquifer.

As discussed above under General Comment No. 5, a residential use scenario for the Ormet Site is patently unreasonable. Moreover, as discussed in the background section to these comments, there is no realistic potential for impacts to groundwater to affect any drinking water source. Although CAC provides Ormet with potable water from its Ranney well system, there is currently a hydraulic divide between the Ormet and CAC facilities. (See supra at pages 12 to 16). The presence of this hydraulic divide was confirmed in 1971 and has been maintained consistently since that time. There is no reasonable likelihood that this hydraulic divide will not

be maintained over the foreseeable future.[9] Therefore, clean up goals should be based upon an industrial use scenario.

7. Hazardous Waste (RCRA Subtitle C) Containment Measures Cannot Be Considered ARARs For Any Area Of The Ormet Corporation Site

During the preparation of the FS report, EPA and Ohio EPA attempted to pre-select containment measures for various areas of the Ormet Superfund Site. The measures preselected by the Agencies were the RCRA hazardous waste subtitle C capping requirements. The Agencies attempted to pre-select RCRA Subtitle C containment measures by improperly eliminating all containment measures which did not meet or exceed the RCRA Subtitle C requirements. The Agency's improper predetermination of remedial measures was the subject of a Dispute Resolution initiated by Ormet by letter dated June 3, 1991. (A copy of this dispute resolution request is attached hereto as Appendix 21.)

The Dispute Resolution initiated by Ormet challenged the Agencies' attempts to select the most stringent containment requirements available, regardless of the suitability of other less stringent requirements. In effect, the Agencies attempted to improperly implement a "topdown" approach to remedy selection at the Ormet Site, contrary to the approach followed at other Sites located in Ohio. This Dispute Resolution was ultimately resolved with the Agencies' recognition that a range of containment measures, from no action and natural vegetative soil covers through RCRA Subtitle C must be evaluated through the FS process.

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[9] Ormet is a major employer in the Ohio Valley area and if Ormet were to discontinue operations at the Site, the demand for residential development would decline even more rapidly than it already is. Moreover, because CAC obtains its potable water from the Monroe County water system, if Ormet discontinued operations at the Site, there would be no need for CAC to provide potable water to Ormet.

The only indication of the rationale for EPA's improper and premature determination of the appropriateness of RCRA Subtitle C containment measures was a memorandum dated March 15, 1991, from Judy Kleiman, RCRA/CERCLA liaison, to Rhonda McBride, RPM (the "Kleiman Memo"). (A copy of this memo is attached as Appendix 22). In this memorandum, EPA attempted to establish the relevance of RCRA Subtitle C, stating:

> The spent potliners generated at this Site from the primary reduction of aluminum are RCRA listed waste KO88. The constituent of concern for which KO88 is listed is cyanide. Contaminated soil, sediments, sludges, or groundwater at the site containing cyanide are assumed to contain KO88 and will be subject to RCRA.

The Kleiman Memo does not establish the relevance of Subtitle C by employing a "comparison between the action, location or chemicals covered by the requirement and related conditions at the site, the release or the potential remedy." Rather, the Kleiman memo identifies cyanide as a constituent of concern for spent potliner and then blindly states that RCRA Subtitle C requirements are relevant and appropriate anywhere cyanide is found.

As recognized in the PRAP, RCRA Subtitle C regulations are not applicable to the Ormet Site and cannot be considered to be an ARAR unless the requirements are both relevant <u>and</u> appropriate. In the PRAP, EPA has selected RCRA Subtitle C containment requirements for the preferred alternative associated with the CMSD and has incorporated a statement, apparently demanded by Ohio EPA, that RCRA Subtitle C requirements may be applied to the FDPs if solidification of the pond solids does not render cyanide immobile.

RCRA Subtitle C containment measures are not appropriate for any area at the Ormet Site.[10] In fact, the conditions at the Ormet Site indicate that RCRA Subtitle C capping requirements are inappropriate. The general toxicity and mobility of the hazardous substances detected in the FSPSA, the FDPs and the CMSD, as well as the relative proportions of hazardous constituents in the areas of concern, indicate that Subtitle C capping requirements are overly stringent and unnecessary. Even the BRA, which was improperly manipulated to inflate the risk posed by the Site, concluded that there is no current risk associated with any area of the Site under realistic and reasonably foreseeable use scenarios. Moreover, every remedial alternative even remotely considered throughout this process, except for the no action alternative required by the NCP, provides for the continued containment and extraction of affected groundwater, and the construction and operation of a groundwater treatment system which is in no way dependent upon reduced infiltration to effectively address groundwater conditions.

Any residual contamination at the Site from spent potliners is extremely low compared to spent potliner. Indeed, the average concentrations of total cyanide detected in each of the areas at the Site are as follows:

Concentration in Parts Per Million

FSPSA	FDP1	FDP2	FDP3	FDP4	FDP5	CMSD
49	89	100	24.9	40	170	14.5

In sharp contrast, spent potliner contains total cyanide concentrations ranging in the tens of thousands of parts per million. The concentrations of residual spent potliner

[10] Specific comments on the appropriateness of RCRA Subtitle C containment measures for the FDPs and the CMSD are provided below beginning at pages 53 and 56, respectively.

constituents present in the FSPSA, the FDPs and the CMSD are only a de minimis fraction of the concentrations found in spent potliners. Moreover, each of these areas, with the possible exception of one defined area of relative higher concentration in the FSPSA, contain concentrations of total cyanide substantially lower than even the leachate values derived from spent potliner and referenced in the KO88 background document to support the 1989 listing of spent potliner as a hazardous waste. (See Background Document attached as Appendix 5). As discussed below beginning at page 56, the actual leachate derived from the CMSD contains levels of cyanide below the levels established by EPA for delisting spent potliner as a hazardous waste. Given the very low levels of constituents typically found in spent potliner, RCRA Subtitle C containment measures which are applicable to currently generated potliner, are inappropriate for existing conditions at the Site. In contrast, the closure standards under the Ohio solid waste rules, OAC Chapter 3745, and the natural soil cover alternatives developed in the FS Report are particularly well-suited to address the conditions at the FSPSA, the FDPs and CMSD.

