

US EPA ARCHIVE DOCUMENT

DCN PH4P044

COMMENTS American Forest & Paper Association

RESPONDER SM

SUBJECT AMEN

COMMENT EPA's proposal not to ban purportedly nonamenable wastes from land-based biological treatment systems is correct.

RESPONSE

EPA is not prohibiting certain decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are "amenable" to biological treatment. As is discussed in the April 8, 1996 partial withdrawal notice to the LDR Phase III final rule (61 FR 15660), the *Land Disposal Program Flexibility Act of 1996*, signed by the President on March 26, 1996, provides that the wastes in question are no longer prohibited from land disposal once rendered nonhazardous. Because they are decharacterized before they enter the impoundment, these wastes are no longer prohibited wastes under RCRA, and any cross-media transfer of hazardous constituents cannot be regulated under RCRA.

It should be noted that the legislation does, however, mandate EPA to undertake a 5-year study to determine any potential risks posed by cross-media transfer of hazardous constituents from these surface impoundments. Comments and data which have been submitted in response to the Phase III and Phase IV rulemakings addressing the issue of amenability of wastes to biological treatment will be considered as part of this 5-year study. The findings of this study may result in proposed regulations for these units, if risks are in fact found that would warrant such regulation.

DCN PH4P044

COMMENTS American Forest & Paper Association

RESPONDER SM

SUBJECT AMEN

COMMENT EPA Is Correct When It Proposed Not To Ban Nonamenable Wastes

From Land-based Biological Treatment Systems. EPA reports in the Phase IV preamble that "the Environmental Technology Council (ETC) has suggested that EPA develop regulations restricting Subtitle D surface impoundment disposal of organic compounds and metals resistant to biological degradation in these units." 60 Fed. Reg. 43677 (emphasis added). ETC's "suggestion" is just that; it is not backed up by supporting data or persuasive rationale. For that reason alone EPA's proposal to reject this suggestion is correct and AF&PA supports that result. There are other reasons to reject the ETC "suggestion." AF&PA agrees with the Agency that CWA effluent limitations are the appropriate way to address ETC's concerns about nonamenability. *Id.* In this regard, the NCASI wastewater and sludge data discussed above demonstrate that constituents in paper industry wastestreams do not present significant risks to human health and the environment. Consequently, as EPA notes, the Agency can be reasonably certain that treatment in paper industry impoundments is adequate and that the "nonamenability issue" is of no practical consequence. AF&PA also agrees with the Agency's identification of numerous technical impediments to banning purportedly nonamenable wastes from biological treatment impoundments. EPA correctly observes that operating conditions in these impoundments can vary widely, making it difficult to conclude on a national level whether constituents are or are not amenable to biological treatment. Also, constituents that may not be regarded as amenable at the point of generation, may be rendered amenable by transformation processes in CWA treatment trains. Moreover, processes like acclimation of the biomass and phenomena like co-metabolism commonly result in biodegradation of constituents which ETC suggested are nonamenable. 60 Fed. Reg. 43677. ETC's "suggestion" about banning purportedly nonamenable wastes is an example of proof by assertion. They offer no data. For example, ETC claimed that "'ICR waste streams nonamenable to biological treatment'" include "ICR wastes with 'water insoluble and highly volatile' F039 constituents . . . ." 60 Fed. Reg. 11717-18 (March 2, 1995). To illustrate that generalizations such as this are just plain wrong, NCASI analyzed data it gathered during original research

on biodegradability to determine whether water solubility and volatility are likely to have any effect on amenability of compounds in surface impoundments. NCASI began by conducting a two-phase study to gather data concerning the biological treatability of 14 organic compounds. In the first phase of this study NCASI determined biodegradation rate constants for these compounds using bench-scale reactors. In the second phase of the study the fate of individual compounds was estimated during full-scale treatment using the NOCEPM model, with the bench-scale biodegradation rate constants entered as a model input. The percentage of each compound that was removed by biodegradation can be used as a relative indicator of biological amenability. Complete details about this study appear in Douglas A. Barton, Summary of Results of Biotreatability Study of Selected BDAT Compounds, November, 1995 ("NCASI Biotreatability Report") which is attached as Appendix F. Next, Henry's Law constants were obtained from EPA's treatability manual. These values can be used to express a relative tendency of each compound to evaporate from a water solution. Water solubility for each compound was obtained from the Envirofate Database. Graphs 1 and 2 present the percentages of removal by biodegradation for each compound studied as a function of volatility and water solubility, respectively. Acetone and methanol are not depicted on Graph 2 as complete miscibility cannot be represented graphically. An analysis of variance on the regression for each graph shows that no significant relationship exists between either volatility or water solubility and the amenability of a compound to biodegradation. Tables 9 and 10 show the analysis of variance for, respectively, volatility and water solubility. As the NCASI Biotreatability Study and data analyses show, for the 14 organic compounds examined, volatility and water solubility cannot be used to predict the amenability to biological treatment of these compounds in surface impoundments. Thus, EPA was correct in rejecting ETC's "suggestion" about banning purportedly non-amenable wastes from land-based biological treatment systems.

An analysis of variance on the regression for each graph shows that no significant relationship exists between either volatility or water solubility and the amenability of a compound to biodegradation. Tables 9 and 10 show the analysis of variance for, respectively, volatility and water solubility.

As the NCASI Biotreatability Study and data analyses show, for the 14 organic compounds examined, volatility and water solubility cannot be used to predict the amenability to biological treatment of these compounds in surface impoundments. Thus, EPA was correct in rejecting ETC's "suggestion" about banning purportedly non-amenable wastes from land-based biological treatment systems.

#### RESPONSE

EPA is not prohibiting certain decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are "amenable" to biological treatment. As is discussed in the April 8, 1996 partial withdrawal notice to the LDR Phase III final rule (61 FR 15660), the *Land Disposal Program Flexibility Act of 1996*, signed by the President on March 26, 1996, provides that the wastes in question are no longer prohibited from land disposal once rendered nonhazardous. Because they are decharacterized before they enter the impoundment, these wastes are no longer prohibited wastes under RCRA, and any cross-media transfer of hazardous constituents cannot be regulated under RCRA.

It should be noted that the legislation does, however, mandate EPA to undertake a 5-year study to determine any potential risks posed by cross-media transfer of hazardous constituents from these surface impoundments. Comments and data which have been submitted in response to the Phase III and Phase IV rulemakings addressing the issue of amenability of wastes to biological treatment will be considered as part of this 5-year study. The findings of this study may result in proposed regulations for these units, if risks are in fact found that would warrant such regulation.

DCN PH4P065

COMMENTS Safety-Kleen Corp.

RESPONDER SM

SUBJECT AMEN

COMMENT 7. Safety-Kleen concurs with EPA that there is no need to ban nonamenable wastes from biological treatment in surface impoundments. In the Phase III LDR proposal, the Agency discussed the possibility of banning "nonamenable constituents" from biological treatment surface impoundments. In this Phase IV LDR proposal, EPA makes the determination that such a ban is not necessary, because the provisions in the Phase III and Phase IV LDR rulemakings are sufficient to protect human health and the environment, and because it would be technically infeasible to implement such a ban. Safety-Kleen commends the Agency for its realistic, common sense evaluation and dismissal of an infeasible and ineffective proposed requirement.

RESPONSE

EPA is not prohibiting certain decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are "amenable" to biological treatment. As is discussed in the April 8, 1996 partial withdrawal notice to the LDR Phase III final rule (61 FR 15660), the *Land Disposal Program Flexibility Act of 1996*, signed by the President on March 26, 1996, provides that the wastes in question are no longer prohibited from land disposal once rendered nonhazardous. Because they are decharacterized before they enter the impoundment, these wastes are no longer prohibited wastes under RCRA, and any cross-media transfer of hazardous constituents cannot be regulated under RCRA.

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DCN PH4P015  
COMMENTS BP Oil  
RESPONDER SM  
SUBJECT AMEN  
SUBJNUM 015  
COMMENT

We support EPA's decision not to ban nonamenable wastes from biological treatment systems.

We agree with EPA that the transfer of nonamenable constituents to air, leaks, sludges, and discharges to surface waters is best addressed by the Phase III and Phase IV LDR rulemaking which is designed to protect human health and the environment from hazardous constituents. There is no need to issue separate regulations addressing nonamenable wastes. The comments being submitted by the American Petroleum Institute (API) will provide additional information and data on petroleum refinery wastewaters to support EPA's decision on this issue.

#### RESPONSE

EPA is not prohibiting certain decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are "amenable" to biological treatment. As is discussed in the April 8, 1996 partial withdrawal notice to the LDR Phase III final rule (61 FR 15660), the *Land Disposal Program Flexibility Act of 1996*, signed by the President on March 26, 1996, provides that the wastes in question are no longer prohibited from land disposal once rendered nonhazardous. Because they are decharacterized before they enter the impoundment, these wastes are no longer prohibited wastes under RCRA, and any cross-media transfer of hazardous constituents cannot be regulated under RCRA.

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DCN PH4P019  
COMMENTS Asarco  
RESPONDER SM  
SUBJECT AMEN  
SUBJNUM 019  
COMMENT

Asarco supports EPA's proposal to refrain from banning non-amenable wastes from land-based biological treatment systems. Asarco supports EPA's conclusion that it should not promulgate regulations restricting Subtitle D Surface impoundment disposal of organic compounds and metals resistant to biological degradation in those units. EPA correctly stated in the Proposed Rule that the existing provisions in Phase III and the forthcoming provisions in Phase IV of the LDR program will adequately protect human health and the environment, so that the regulation of non-amenable wastes would be unnecessary. 60 Fed. Reg. 43677. Asarco acknowledges and endorses EPA's concern that the "technical impediments" to such regulation are too burdensome to impose upon the regulated industry. Id.