The closure and capping standards set forth in OAC 3745-27-11 are potentially applicable requirements to the FSPSA, the FDPs and the CMSD. These requirements were identified by the Agencies as action-specific ARARS for the Ormet Site for "any areas of contamination that are capped and placed as per the solid waste rules." (See Ohio Administrative Code ARARS for the Ormet Site). The Ohio solid waste rules represent a sophisticated set of regulations which are capable of addressing situations involving carcinogenic and other hazardous substances. OAC 3748-27-11 specifies an acceptable cap design of: (1) an impermeable soil or synthetic barrier; (2) a gradual drainage layer; and (3) a soil and

vegetative layer. This cap has been found to function in a manner essentially equivalent to the double barrier cap required under RCRA Subtitle C. (See FS Report for Buckeye Reclamation Landfill Site, attached as Appendix 17). A single barrier cap installed according to the specifications contained in OAC 3745-27-11 would allow no greater infiltration of precipitation than would a traditional RCRA Subtitle C dual barrier cap. (See FS Report, Appendices I & J). Any de minimis infiltration which might occur through either a single or dual barrier cap alternative would not generate sufficient quantities of liquids to percolate through the 40 feet of soil beneath the FSPSA or the FDPs and thereby cause further impacts to groundwater. As with the FSPSA and FDPs, any de minimis infiltration which might occur through either a single or dual barrier cap would not cause percolation through the material in the CMSD. Moreover, the CMSD is situated on top of a low permeability (commonly on the order of $1x10^{-7}$ to 10^{-8}) layer of silt and clay. Therefore, if infiltration were to percolate through the material in the CMSD, the leachate would encounter the silt and clay layer and flow laterally to the seep collection system, where it would be collected and disposed of properly without any risk to human health or the environment.

In all other respects, a single barrier cap would function as effectively as a dual barrier cap. Indeed, the FS Report and the FS reports and Records of Decisions at other Superfund sites located within the State of Ohio have recognized that dual barrier caps and single barrier caps are functionally equivalent and reliable in the long-term.

The federal Subtitle D regulations, which were in effect when the FS Report was drafted, generally recommended that a soil cover "be applied as necessary in a manner to minimize fire hazards, infiltration of precipitation, odors and blowing liter; control gas venting

and vector; discourage scavaging; and provide a pleasing appearance." 40 C.F.R. § 241.209-1 (1990). Various features of the Ormet Site render this closure alternative particularly well suited to protect human health and the environment.

A natural soil cover of a few inches or more will eliminate the potential for the airborne release of particulate matter from the FSPSA and FDPs. A natural soil cover could be installed more easily than either a single barrier cap or a dual barrier cap. This is particularly true with respect to dual barrier caps over the FDPs, where implementation of a soil cover would eliminate the need to solidify the pond solids and the potential risk associated with the solidification process. A natural soil cover would also provide the same degree of protection to human health and the environment as a single or dual barrier cap, because the aquifer beneath the site is contained and the groundwater is extracted from the interceptor wells and will be treated prior to discharge to the Ohio River.

Regardless of the cover installed over the FSPSA, the alluvial aquifer beneath the Site will continue to be impacted, to some degree, by the affected media in this area. Fluctuations in the elevation of the water table will periodically cause groundwater to come into contact with affected soil. This does not present a risk to human health, because the alluvial aquifer beneath the Site is contained, and groundwater has been and will be extracted by the interceptor wells and treated to a quality suitable for discharge to the Ohio River. Therefore, the elimination of infiltration will not eliminate the need for aquifer containment and groundwater extraction and treatment.

The CMSD is situated on top of a low permeability silt and clay layer which is on the order of 40 feet thick in this area. The flows from the seeps observed from the CMSD

metals to the groundwater. The groundwater cleanup goals contained in the PRAP fail to recognize this important site-specific consideration.

Groundwater data collected during the RI demonstrated that naturally occurring background levels of manganese are substantially above the 380 ug/L groundwater cleanup level contained in the PRAP. (See RI Report, Table 76 (MW-4 (4,870 ug/L), MW-7 (3,050 ug/L), MW-12 (1,090 ug/L), MW-13 (3,080 ug/L), MW-20 (1,350 ug/L), MW-33S (674 ug/L), MW-33D (5,910 ug/L), MW-38 (667 ug/L), MW-43S (9,780 ug/L), and MW-43D (1,410 ug/L)).[11] In addition, on June 1, 1994, Ormet collected and analyzed a sample of groundwater from monitoring well MW-41. This monitoring well is located more than 1,500 feet upgradient from the Site and has no potential to be affected by the Site. The analytical results from this sample reported total manganese at 1,300 ug/L (1,500 ug/L in the duplicate), and dissolved manganese at 1,200 ug/L. Total arsenic in this sample was reported at 40 ug/L (57 ug/L in the duplicate), and dissolved arsenic at 21 ug/L. (Laboratory results are attached as Appendix 23).

These data clearly demonstrate that the groundwater cleanup levels for these constituents in the PRAP are overly stringent and unrealistically low.

c. The health-based groundwater cleanup goal for arsenic in the PRAP has been improperly established at a level below drinking water standards

The federal drinking water standard (MCL) for arsenic is 0.05 mg/L. In other words, public drinking water supplies which provide drinking water to households across the

[11] Ormet's hydrogeologic consultants, Hydrosystems Management, Inc., identified these wells as representing naturally occurring concentrations of manganese which are not related to historical industrial impacts at the Site.

would be reduced with a properly graded soil cover and any residual flow could be effectively and efficiently addressed through collection and treatment, as necessary, prior to discharge to the Ohio River.

As discussed below beginning at page 53, cyanide contained in the FDPs is not mobile as defined by EPA. Groundwater quality from the groundwater monitoring wells located immediately downgradient of the FDPs demonstrates that existing impacts from the ponds have caused only slight alterations to groundwater quality. Indeed, as discussed in greater detail at page 54, the most recently reported concentrations of cyanide amenable to chlorination in groundwater samples from monitoring wells immediately downgradient of the FDPs are below the overly stringent cleanup goal for cyanide established by EPA in the PRAP. (See Summary Table attached as Appendix 11.)

ORMET'S SPECIFIC COMMENTS

Ormet's specific comments on the Addendum and the PRAP are contained in this section. To the extent possible, Ormet has tried to organize its specific comments in a fashion which corresponds to the elements of the preferred remedy contained in the PRAP.

Groundwater

The preferred remedial measure in the PRAP for groundwater is GW-3 which provides for the extraction of contaminated groundwater via the existing interceptor wells and treatment of contaminated groundwater by ferrous salt precipitation and gravity clarification through the existing treatment plant which will begin operation by June 19, 1994, in accordance with Ormet's NPDES Permit.

1. Ormet Supports The Selection Of Groundwater Alternative GW-3 As The Preferred Groundwater Alternative

Groundwater remedial alternative GW-3 consists of pumping one of two existing interceptor wells that are located approximately 200 feet north and upgradient of the Ormet Ranney Well. Extracted groundwater under this remedial alternative will be treated by the groundwater treatment facility which is scheduled to begin operating on or before June 19, 1994, in accordance with the terms and conditions of Ormet's NPDES Permit.

As recognized by EPA in the PRAP, the existing interceptor wells and the treatment system presently being constructed by Ormet are the most efficient and effective means of addressing the contaminated groundwater. Ormet spent extensive amounts of time and money (almost three years and over $1 million) to evaluate various treatment options for the contaminated groundwater. After an extensive research and development program, consisting of, among other things, analytical work, bench scale and pilot studies, Ormet developed a customized system for treating contaminated groundwater. This treatment system, which comprises the treatment component of groundwater remedial measures GW-3 and GW-5, has been determined by Ohio EPA to constitute best available technology ("BAT") for the groundwater.