#### RESPONSE

EPA is not prohibiting certain decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are "amenable" to biological treatment. As is discussed in the April 8, 1996 partial withdrawal notice to the LDR Phase III final rule (61 FR 15660), the *Land Disposal Program Flexibility Act of 1996*, signed by the President on March 26, 1996, provides that the wastes in question are no longer prohibited from land disposal once rendered nonhazardous. Because they are decharacterized before they enter the impoundment, these wastes are no longer prohibited wastes under RCRA, and any cross-media transfer of hazardous constituents cannot be regulated under RCRA.

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DCN PH4P018  
COMMENTS Commenter Mobil Oil  
RESPONDER SM  
SUBJECT AMEN  
SUBJNUM 018  
COMMENT

EPA should not specify constituents that are non-amenable to biological treatment because as data provided by API demonstrates:

- Many constituents that the Environmental Treatment Council listed as non-amenable are in fact amenable.
- Constituents that are genuinely non-amenable are absorbed on bio-sludge and do not leach, per TCLP testing.

#### EPA SHOULD NOT SPECIFY CONSTITUENTS THAT ARE NON-AMENABLE TO BIOLOGICAL TREATMENT

Proposed lists of constituents that may be non-amenable to biological treatment were provided to EPA by the Environmental Treatment Council (ETC). ETC's argument that certain organic compounds and metals are not amenable to biodegradation and shouldn't be allowed in non-hazardous surface impoundments is flawed from both a technical and regulatory perspective. From a regulatory perspective, the pathways for release of such compounds are already being addressed in the Phase IV rule, so the designation of compounds as non-amenable is not necessary to protect the environment. From the technical perspective, ETC's arguments are just wrong, based on the data which API has developed and submitted for the record with its comments. As demonstrated by the API study conducted by ERM-Southwest, many of the compounds designated by ETC as non-amenable were in fact amenable to treatment based on actual refinery data. Moreover, those constituents which were not biodegraded were absorbed onto the biological sludges which exit these bioreactors. TCLP testing of these sludges demonstrates that the constituents do not leach from these sludges and thus, do not pose a threat to underlying groundwater.

#### RESPONSE

EPA is not prohibiting certain decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are "amenable" to

biological treatment. As is discussed in the April 8, 1996 partial withdrawal notice to the LDR Phase III final rule (61 FR 15660), the *Land Disposal Program Flexibility Act of 1996*, signed by the President on March 26, 1996, provides that the wastes in question are no longer prohibited from land disposal once rendered nonhazardous. Because they are decharacterized before they enter the impoundment, these wastes are no longer prohibited wastes under RCRA, and any cross-media transfer of hazardous constituents cannot be regulated under RCRA.

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DCN PH4P020  
COMMENTER  
RESPONDER SM  
SUBJECT AMEN  
SUBJNUM 020  
COMMENT

B. Because ABTs treat all UHCs in wastewater and wastewater sludge to below UTS, EPA should not define amenable and non-amenable constituents

Exxon supports EPA's position not to ban non-amenable constituents from management inland-based units. Exxon encourages EPA to consider API's comments on the issue of amenable and non-amenable constituents. Exxon opposes designation of "amenable" and "non-amenable" constituents and encourages EPA to select ABT as a technology-based standard for our industry. ABT is considered Best Available Treatment (BAT) under the CWA and is the basis for wastewater UTS. See 58 FR 29864 on May 23, 1993. The court has not required EPA to address the issue of non-amenable, so EPA should refrain from doing so in the Phase IV LDR.

D. API data shows that ABTs treat rather than volatilize UHCs. ABTs are not "media-transfer" units.

Prior to the issuance of the Phase III LDR proposal, API recognized the importance of ABTs as a technology that provides effective and proven treatment of wastewaters. An extensive sampling and analysis effort from ten refineries (some of which had co-located petrochemical plants) was undertaken. Exxon participated in the sampling and analysis effort at its Baytown, Texas Complex. The Baytown Complex includes a 396,000 Barrel/Day refinery and a large petrochemical complex producing polypropylene, paraffins, hydrocarbon solvents, aromatics and other chemical commodities. A subsequent sampling effort of four refineries discussed in the API Phase IV LDR comments has "closed the material balance" around ABTs. The data shows that UHCs are either treated in the ABT or tightly adsorbed onto the sludge (i.e., not leachable above TCLP limits) but are not volatilized.

#### RESPONSE

EPA is not prohibiting certain decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are "amenable" to

biological treatment. As is discussed in the April 8, 1996 partial withdrawal notice to the LDR Phase III final rule (61 FR 15660), the *Land Disposal Program Flexibility Act of 1996*, signed by the President on March 26, 1996, provides that the wastes in question are no longer prohibited from land disposal once rendered nonhazardous. Because they are decharacterized before they enter the impoundment, these wastes are no longer prohibited wastes under RCRA, and any cross-media transfer of hazardous constituents cannot be regulated under RCRA.

It should be noted that the legislation does, however, mandate EPA to undertake a 5-year study to determine any potential risks posed by cross-media transfer of hazardous constituents from these surface impoundments. Comments and data which have been submitted in response to the Phase III and Phase IV rulemakings addressing the issue of amenability of wastes to biological treatment will be considered as part of this 5-year study. The findings of this study may result in proposed regulations for these units, if risks are in fact found that would warrant such regulation.

DCN PH4P024  
COMMENTS Union Camp  
RESPONDER SM  
SUBJECT AMEN  
SUBJNUM 024  
COMMENT

E. EPA is Correct in its Proposal Not to Ban Nonamenable Wastes From land-based Biological Treatment Systems.

EPA reports in the Phase IV preamble that "the Environmental Technology Council (ETC) has suggested that EPA develop regulations restricting Subtitle D surface impoundment disposal of organic compounds and metals resistant to biological degradation in these units." 60 Fed. Reg.43677 (emphasis added).

ETC's "suggestion" is just that; it is not backed up by supporting data or persuasive rationale. For that reason alone EPA's proposal to reject this suggestion is correct and UCC supports that result.

There are other reasons to reject the ETC "suggestion." UCC agrees with the Agency that CWA effluent limitations are the appropriate way to address ETC's concerns about nonamenability. In this regard, the NCASI wastewater and sludge data discussed above demonstrate that constituents in paper industry waste streams do not present significant risks to human health and the environment. Consequently, as EPA notes, the Agency can be reasonably certain that treatment in paper industry impoundments is adequate and that the "nonamenability issue" is of no practical consequence.

UCC also agrees with the Agency's identification of numerous technical impediments to banning purportedly nonamenable wastes from biological treatment impoundments. EPA correctly observes that operating conditions in these impoundments can vary widely, making it difficult to conclude on a national level whether constituents are or are not amenable to biological treatment.

Also, constituents that may not be regarded as amenable at the point of generation, may be rendered amenable by transformation processes in CWA treatment trains. Moreover, processes like acclimation of the biomass and phenomena like co-metabolism commonly result in biodegradation of constituents

which ETC suggested are nonamenable. 60Fed. Real 43677.

As the NCASI study and data analyses show, for the 14 organic compounds examined, volatility and water solubility cannot be used to predict the amenability to biological treatment of these compounds in CWASIs. Thus, EPA was correct in rejecting ETC's "suggestion" about banning purportedly non-amenable wastes from land-based biological treatment systems.

## RESPONSE

EPA is not prohibiting certain decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are "amenable" to biological treatment. As is discussed in the April 8, 1996 partial withdrawal notice to the LDR Phase III final rule (61 FR 15660), the *Land Disposal Program Flexibility Act of 1996*, signed by the President on March 26, 1996, provides that the wastes in question are no longer prohibited from land disposal once rendered nonhazardous. Because they are decharacterized before they enter the impoundment, these wastes are no longer prohibited wastes under RCRA, and any cross-media transfer of hazardous constituents cannot be regulated under RCRA.

It should be noted that the legislation does, however, mandate EPA to undertake a 5-year study to determine any potential risks posed by cross-media transfer of hazardous constituents from these surface impoundments. Comments and data which have been submitted in response to the Phase III and Phase IV rulemakings addressing the issue of amenability of wastes to biological treatment will be considered as part of this 5-year study. The findings of this study may result in proposed regulations for these units, if risks are in fact found that would warrant such regulation.

DCN PH4P031  
COMMENTS Department of Energy  
RESPONDER SM  
SUBJECT AMEN  
SUBJNUM 031  
COMMENT

II. Proposal Not to Ban Nonamenable Wastes From Land-Based Biological Treatment systems

II.B Rationale for Proposing Not to Ban Nonamenable Wastes From Biological Treatment Systems

1. p. 43677, col. 2 -- EPA explains its reasons for deciding not to prohibit certain decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are "amenable" to biological treatment.

DOE agrees that the key issue in deciding whether nonamenable decharacterized wastes should be banned from impoundment-based wastewater treatment systems concerns whether cross-media transfers of hazardous constituents would occur in the absence of such a ban. DOE also agrees that the provisions of the LDR Phase III and IV rules (i.e., end-of-pipe limits on hazardous constituents coupled with a regulatory option to address potential hazardous constituent releases), when effective, will protect human health and the environment from risks caused by cross-media transfers of hazardous constituents from impoundment-based wastewater treatment systems, including those accepting nonamenable wastes. Therefore, DOE supports EPA's decision to not ban nonamenable decharacterized wastes from impoundment-based wastewater treatment systems.

RESPONSE

EPA is not prohibiting certain decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are "amenable" to biological treatment. As is discussed in the April 8, 1996 partial withdrawal notice to the LDR Phase III final rule (61 FR 15660), the *Land Disposal Program Flexibility Act of 1996*, signed by the President on March 26, 1996, provides that the wastes in question are no longer prohibited from land disposal once rendered nonhazardous. Because they are decharacterized before they enter the impoundment, these wastes are no longer prohibited wastes under RCRA, and any cross-media transfer of hazardous constituents cannot be regulated under RCRA.