In addition to the pumping scenario included in GW-3 and described above, the FS Report includes a second groundwater alternative, designated as GW-5, which utilizes the same basic treatment technology for addressing groundwater as GW-3, but incorporates a different groundwater extraction system consisting of two new interceptor wells that would be located immediately downgradient of the FSPSA. Appendix K to the FS Report includes an

analysis of the relative effectiveness of these two ground water remedial alternatives based upon their ability to provide: (1) continued containment of the groundwater plume; (2) removal of contaminant mass from the alluvial aquifer; and (3) restoration of groundwater quality.

As amply demonstrated in Appendix K to the FS Report, the existing pumping scenario included in remedial Alternative GW-3 satisfies each of these criteria as well as or better than the pumping scenario included in GW-5. With respect to mass removal and aquifer restoration, GW-3 and GW-5 match up almost identically. With respect to containment of the contaminant plume, however, GW-5 cannot be considered to be as reliable as GW-3. The existing extraction system (GW-3) has been operating effectively for over 20 years and is thus a very reliable system. On the other hand, the reliability of GW-5 is unknown and factors such as the ability to create and maintain drawdown and potential maintenance requirements would have to be evaluated before it could be determined whether GW-5 could perform as effectively over the long-term as GW-3. In addition, the effectiveness of the treatment system in conjunction with the GW-3 extraction system is well documented. See Appendix A to the FS Report. Indeed, the treatment system was designed to address the groundwater conditions as they exist under the GW-3 extraction scenario. The effectiveness of the treatment system and the ability to meet NPDES limits under the GW-5 extraction scenario is unknown.

Other treatment methods were evaluated in the FS, but none of them would constitute BAT and none of these methods has been proven effective on the groundwater discharge. Therefore, GW-3 is, without question, the preferred remedial measure for groundwater.

2. The Discussion In The Addendum Regarding The Aquifer Restoration Analysis Contained In Appendix K To The FS Report Is Incorrect And Misleading

The assumptions presented in Appendix K to the FS Report are based on site-specific data and constitute realistic assumptions. The estimate of the pumping rate of the hypothetical wells is based on a calculation of the volume of groundwater flowing through the aquifer along the downgradient boundary of the FSPSA and the assumption of the optimum number of wells under this pumping scenario is based upon well accepted guidelines. Moreover, regardless of the number of wells utilized to extract groundwater, the total pumping rate required to capture the groundwater passing through that section of the aquifer will be no different than the pumping rates utilized in the analysis contained in Appendix K. Similarly, the cyanide (which is predominantly an iron-complexed non-toxic compound) removal rate and the level at which cyanide concentrations in the pumping wells will level off is based upon actual data. Although wells placed closer to the source area would be expected to extract groundwater containing higher concentrations of contaminants, the total mass removal rate, which is the primary measure of the effectiveness of groundwater remediation, would be the same under either the existing pumping scenario or the hypothetical scenario discussed in Appendix K.

The statement in the Addendum regarding the effect of containment measures at the FSPSA and the impact on aquifer restoration time periods is redundant. The FS Report as drafted states that treatment and/or capping of the FSPSA would be expected to decrease the restoration time period by some amount of time. If the statement included in the Addendum is intended to imply that the highest and best use of that portion of the Ohio River Valley aquifer beneath the Ormet plant Site is anything other than industrial, it is a gross mischaracterization.

There is no reasonable potential for any use other than industrial for this site throughout the foreseeable future. The location of extraction wells under GW-3 has already been determined as these wells are currently in place and operating efficiently.

It is estimated that groundwater alternatives GW-3 and GW-5 would result in restoration of the aquifer within the same relative time periods. The combination of GW-3 and GW-5 would not result in a more rapid restoration. The statement in the Addendum that a combination of GW-3 and GW-5 would result in a shorter restoration period is without a scientific basis. Moreover, there is no basis for contradicting the statement contained in the FS Report that a treatability study to determine whether NPDES permit limits could be achieved could be completed more quickly than the three years estimated by Ormet. The three-year time estimation for a treatability study is based upon Ormet's extensive experience with treatability studies associated with the development and design of the groundwater treatment system currently under construction.

3. Drinking Water Standards Are Not Appropriate For The Ormet Site Because There Is No Reasonable Potential That The Aquifer Will Be Utilized As A Potable Water Supply During The Reasonably Foreseeable Future And The Only Reasonably Foreseeable Future Use For the Ormet Site Is Industrial

In the PRAP, EPA concludes that MCLs and non-zero MCLGs are ARARs for the Ormet Site because they are relevant and appropriate. The PRAP correctly acknowledges that MCLs and non-zero MCLGs are not applicable to the aquifer beneath the Ormet Site. However, these requirements are neither relevant nor appropriate. Section 300.5 of the NCP,

40 C.F.R. § 300.5, defines "relevant and appropriate requirements" as:

> Those cleanup standards, standards of control, and other substantive requirements, criteria limitations promulgated under federal environmental or state environmental or facility siting laws that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location or other circumstance at CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site.

The determination of whether a requirement qualifies as an ARAR because it is relevant and appropriate is a two step process. 55 Fed. Reg. 8665, 8742 (March 8, 1990); CERCLA Compliance With Other Laws Manual (U.S. EPA, Interim Final, 1988). First, the requirement must be relevant. Relevance is based upon "a comparison between the action, location, or chemicals covered by the requirement and related conditions of the Site, the release, or the potential remedy." CERCLA Compliance With Other Laws Manual at page 1-65. Second, the requirement must be appropriate. Appropriateness is determined "by further refining the [relevance] comparison, focusing on the nature/characteristics of the substances, the characteristics of the site, the circumstances of the release, and the proposed remedial action. Id.

In conducting the appropriateness analysis, the overall concern is whether the requirement is "well suited to the particular site." 55 Fed. Reg. 8665, 8743 (March 8, 1990). In addition, EPA's ARAR guidance document directs the decision-maker to consider "whether another requirement is available that more fully matches the circumstances at the site." CERCLA Compliance With Other Laws Manual at page 1-67.

There is no reasonable likelihood that the aquifer beneath the Ormet Site will ever be used as a potable water supply. As discussed above at pages 27 to 30, there is no reasonable

likelihood that the Ormet Site will ever be utilized for residential purposes and, thus, there is no reasonable likelihood that drinking water wells will be installed into the aquifer directly beneath the Ormet facility. Moreover, although the CAC facility provides Ormet with drinking water from the CAC Ranney Well, there is no realistic hydraulic potential for interconnection between the groundwater beneath the Ormet Site and the groundwater withdrawn by the CAC Ranney Well. As amply demonstrated by the numerous groundwater investigations which have been performed, dating all the way back to 1972, and the results of the RI, there exists a hydraulic divide between the CAC and Ormet facilities. Moreover, the CAC facility tapped into the municipal water system operated by Monroe County in 1990. Ormet continues to obtain drinking water from CAC's Ranney Well under an infrastructure agreement between the two companies. Because Ormet's process relies upon the Ormet Ranney Well, the only way the hydraulic divide created by the Ormet Ranney Well could be eliminated would be if Ormet were to shut down the facility, in which event there would obviously be no need to obtain drinking water from CAC. Moreover, even if there was some chance (and there is not) that the hydraulic divide between the Ormet and CAC facilities could be eliminated, Ormet would be able to immediately tap into the municipal water system. Therefore, drinking water standards, MCLs and non-zero MCLGs, are not appropriate standards to be applied to the groundwater. Cleanup standards for the Ormet Site should be health-based standards based upon an industrial use scenario.

4. The Groundwater Cleanup Goals In The PRAP For The Contaminants Of Concern Are Not Appropriate

a. The health-based groundwater cleanup goals for manganese and vanadium are incorrectly based upon subchronic exposure scenarios and an improper hazard index

The groundwater cleanup values calculated by EPA for manganese and vanadium are based upon a child subchronic exposure assumption. This approach to the development of groundwater cleanup goals is actually more conservative than the approach followed by EPA in developing drinking water standards, MCLs and MCLGs, which are deemed by EPA to be acceptable levels of constituents in public water supplies. Drinking water standards developed under the Safe Drinking Water Act, 42 U.S.C. §§ 300f to 300j-26, are based upon chronic or adult exposure scenarios. The approach followed here by EPA utilizing subchronic or child exposure scenarios to establish groundwater remedial goals results in the application of more stringent criteria than used to establish standards for public water supplies throughout the United States.

In addition, EPA improperly reduced the groundwater cleanup standard by using a hazard index ("HI"), which is the ratio of the dose resulting from exposure to a dose that will not result in any adverse health effects, of 0.5 rather than a HI of 1, as is typically the case in developing health-based Superfund cleanup goals. EPA has provided no justification for following this highly unusual approach. Although not stated anywhere in the Addendum or PRAP, if EPA has utilized an HI of 0.5 because EPA believes that manganese and another contaminant of concern have a similar toxic endpoint or impact on a similar target organ, such assumptions are unfounded and incorrect.

Ormet does not believe that health-based cleanup goals based upon a residential use scenario are appropriate for groundwater at the Ormet Site; however, using a chronic exposure scenario, the proper health-based cleanup goals under a residential scenario would be 3,700 ug/L for manganese and 260 ug/L for vanadium.

b. The cleanup standards contained in the PRAP for certain contaminants of concern are lower than background concentrations

The PRAP contains groundwater cleanup goals for manganese and arsenic, naturally occurring constituents prevalent in the Ohio Valley region, which are lower than background levels. As discussed above, groundwater cleanup goals should be based upon industrial use scenarios. The fact that some of the cleanup goals included in the PRAP are actually below background levels demonstrates that the Agencies have applied unnecessarily stringent and unrealistic cleanup goals for groundwater.

Coal, which is present in great abundance within the Ohio River Valley, is a naturally occurring source of arsenic and other metals in groundwater. An analysis of a coal sample collected just upriver from the Ormet Site during the RI, which is presented in Table 9 (sample ID# 6B-20-23) of the RI Report, reported arsenic at a concentration of 22,000 ug/kg. Concentrations of arsenic in normal soils are substantially lower, averaging only 7,200 ug/kg. (See Adriano, D.C. 1986 Trace Elements in the Terrestrial Environment, Springer-Verlog New York, Inc., 175 Fifth Avenue, New York, New York 10010, 533pp.) Over time, coal deposits exposed along the valley wall are subject to weathering and have become incorporated into the saturated deposits of the aquifer matrix thereby constituting a direct source of arsenic and other

metals to the groundwater. The groundwater cleanup goals contained in the PRAP fail to recognize this important site-specific consideration.

Groundwater data collected during the RI demonstrated that naturally occurring background levels of manganese are substantially above the 380 ug/L groundwater cleanup level contained in the PRAP. (See RI Report, Table 76 (MW-4 (4,870 ug/L), MW-7 (3,050 ug/L), MW-12 (1,090 ug/L), MW-13 (3,080 ug/L), MW-20 (1,350 ug/L), MW-33S (674 ug/L), MW-33D (5,910 ug/L), MW-38 (667 ug/L), MW-43S (9,780 ug/L), and MW-43D (1,410 ug/L)).[11] In addition, on June 1, 1994, Ormet collected and analyzed a sample of groundwater from monitoring well MW-41. This monitoring well is located more than 1,500 feet upgradient from the Site and has no potential to be affected by the Site. The analytical results from this sample reported total manganese at 1,300 ug/L (1,500 ug/L in the duplicate), and dissolved manganese at 1,200 ug/L. Total arsenic in this sample was reported at 40 ug/L (57 ug/L in the duplicate), and dissolved arsenic at 21 ug/L. (Laboratory results are attached as Appendix 23).

These data clearly demonstrate that the groundwater cleanup levels for these constituents in the PRAP are overly stringent and unrealistically low.

c. The health-based groundwater cleanup goal for arsenic in the PRAP has been improperly established at a level below drinking water standards

The federal drinking water standard (MCL) for arsenic is 0.05 mg/L. In other words, public drinking water supplies which provide drinking water to households across the

[11] Ormet's hydrogeologic consultants, Hydrosystems Management, Inc., identified these wells as representing naturally occurring concentrations of manganese which are not related to historical industrial impacts at the Site.

United States may contain levels of arsenic as high as 50 ug/L, yet the groundwater cleanup goal contained in PRAP, i.e., 0.01 mg/L, for the Ormet Site is substantially lower than the federal drinking water standard. Obviously, there is no basis for imposing groundwater cleanup standards at an industrial facility which are even lower than the standards applied to public water supplies.

5. Statements In The Addendum And In The PRAP That There Is Currently Risk Associated With Groundwater Are Not Accurate

With regard to the discussion of the risk associated with groundwater, the text of the FS Report as submitted by Ormet accurately paraphrases the BRA which concluded that no existing populations are exposed to groundwater at the Site. Since no existing population is currently exposed to groundwater, there is no current risk. EPA's conclusion that there is a current risk associated with groundwater because the BRA concluded that hypothetical people could build residences on the Ormet plant site and drill drinking water wells into the contaminated portion of the aquifer, thereby becoming exposed to contaminated groundwater, is a gross distortion of reality. The statement in the FS Report that there is no current risk associated with groundwater is accurate.

The hypothetical future residential scenario contravenes existing guidance and the realities of the Site, i.e., Ormet is an operating industrial facility located in a sparsely populated, but heavily industrialized area. Even if the scenario were considered reasonable (and it is not), it cannot form the basis for concluding that there is a current unacceptable risk associated with groundwater.