It should be noted that the legislation does, however, mandate EPA to undertake a 5-year

study to determine any potential risks posed by cross-media transfer of hazardous constituents from these surface impoundments. Comments and data which have been submitted in response to the Phase III and Phase IV rulemakings addressing the issue of amenability of wastes to biological treatment will be considered as part of this 5-year study. The findings of this study may result in proposed regulations for these units, if risks are in fact found that would warrant such regulation.



DCN PH4P036  
COMMENTS American Iron & Steel Institute  
RESPONDER SM  
SUBJECT AMEN  
SUBJNUM 036  
COMMENT

AISI supports EPA's proposal not to prohibit certain decharacterized wastes from placement into CWA surface impoundments based on assumptions about whether the wastes are "amenable" to biological treatment in such impoundments. As discussed below, such a prohibition would be unnecessary and inappropriate.

The issue of whether or not to prohibit "non-amenable" wastes from CWA surface impoundments was originally raised by the Environmental Technology Council ("ETC") in comments on EPA's March 1993 Supplemental Information Report on potential responses to the court decision in Chem Waste II. Apparently, ETC was concerned that certain constituents might not be adequately treated in biological impoundments, but instead might simply be transferred into the environment in the form of leaks, volatilization, sludges, or discharges to surface waters. In this way, the risks associated with the constituents might not be "minimized," as required under the statute, and human health and the environment might not be adequately protected.

As an initial matter, AISI believes that ETC's focus on wastes that are supposedly "non-amenable" to biological treatment is fundamentally flawed. It is well established that virtually all organic compounds, and many inorganic constituents (e.g., cyanide, ammonia, nitrate, and thiocyanate), are susceptible to biological degradation under certain conditions. See, e.g., 60 Fed. Reg. at 11,719 ("there are no organic chemicals, other than [certain] polymers, which are absolutely resistant to biological degradation"). The extent to which these compounds can be biologically degraded depends upon a wide variety of factors, including the overall composition of the waste stream, the variability of the waste stream, the dimensions and design of the impoundment, the ambient temperature, the time that the waste is retained in the impoundment, the amount of agitation that the contents of the impoundment are subjected to, the nature of the microbes in the impoundment, and the acclimation of those microbes. See generally *id.* at 11,718-19. As EPA has acknowledged, "[c]onstituents that are amenable to treatment in one system may be nonamenable in another." *Id.* at 11,719.

Accordingly, it makes no sense to focus in the abstract on constituents that are "non-amenable" to biological treatment. The only other possible approach would be to try identifying "non-amenable" constituents on a site-specific basis. However, the Agency has properly concluded that this approach would present an impossible administrative burden. 60 Fed. Reg. at 43,677.

Even if it were possible to identify constituents that are non-amenable to Biological Treatment (on a generic or site-specific basis), it does not follow that those constituents should be prohibited from placement in CWA surface impoundments. There are many forms of legitimate treatment other than biodegradation that can take place in such impoundments. For example, metals can be complexed within surface impoundments to form compounds that are highly immobile in the environment. Wastes also can be treated in surface impoundments by means of pH adjustment, cooling, and physical separation (e.g., settling and de-emulsification). These types of good engineering practices should not be discouraged under the LDR program. Moreover, even if a constituent is not treated in a surface impoundment, it may be treated in another portion of the wastewater treatment system of which the impoundment is only a part. For example, a constituent that is not amenable to biological treatment within an impoundment may be subjected to some other form of treatment in tanks "upstream" or "downstream" of the surface impoundment. In these situations, it would clearly be inappropriate to prohibit the constituents from being added to the wastewater treatment systems or from being placed in the impoundments. Indeed, managing the constituents in such systems may be the most efficient, sensible, and protective option available. To the extent that EPA continues to be concerned that placement of supposedly "non-amenable" wastes into CWA surface impoundments may not result in legitimate treatment, may not "minimize" risks, or may not be protective of human health and the environment, such concerns should be adequately addressed by other regulatory provisions. As the Agency itself has noted, if constituents are not excessively migrating to ground water through leaks, to air through emissions, adsorbing onto sludge sediments, or being discharged at the end of the pipe, they must be undergoing legitimate treatment in the form of destruction, removal, or immobilization. See 60 Fed. Reg. at 43,677. The upcoming Phase III LDR rule will be designed specifically to ensure that hazardous

constituents are not merely being discharged from CWA impoundments at the end of the pipe. As discussed above, AISI believes that other regulatory programs are adequate to ensure that hazardous constituents are not simply being transferred to the environment in the form of leaks, volatilization, or sludges. See Section II.C, above. Even if EPA concludes that additional controls on these releases are warranted, such controls presumably will be promulgated under other portions of the Phase IV rule, without regard to the "amenability" of particular constituents to biological treatment. Thus, a prohibition on the placement of "non-amenable" constituents in CWA impoundments is not necessary to ensure that such constituents are being legitimately treated. Moreover, if the constituents are being legitimately treated, and releases to the environment are being adequately controlled, the risks associated with the constituents necessarily are being "minimized," as required by the statute, thereby protecting human health and the environment.