6. EPA's Predetermination That Alternate Concentration Limits Are Not Applicable Or Appropriate At The Ormet Site Is Premature And Inconsistent With The NCP

The applicability of a CERCLA alternate concentration limit ("ACL") is governed by Section 121(d)(2)(B)(ii) which provides that:

> [A] process for establishing alternate concentration limits to those otherwise applicable for hazardous constituents in groundwater under applicable standards . . . may not be used to establish applicable standards . . . if the process assumes a point of human exposure beyond the boundary of the facility, as defined at the conclusion of the remedial investigation and feasibility study, except where-
>
> > (I) there are known and projected points of entry of such groundwater into surface water; and
> >
> > (II) on the basis of measurements or projections, there is or will be no statistically significant increase of such constituents from such groundwater in such surface water at the point of entry or at any point where there is reason to believe accumulation of constituents may occur downstream; and
> >
> > (III) the remedial action includes enforceable measures that will preclude human exposure to the contaminated groundwater at any point between the facility boundary and all known and projected points of entry of such groundwater into surface water,
>
> then the assumed point of human exposure may be at such known and projected points of entry.

[42 U.S.C. § 9621(d)(2)(B)(ii); See also 40 C.F.R. § 300.430(e)(2)(i)(F)("an alternate concentration limit may be established in accordance with CERCLA section 121(d)(2)(B)(ii))]. The elimination of ACLs from future consideration based upon information currently available

is inappropriate, technically unsound and inconsistent with the NCP because there are insufficient data available to determine whether it will be practicable to obtain MCL's in the groundwater.

A technical evaluation of the potential for aquifer restoration is contained in Appendix K to the FS report, and although the conclusion reached is that MCL's may be achieved in the future, the feasibility of aquifer restoration, as recognized in a number of published reports is very difficult to predict.[12] Application of an ACL should be considered at a time when there is enough information to determine whether it is practicable to obtain MCLs. See EPA Report entitled "Guidance for Evaluating the Technical Impracticability of Ground-Water Restoration" (September, 1993). There is no basis for concluding at this time that MCLs can be practicably achieved in the aquifer beneath the Site and, therefore, it should be recognized that the application of ACL's at some time in the future may be appropriate.

Seeps

The preferred remedial measure in the PRAP for the seeps is SP-4 which provides for the collection of the ballfield and CMSD seeps using trench drains and treatment of the water collected by oil/water separation and/or carbon adsorption prior to discharge through Outfall 004.

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[12] An extensive analysis conducted by Oakridge National Laboratory of 16 groundwater pump and treat systems where aquifer restoration time periods had been predicted at the outset of the remedial action found that the time estimates for restoration were under estimated in all of the 16 cases and the practicability of achieving cleanup goals was questioned. (See Oakridge National Laboratory report entitled "The Effectiveness of Groundwater Pumping as a Restoration Technology," (May, 1991) attached as Appendix 24).

7. Ormet Supports The Selection Of Remedial Alternative SP-4 For The CMSD And Ballfield Seeps

Collection of ballfield and CMSD seeps using trench drains and treatment by means of oil/water separation and/or carbon absorption will effectively address the constituents detected in the seeps. Trench drains and treatment by oil/water separation and/or carbon adsorption are proven methods of cost-effectively addressing the constituents detected in the seeps.

The actual design of the seep collection system has not been completed at this stage of the Superfund process. Ormet would expect that any seep collection system implemented as part of a remedial action at the Ormet Site would be designed to provide for protection from flood events.

Former Spent Potliner Storage Area

The preferred remedial measure for the FSPSA in the PRAP is a combination of remedial measures FSPSA-6 and FSPSA-10. This amalgamated remedial measure would provide for in-situ soil flushing and containment with a RCRA Subtitle D (single barrier) cap, unless the flushing eliminates the direct contact threat and renders the material in the FSPSA protective of groundwater, in which case no cap would be necessary.

8. In-Situ Soil Flushing Of The FSPSA Must Be Evaluated Further To Determine What Impact It Would Have On The Groundwater Treatment System Presently Being Completed by Ormet In Compliance With The Terms And Conditions Of The Company's NPDES Permit

Ormet generally supports the concept of in-situ soil flushing for the FSPSA. However, in-situ soil flushing must be evaluated on a case-by-case basis and extensive testing,

including bench and pilot scale testing, will be necessary to determine its impact on the groundwater treatment system which will begin operation by June 19, 1994 and Ormet's ability to maintain compliance with legally enforceable effluent limitations. As discussed above, the groundwater treatment system presently being completed by Ormet was specifically designed to address groundwater extracted from the existing interceptor wells and Ormet's effluent limitations will be based upon the level of cyanide reduction achieved by the treatment system under current groundwater conditions. Soil flushing in the FSPSA could cause levels of contaminants in the groundwater to increase. If levels of the contamination in the groundwater increase due to soil flushing, Ormet may not be able to consistently maintain compliance with its NPDES permit limits. Ormet cannot be placed in the position of not being able to comply with legally enforceable effluent limitations under the terms and conditions of its NPDES permit because of impacts from a remedy implemented under Superfund.

If it is determined that in-situ soil flushing in the FSPSA would adversely affect the operation of the treatment plant or Ormet's ability to maintain compliance with the effluent limits in its NPDES permit, the soil flushing system would have to be modified (or discontinued) and/or Ormet's effluent limits would have to be revised appropriately so that compliance could be consistently achieved with the existing treatment plant before the soil flushing system could be initiated (or resumed).

9. The Cleanup Standards to Be Applied To A Soil Flushing Remedial Measure Must Be Based Upon An Industrial Use Scenario

There do not exist under Federal or Ohio law standards which would constitute ARARs for soils. Therefore, The FS report includes health-based cleanup standards for soils.

Appendix F contains the levels of constituents detected on site which would be protective of human health under an industrial use scenario. These cleanup standards were developed utilizing extremely conservative methodologies and assumptions and would be more than adequate to protect the health of people who could be potentially exposed under any reasonable likely or foreseeable use scenario, i.e., industrial use.

If soil flushing is selected as the appropriate remedy for the FSPSA in the record of decision, the effectiveness of soil flushing should be based upon obtaining the soil cleanup goals established in Appendix F. Moreover, to the extent the effectiveness of soil flushing is related to the protection of groundwater, the appropriate standard for evaluating the effectiveness of soil flushing should be industrial use-based groundwater cleanup standards. As discussed above, EPA's groundwater cleanup goals contained in the PRAP and the Addendum to the FS report are inappropriately based upon a residential use scenario for the Ormet Site and the health-based standards were developed utilizing methodologies which are inappropriate.

Former Disposal Ponds

The preferred remedy set forth in the PRAP includes remedial measure FDP-10 which would require solidification of the pond solids to provide engineering stability and to immobilize cyanide followed by a single barrier cap. If solidification does not effectively immobilize cyanide, a dual barrier cap would be required.

10. The Solids In FDP 5 Have Already Been Treated And No Further Treatment Is Necessary or Appropriate

As discussed at page 11 in 1971, Ormet developed and implemented an effective treatment system for destroying free cyanide in the cryolite tailings prior to discharging the

tailings into FDP 5 or any of the other ponds into which cryolite tailings may have been placed. This treatment process included neutralization of the caustic solution and the chemical binding of fluoride through the addition of calcium producing a calcium/fluoride compound and the destruction of free cyanide through the addition of chlorine. Data from the RI indicate that the treatment process was effective with very little free cyanide detected in the pond solids, particularly the pond solids in FDP 5.[13] Moreover, as discussed more fully below, groundwater data indicate that the FDPs are not causing or contributing to an exceedance of the overly stringent groundwater cleanup standard for cyanide selected by the Agencies and included in the PRAP.

Any containment measure associated with the FDPs should take into consideration the treatment which has already been accomplished and the fact that the FDPs are not causing an exceedance of the overly stringent MCL for cyanide. Moreover, there is no support in the PRAP for the Agencies' apparent belief that solidification would have any impact on mobility of the very limited amount of cyanide present in the FDPs. The solids in the FDPs have already undergone all the treatment that is warranted or appropriate.

[13] Of the 45 samples of solids collected from the FDPs during the RI, cyanide amenable to chlorination was not detected in 27 samples. The majority of the samples collected (31 out of 45) were from FDP 5 which is estimated to contain approximately 88% of the pond solids at the Site. Of the 31 samples collected from FDP 5, cyanide amenable to chlorination was below detection in 26 samples, approximately 84% of the samples collected.

11. Groundwater Data From the RI Clearly Establish That The Overly Stringent Cleanup Standard Selected By The Agencies For Cyanide Has Already Been Achieved

Data collected during the RI and from previous hydrogeological investigations indicate that the quality of groundwater in the alluvial aquifer beneath the Site has improved since Ormet stopped utilizing the FSPSA and the FDPs. It is also clear that the FDPs, in their current state, are not causing exceedances of the overly stringent groundwater remediation goal established in the PRAP for cyanide. Specifically, the groundwater cleanup goal for cyanide in the PRAP is based upon the MCL for cyanide which is 0.20 mg/L measured in terms of free cyanide as determined using the test method for cyanide amenable to chlorination. (See 57 Fed. Reg. 31786 (July 17, 1992)). Twelve groundwater monitoring wells at the Ormet Site monitor the potential impacts to groundwater related to the FDPs. These wells are located immediately downgradient from the ponds, yet outside the plume that emanates from the FSPSA. These wells include MW-14, MW-17, MW-33S&D, MW-34S&D, MW-39S&D, MW-40S&D and MW-42S&D.

The most recent data for cyanide amenable to chlorination from these wells collected in June/July, 1988 or February, 1990, indicate that the concentrations of cyanide amenable to chlorination in the groundwater are below the cleanup standard contained in the PRAP. (See Summary Table attached as Appendix 11). While Ormet believes that the groundwater cleanup standards contained in the PRAP are unreasonably stringent, the standard for cyanide has already been achieved and the quality of the groundwater will continue to improve, even if the FDPs are left in their current state.

12. A Single Barrier Cap Or Natural Soil Cover Could Be Installed Over The Former Disposal Ponds Without Solidification Of Pond Solids For Structural Support And, Therefore, A Single Barrier Cap Or Natural Soil Cover Over The FDPs Would Be More Readily Implementable Than A Dual Barrier Cap

A single barrier cap or a natural soil cover could be implemented over the FDPs much more readily than a dual barrier cap. The engineering analysis performed in connection with the FS estimated that the solidification which would be required to provide sufficient structural support to the solids in the FDPs to support a dual barrier cap would increase the volume of material in the FDPs by 30 to 50%. The solidification process alone would take two to three years to complete.

A single barrier cap or a natural soil cover could be installed over the FDPs without solidification. Ormet believes that a single barrier cap utilizing a flexible membrane liner ("FML") or a geosynthetic liner ("GSL") as the impermeable layer in a single barrier cap design would be implementable without solidifying the pond solids to provide structural support for the cap. Obviously, a natural soil cover could be installed over the FDPs without solidification as well. Therefore, a single barrier cap or a natural soil cover would be much more readily implementable than a RCRA Subtitle C cap. As discussed in detail in the FS report, a single barrier cap is as reliable as a dual barrier cap and would be as effective in reducing infiltration. A natural soil cover would eliminate any potential risk and as discussed in greater detail above, the overly stringent groundwater cleanup goal selected in the PRAP for cyanide is not exceeded in the groundwater downgradient of the FDPs. Moreover, any de minimis impacts from the FDPs is more than adequately addressed by the existing interceptor well extraction system and the groundwater treatment system which Ormet will begin operating

by June 19, 1994. In addition, solidification of pond solids could pose a risk to workers performing the solidification via the inhalation pathway. This issue could be avoided through the application of an FML or GSL single barrier cap or a natural soil cover.[14]

Construction Materials Scrap Dump

The PRAP identifies CMSD-5 as the preferred remedial measure for the CMSD. This redial measure would consist of recontouring and containment by a dual barrier cap and placement of rip/rap or other engineering controls to prevent washout of CMSD materials.

13. The PRAP Imposes Containment Measures On the CMSD Which Are More Stringent Than Required And More Stringent Than The Containment Measures Imposed At Other Superfund Sites In Ohio

The remedial measure selected in the PRAP for the CMSD is more stringent than the capping standards applied at landfills located within the State of Ohio that accepted hazardous substances and hazardous wastes for disposal. For example, the Records of Decision published by EPA with the State of Ohio's concurrence, for the Coshocton City Landfill, Bowers Road Landfill and the Buckeye Reclamation Superfund Sites indicate that these landfills all received hazardous substances and/or hazardous wastes from industrial facilities and that there were

[14] Even if dual barrier capping standards were relevant and appropriate (and they are not) for the FDPs, the Ormet Site would be entitled to a waiver under 40 C.F.R. § 300.430(f)(1)(ii)(C)(3). Solidification of the pond solids is technically impractical in light of the time it would take to accomplish the task, the increased volume of material and the risk to the workers performing the task. A single barrier cap or a natural soil cover would be equally effective at eliminating any potential risk associated with the FDPs and a single barrier cap would be as effective at reducing infiltration. Groundwater at the edge of the Site boundary is better the drinking water standard for cyanide and any other potential impacts associated with groundwater under either a single barrier cap or natural soil cover scenario would be effectively addressed by means of the existing interceptor well system and the groundwater treatment system which will begin operation by June 19, 1994.

releases of such substances from the landfills into the environment. (Copies of these Records of Decision are attached as Appendices 25, 26 and 19, respectively). Nonetheless, single barrier caps were selected as the appropriate containment measure for these sites.[15]

As discussed above, dual barrier capping standards are not appropriate at any area at the Ormet Site; this is particularly true with respect to the CMSD. The CMSD is comprised predominantly of construction and demolition debris and de minimis amounts of hazardous substances. The Ohio solid waste regulations represent a sophisticated set of regulations which are capable of addressing situations involving hazardous substances. As discussed above, a properly constructed single barrier cap would function in a manner essentially equivalent to a dual barrier cap and would allow no greater infiltration of precipitation than would a dual barrier cap. (See FS Report Appendix J). Any de minimis infiltration which might occur under either a single or dual barrier cap alternative would not generate sufficient quantities of liquids to percolate through the CMSD material. Moreover, the CMSD is situated on top of a low permeability (on the order of $10x^{-7}$ to 10^{-8} cm/sec) layer of silt and clay. Therefore, if infiltration were to percolate through the material in the CMSD, the leachate could be collected and disposed of properly without any risk to human health or the environment. A natural soil cover would also reduce infiltration to some degree, thus reducing the flow of the seeps which could be readily collected and treated, as necessary, prior to discharge.