For the reasons set forth above, it would be inappropriate, unnecessary, and probably impossible to impose a prohibition on placement of "non-amenable" constituents or wastes in CWA surface impoundments. Accordingly, AISI urges EPA to finalize its proposal not to establish such a prohibition.

#### RESPONSE

EPA is not prohibiting certain decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are "amenable" to biological treatment. As is discussed in the April 8, 1996 partial withdrawal notice to the LDR Phase III final rule (61 FR 15660), the *Land Disposal Program Flexibility Act of 1996*, signed by the President on March 26, 1996, provides that the wastes in question are no longer prohibited from land disposal once rendered nonhazardous. Because they are decharacterized before they enter the impoundment, these wastes are no longer prohibited wastes under RCRA, and any cross-media transfer of hazardous constituents cannot be regulated under RCRA.

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DCN PH4P048  
COMMENTS Chemical Waste Management  
RESPONDER SM  
SUBJECT AMEN  
SUBJNUM 048  
COMMENT

The EPA is proposing not to ban nonamenable wastes from land-based biological treatment systems because the Agency believes the key issues of whether the nonamenable constituents are being transferred to air, leaks, sludges, or discharged to surface waters will best be addressed by the end-of-pipe limits on constituents proposed in Phase III or the three options proposed in this rulemaking.

CWM supports the approach by the Agency, however, CWM is concerned that the Agency appears to be offering conflicting information regarding the justification for supporting this option. CWM requests clarification from the Agency regarding why it discusses the Phase III end-of-pipe proposal to address this issue. Yet in another section of the proposal the Agency states that it does not support this approach. (See 60 Fed. Reg. at 43,659). The Agency needs to evaluate which position it is supporting with regard to the end-of-pipe issue. CWM does not believe that the Phase III end-of-pipe proposal addresses this issue if the Agency is not in support of this type of control on discharges to surface impoundments.

#### RESPONSE

EPA is not prohibiting certain decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are "amenable" to biological treatment. As is discussed in the April 8, 1996 partial withdrawal notice to the LDR Phase III final rule (61 FR 15660), the *Land Disposal Program Flexibility Act of 1996*, signed by the President on March 26, 1996, provides that the wastes in question are no longer prohibited from land disposal once rendered nonhazardous. Because they are decharacterized before they enter the impoundment, these wastes are no longer prohibited wastes under RCRA, and any cross-media transfer of hazardous constituents cannot be regulated under RCRA.

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DCN PH4P053  
COMMENTS COMMENTER Texaco  
RESPONDER SM  
SUBJECT AMEN  
SUBJNUM 049  
COMMENT

Texaco supports EPA's conclusion in the preamble to the proposed rule, that it is unnecessary to ban "non-amenable" wastes from land-based aggressive biological treatment units. This is further supported by API's extensive comments and a detailed evaluation conducted by E.M.-Southwest, Inc. on the regulatory and technical flaws of ETC's argument that certain compounds are not amenable to biodegradation.

#### RESPONSE

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It should be noted that the legislation does, however, mandate EPA to undertake a 5-year study to determine any potential risks posed by cross-media transfer of hazardous constituents from these surface impoundments. Comments and data which have been submitted in response to the Phase III and Phase IV rulemakings addressing the issue of amenability of wastes to biological treatment will be considered as part of this 5-year study. The findings of this study may result in proposed regulations for these units, if risks are in fact found that would warrant such regulation.

DCN PH4P063  
COMMENTS Laidlaw  
RESPONDER SM  
SUBJECT AMEN  
SUBJNUM 063  
COMMENT

2.0 Proposal Not to Ban Non-Amenable Wastes From Land-Based Biological Treatment systems

LES does not support EPA's decision not to ban non-amendable wastes from Biological Treatment systems. The Agency has stated that "significant" impediments exist to banning these wastes, but fails to provide a convincing argument supporting such a decision. A review of the docket indicates that a document submitted by the Environmental Technology Council in 1994 supporting such a ban was not included in the docket material. This document shows that non-amenable wastes are not treated by the biosystem but are merely transferred to the sludge which eventually accumulates in the bottom of the treatment impoundment. Thus, it appears that EPA, by not supporting such a ban, is violating the directive put forth by the Court to address cross-media transfer of hazardous constituents.