Both a single barrier cap and a natural soil cover would present significant advantages in terms of implementability. Both a single barrier cap and a natural soil cover could

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[15] See also EPA's municipal landfill superfund guidance entitled "Conducting Remedial Investigations/Feasibility Studies for CERCLA Municipal Landfill Sites (February, 1991).

be installed over the CMSD with less recontouring than that which would be required with a dual barrier cap. A dual barrier cap, on the other hand, would require extensive regrading which, as discussed in greater detail below, is not technically feasible because of the adverse effect it would have on the stability of the berm around FDP 5.

Groundwater data collected from monitoring wells downgradient of the CMSD indicate that the overly stringent groundwater cleanup standards contained in the PRAP have been achieved with the limited exception of manganese.[16] Therefore, there is no basis for imposing capping standards on the CMSD to protect groundwater.

14. The Quality Of The Leachate From The CMSD Is Better Than The Standards Established By EPA For Delisting Waste From The Treatment of Spent Potliner

EPA claims in the PRAP that RCRA Subtitle C containment measures are necessary for the CMSD because cyanide was detected in the CMSD seeps and that this, therefore, establishes that cyanide is mobile within the CMSD. However, the level of cyanide detected in the CMSD seeps ranges from 79 to 950 parts per billion ("PPB"), levels which are substantially below the level established by EPA for delisting waste from the treatment of spent potliner waste. Indeed, no free cyanide was detected in the CMSD itself and the levels detected in the seeps from the CMSD were essentially below drinking water standards.[17]

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[16] Concentrations of manganese downgradient of the CMSD are within a range that can be considered naturally occurring. (See supra at pages 46 to 47.

[17] The proposed MCL for cyanide is 0.2 mg/L (measured in terms of cyanide amenable to chlorination). All but one sample from the seeps reported concentrations of cyanide amenable to chlorination below the MCL and on an average basis, the level of cyanide amenable to chlorination is below the MCL.

On December 30, 1991, EPA published a final rule establishing waste-specific delisting standards for waste from the treatment of spent potliner. See 56 Fed. Reg. 67197 (December 30, 1991). According to EPA, the standards established in this final rulemaking are protective of the environment, even when such material is placed in a sanitary landfill or Subtitle D type facility. Moreover, EPA has recognized that when waste material meets the delisting standards, it may be reused or recycled. Ormet understands that one primary aluminum producer, Reynolds Metals Corporation, has delisted spent potliner treated via a thermal process according to the standards established by EPA and the material is presently being considered for use as road aggregate. (See Newspaper articles attached as Appendix 28).

Data from samples of the leachate from the CMSD collected from the seeps show that any spent potliner in the CMSD is present in amounts so small that the leachate generated by the CMSD contains constituents at concentrations substantially below the delisting standards for waste from treated potliner.[18] The delisting standards established for total cyanide based

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[18] The only constituent detected in the CMSD seeps at levels above the delisting standards is fluoride. The delisting standard for fluoride is 48 ppm. Fluoride was detected in the CMSD seeps at levels ranging from 62 to 160 ppm with a mean value across all CMSD seeps of 92 ppm. The fluoride detected in the CMSD seeps is likely related to the cryolite which was disposed of in the CMSD. Cryolite is a chemical compound consisting of fluoride, aluminum and sodium and contains approximately 540,000 ppm fluoride. Cryolite is not, however, a hazardous waste. The levels of fluoride compared to the levels of cyanide detected in the CMSD seeps indicate that the fluoride is not related to the small amounts of spent potliner in the CMSD.

In addition, a high Ph is an indicator of the presence of potliner constituents. The Ph of the CMSD seeps was reported during the RI at approximately 8.0 which is two orders of magnitude lower that the Ph associated with potliner. (The pH in the plume from the FSPSA is generally in the range of 9 to over 10). A pH of 8.0 is, however, consistent with what would be expected with presence of cryolite constituents. Therefore, the fluoride detected in the CMSD seeps is interpreted to be related to the presence of cryolite, and not potliner, in the CMSD.

upon leachable concentrations is 2.4 ppm. Potliner material exhibiting leachable levels of cyanide as high as 2.4 ppm, over 2½ times higher than the highest level of total cyanide detected in the seeps, may be delisted and can be applied to the ground and used as road aggregate.

Since the levels of total cyanide detected in the seeps are substantially below the delisting standards established by EPA for potliner, hazardous waste capping standards are certainly not appropriate for the CMSD.

15. Ohio EPA's Demands For the Incorporation Of A Flood Dike Around The CMSD Are Entirely Inappropriate

Ormet developed a hazardous waste dual barrier cap alternative for the CMSD and included this remedial measure in the FS Report. A component of this remedial measure consisted of flood control measures to prevent washout and to protect the cap. These flood control measures consisted of rip rap or concrete revetments, consistent with the practices of the United States Army Corps of Engineers along the Ohio River.

Ormet received comments on the draft FS Report containing the flood control measures described above which directed Ormet to incorporate a "flood dike" into the hazardous waste cap design. During a project review meeting held to discuss the Agencies' comments on the draft FS Report in February, 1993, Ormet asked the Agencies to clarify the Agencies' directive for Ormet to develop a "flood dike" in conjunction with a hazardous waste cap for the CMSD. Initially the Agencies were unable to respond to Ormet's request for clarification and the issue was tabled so that the Agencies could discuss their comment internally. After the

second day of the project review meeting, the Agencies indicated that they would have to consult with their respective program personnel and they would get back to Ormet.

During a series of conference calls between Ormet and the Agencies, it became apparent that the directive to design a flood dike for the CMSD was from Ohio EPA and at Ormet's request, Ohio EPA agreed to provide Ormet with an example of a "flood dike." Subsequently, as an example, Ohio EPA provided Ormet with a diagram of a "floodwall" which was approximately 8 feet tall and approximately 25 feet wide at the bottom and approximately 7 feet wide at the top. Although Ormet questioned the basis for this Agency directive, Ormet requested its engineering consultant to develop, in conceptual form, a design for a floodwall for the CMSD.

After a thorough investigation of this issue, Ormet reported back to the Agencies that the floodwall demanded by Ohio EPA was technically infeasible and beyond the scope of any relevant regulatory program. Indeed, to fulfill Ohio EPA's demand for a flood wall would require a massive engineering and construction undertaking. Because the CMSD is situated immediately adjacent to the Ohio River, the construction of a stable floodwall would require a structure approximately 45 feet high and 1,450 feet long, extend approximately 30 feet into the Ohio River, require a temporary coffer dam approximately 50 to 60 feet into the Ohio River and would cost approximately $20,000,000.

After further discussions during which Ormet pointed out the absurdity of Ohio EPA's demand for a flood wall, the Agency apparently rescinded their demand for a floodwall and, instead directed Ormet to develop as part of the hazardous waste capping remedial measure whatever flood control measures would be necessary to prevent washout in accordance with

OAC 3745-54-18 and 40 C.F.R. § 264.18. The FS Report as drafted includes rip rap and concrete revetments as two different types of flood control measures which would prevent washout.

Ormet reaffirms its position that there is no legal or factual basis for Ohio EPA's demands for a flood wall in conjunction with any remedial measure for the CMSD. OAC 3745-54-18 and 40 C.F.R. § 264.18(b) provide that:

> Floodplains. (1) in a 100-year floodplain must be designed, constructed , operated, and maintained to prevent washout or (sic) any hazardous waste by a 100-year flood, unless the owner or operator can demonstrate . . . that:
>
> (i) Procedures are in effect which will cause the waste to be removed safely, before flood waters can reach the facility, to a location where the wastes will not be vulnerable to flood waters; or
>
> (ii) For existing surface impoundments, waste piles, land treatment units, landfills, and miscellaneous units, no adverse effects on human health or the environment will result if washout occurs, considering:
>
> (A) The volume and physical and chemical characteristics of the waste at the facility;
>
> (B) The concentration of hazardous constituents that would potentially affect surface waters as a result of washout;
>
> (C) The impact of such concentrations on the current or potential uses of and water quality standards established for the affected surface waters; and
>
> (D) The impact of hazardous constituents on the sediments of affected surface waters or the soils of the 100-year floodplain that could result from washout.

As discussed above, hazardous waste standards cannot be considered to be ARARs for the CMSD. Even if the State and federal hazardous waste regulations were relevant and

appropriate (and they are not), there is no basis for incorporating a floodwall into the cap design for the CMSD. The rip rap and revetments discussed in the FS Report are more than adequate to address 100-year flood conditions. Moreover, the CMSD is composed predominantly of furnace brick particularly along the outside edge of the CMSD. This material is very heavy and immobile and acts essentially as rip rap. This material has also accepted by the Army Corps of Engineers for use as rip rap.

In addition, although it is highly unrealistic to even consider the possibility of washout, no adverse affects to human health or the environment would result if washout were to occur given the level of hazardous substances contained in the CMSD and the assimilative capacity of the Ohio River.

16. To The Extent Any Landfill Capping Standards Are ARARs For The CMSD, The Slope Requirements Should Be Waived Because It Is Technically Infeasible To Reshape Certain Portions Of The CMSD

Ormet does not believe that it would be feasible to recontour the CMSD to meet the slope requirements for landfill caps specified in the solid and hazardous waste regulations. The material placed in the CMSD along FDP 5 was placed to provide stability to the pond berm. If this material from the CMSD were pulled back or removed to meet the slope requirements specified for Subtitle D and Subtitle C caps, the berm along the river side of pond 5 may not be able to contain the weight of the pond and could fail. Accordingly, to the extent solid waste or hazardous waste landfill capping standards have been identified as ARARS for the CMSD, the slope requirements under the pertinent regulations should be waived pursuant to 40 C.F.R. § 300.430(f)(1)(ii)(C)(3).

Carbon Runoff And Deposition Area

The PRAP selects CRDA-3 as the preferred remedial measure for the CRDA. This remedial measure provides for the complete excavation of the CRDA material and consolidation in the CMSD.

18. Ormet Generally Supports The Remedial Measure Selected For The CRDA Because It Represents A Cost Effective Means Of Addressing This Area

Ormet generally supports a remedial alternative selected for the CRDA involving excavation and consolidation. Ormet believes that the most suitable place for consolidation of the CRDA material would be FDP-5. Any cap or cover installed over FDP5 will likely require grading to ensure proper drainage. To achieve the grade necessary to drain any cover over FDP, it will be necessary to add material to FDP 5 to achieve the proper grade. The CRDA material is perfectly suitable for this purpose.[19] The material is a non-hazardous carbonaceous material which is very similar to the material contained in FDP5. Ormet believes that FDP 5 would be the most accessible and suitable area for consolidation of the CRDA material.

[19] During the Ecological Assessment one sample from the CRDA indicated the potential presence of PCBs in one location. The presence of PCBs in this area is questionable since the results from that sample were not verified. Nonetheless, even if some isolated portion of the CRDA contains PCBs, that area could be segregated and handled in a manner consistent with the ultimate disposition of PCB-contaminated sediments. The balance of the CRDA material could be consolidated with FDP5.

Sediments

The PRAP identifies SED-7 as the preferred remedial measure for sediments. This remedial measure provides for the dredging of sediments from the backwater area at the mouth of the 004 Outfall area and solidification and consolidation in the CMSD. Any sediments with PCB concentrations of greater than 50 ppm must be disposed of off-site at an EPA-approved landfill or facility.

19. Ormet Generally Supports The Approach Proposed In The PRAP For Addressing Sediments But Ormet Believes That A Predetermination About Whether Sediments Are Disposed Of On-Site In A Properly Constructed Facility Or Off-Site At An EPA-Approved Landfill Or Facility Is Not Appropriate

Ormet supports the Agencies' determination that no action is warranted with respect to the sediments in the Ohio River. In addition to the rationale provided in the PRAP, it should be noted that the levels of contaminants detected in the River sediments were very low. Indeed, with respect to PCBs the mean value of the PCBs detected was 1.1 ppm compared to a cleanup standard of 1 ppm based upon EPA's Sediment Quality Criterion Guidance ("SQC"). The SQC is a very conservative approach for developing cleanup goals for sediments. Because it is not a promulgated regulation, it cannot be considered to be an ARAR and rigid application of the guidance in establishing cleanup standards would not be appropriate. See 55 Fed. Reg. 8665, 8745 (March 8, 1990). Therefore, in light of the rationale contained in the PRAP and the reasons stated above, Ormet supports the Agencies' no action decision for the Ohio River sediments.

Ormet recognizes the applicability of the federal PCB regulations promulgated under the Toxics Substances Control Act, 15 U.S.C. §§ 2601 to 2671, to the ultimate disposition

of sediments dredged from the backwater area that contain PCBs. However, a determination of whether where PCB-contaminated sediments at levels greater than 50 ppm, if any, should be disposed of is premature. The proper time for determining where PCB-contaminated sediments should be disposed of is better suited for the remedial action phase of the Superfund process.

CONCLUSION

Ormet specifically reserves the right to supplement the Administrative Record in this matter to address issues raised in other comments and/or matters raised in the Record of Decision.