RESPONSE

EPA is not prohibiting certain decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are "amenable" to biological treatment. As is discussed in the April 8, 1996 partial withdrawal notice to the LDR Phase III final rule (61 FR 15660), the *Land Disposal Program Flexibility Act of 1996*, signed by the President on March 26, 1996, provides that the wastes in question are no longer prohibited from land disposal once rendered nonhazardous. Because they are decharacterized before they enter the impoundment, these wastes are no longer prohibited wastes under RCRA, and any cross-media transfer of hazardous constituents cannot be regulated under RCRA.

It should be noted that the legislation does, however, mandate EPA to undertake a 5-year study to determine any potential risks posed by cross-media transfer of hazardous constituents from these surface impoundments. Comments and data which have been submitted in response to the Phase III and Phase IV rulemakings addressing the issue of amenability of wastes to biological treatment will be considered as part of this 5-year study. The findings of this study may result in proposed regulations for these units, if risks are in fact found that would warrant such regulation.

DCN PH4P064  
COMMENTS Commenter Dow Chemical  
RESPONDER SM  
SUBJECT AMEN  
SUBJNUM 064  
COMMENT

Dow supports the decision not to ban nonamenable wastes from land-based biological treatment systems. The rationale presented by EPA accurately represents the facts surrounding this issue.

#### RESPONSE

EPA is not prohibiting certain decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are "amenable" to biological treatment. As is discussed in the April 8, 1996 partial withdrawal notice to the LDR Phase III final rule (61 FR 15660), the *Land Disposal Program Flexibility Act of 1996*, signed by the President on March 26, 1996, provides that the wastes in question are no longer prohibited from land disposal once rendered nonhazardous. Because they are decharacterized before they enter the impoundment, these wastes are no longer prohibited wastes under RCRA, and any cross-media transfer of hazardous constituents cannot be regulated under RCRA.

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DCN PH4P066  
COMMENTS API  
RESPONDER SM  
SUBJECT AMEN  
SUBJNUM 066  
COMMENT

ABT provides extremely thorough treatment of UTS constituents. Analysis of refinery ABT effluent presented in API's Phase III comments verified that all but one of the VOC and PAH compounds were below UTS upon discharge from the ABT impoundments. API has further verified that most of this treatment occurs by means of biodegradation. Described in detail later in these comments under a discussion of so-called "non-amenable" compounds, is a recent ERM-Southwest study (Appendix A) further verifying that all PAH effluent concentrations from ABTs at four refineries were orders of magnitude below UTS for wastewaters. A mass balance for these PAH compounds was performed, which found that biodegradation was by far the primary removal mechanism. Also presented in the "non-amenable" discussion is evidence that the most common VOCs found in refinery wastewaters are biodegraded in ABT units. Therefore, it is clear that effective treatment of wastewater is occurring within ABT units.

#### VI. EPA Should Not Specify Constituents that are Non-amenable to Biological Treatment

As EPA correctly points out in the draft preamble, it is unnecessary to ban "non-amenable" wastes from land-based ABT units. In their comments to the Phase III LDR proposal, ETC contends that certain organic compounds and metals are not amenable to biodegradation, and therefore should not be allowed in these Subtitle D impoundments. This argument is flawed from both a regulatory and technical perspective.

In a regulatory sense, any pathways for "non-amenable" to be released to the environment are already being evaluated in this Phase IV rule. Technically, the argument is flawed in two respects: first, it presumes non-amenable for many compounds which are amenable to biotreatment; second, it presumes that biodegradation is the only environmentally responsible treatment mechanism by which compounds can be removed in an ABT unit.



### Regulatory Perspective

As part of the Phase IV proposal, EPA evaluates pathways for exposure to the environment from constituents in surface impoundments. If EPA deems that these pathways present an unacceptable risk, then further regulation may be appropriate. "Non-amenable" have been included in EPA's analysis of the Phase IV rule, along with any other constituents normally found in industrial wastewater. As EPA stated in the draft preamble to the Phase IV rule, "if [non-amenable] are not excessively migrating to ground water through leaks, to air through emissions, adsorbing onto sludge sediments, or being discharged at the end of the pipe, then EPA can be reasonably certain that treatment in the impoundment is adequate."

Additionally, air emissions and excessive adsorption onto sludge are already controlled through existing regulatory requirements. VOC emissions from refinery wastewater impoundments are regulated under the refinery MACT rule and the benzene waste NESHAP. Excessive adsorption of constituents onto biosludge is regulated upon the sludge's removal from the impoundment, under the toxicity characteristic. As EPA states in the preamble to this proposed rule, since leaks from impoundments are already being evaluated, it is not necessary to evaluate potential impacts from sludge until it is removed, when it could present a separate path for environmental impact.

### Technical Perspective

Two treatment processes are at work in the ABT units. They are biotreatment and adsorption, and both play a part in the treatment of "non-amenable." They are discussed in detail below.

### Biodegradation

Many of the "non-amenable" compounds listed by ETC in their comments to the Phase III rule are indeed degradable. It has been proven, through literature and field study discussed below, that biological degradation, not stripping, is the primary treatment mechanism for both Volatile Organic Compounds (VOCs), and Polyaromatic Hydrocarbons (PAHs), also referred to as Polynuclear Aromatics (PNAs), in land-based ABT units.

Predictions of biodegradation rates based on constituent characteristics have been performed. In the memo presented as Appendix B, relative contributions of biodegradation and

volatilization are displayed for the most common VOC and PAH compounds in petroleum refinery wastewater by plotting biodegradation constants versus Henry's Law constants (a Henry's Law constant measures the tendency of a given constituent to volatilize from water to air, and are widely available in literature). The biodegradation constants were derived from actual laboratory experimental data. Two graphs were created with biodegradation constants on one axis and Henry's Law Constants on the other. The graphs correspond with diffused and surface aeration cases. Lines were then plotted on the graphs to represent equal percentage biodegradation of the influent constituents for a given pair of biodegradation and Henry's Law constants. The plots indicate that more than 99% of the BTEX compounds, and approximately 90% of naphthalene can be biodegraded, depending on the type of ABT unit utilized.

In the recent ERM-Southwest study discussed earlier and presented in Appendix A, a mass-balance was performed for PAHs in three refineries. Influent concentrations and flow rates were used to identify masses of PAHs entering the ABTs. Likewise, effluent concentrations and flow rates identified the mass of PAHs leaving the units. For sludges, total PAH concentration and sludge generation data were used to determine the mass of PAHs adsorbed to the sludge. It was assumed that given the low Henry's Law constants for PAHs, air emissions from PAHs in the impoundments was negligible. The rate of biodegradation was therefore calculated from the following: the biodegraded mass divided by the influent mass results in the percentage of the constituent which has been biodegraded. The biodegraded mass is derived from the total mass of the constituent in the influent minus the sum of the constituent mass adsorbed to the sludge, the constituent mass emitted into the air (negligible), and the constituent mass in the effluent.

This study found that for all 18 PAH constituents, biodegradation was by far the primary removal mechanism. In fact, 14 of the 18 PAHs averaged greater than 90% biodegradation in the three refinery mass balances. Additionally, of the six analytes sampled in this study which were also listed as "non-amenable" or "recalcitrant" by ETC, benzo(a)pyrene, benzo(b)fluoranthrene, benzo(g,h,i)perylene, benzo(k)fluoranthrene, dibenzo(a,h)anthracene, and indeno(1,2,3-c,d)pyrene, biodegradation rates ranged from 84.4% to 98.2%. The only exception to this was

one facility in which benzo(g,h,i)perylene was less than 1% biodegraded. Since the other biodegradation rates for benzo(g,h,i)perylene were above 76%, and the influent concentration for this constituent at this refinery was very low, it is assumed that this single, extremely low biodegradation rate is attributable to sampling error or a minor variance in laboratory analysis.

#### Adsorption

In refinery wastewater impoundments, metals, and to a lesser degree PAHs, adsorb onto the biosludge, thus stabilizing these constituents. Sludge TCLP data for metals in Table 4 of the ERM-Southwest study described above indicated that all sludge metals results were below UTS limits. Sludge TCLP data for PAH compounds were also low, as all analytical results were less than one part per billion. In addition, effluent concentrations for metals and PAHs were within UTS limits. Therefore, this data verifies that metals and the fraction of PAHs which were not biodegraded were effectively complexed into the biomass, being neither discharged from the ABT unit nor leachable from wasted sludge.

ETC has claimed that "non-amenable" constituents should be segregated from the waste stream prior to entering into biotreatment impoundments. As shown above, this costly alternative is not warranted, either regulatorily or technically. First, all potential pathways for environmental impact from these constituents either pose negligible risk or are already subject to controls. Second, the contention that the compounds in question, VOCs, PAHs, and metals, are not adequately treated in refinery ABT units is simply untrue. Both biodegradation and, to a much lesser degree, adsorption provide effective, environmentally responsible treatment for these constituents. API therefore strongly supports EPA's decision not to ban these so-called "non-amenable" constituents.

#### RESPONSE

EPA is not prohibiting certain decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are "amenable" to biological treatment. As is discussed in the April 8, 1996 partial withdrawal notice to the LDR Phase III final rule (61 FR 15660), the *Land Disposal Program Flexibility Act of 1996*, signed by the President on March 26, 1996, provides that the wastes in question are no longer prohibited from land disposal once rendered nonhazardous. Because they are decharacterized before they

enter the impoundment, these wastes are no longer prohibited wastes under RCRA, and any cross-media transfer of hazardous constituents cannot be regulated under RCRA.

It should be noted that the legislation does, however, mandate EPA to undertake a 5-year study to determine any potential risks posed by cross-media transfer of hazardous constituents from these surface impoundments. Comments and data which have been submitted in response to the Phase III and Phase IV rulemakings addressing the issue of amenability of wastes to biological treatment will be considered as part of this 5-year study. The findings of this study may result in proposed regulations for these units, if risks are in fact found that would warrant such regulation.

DCN PH4P080

COMMENTS EASTMAN

RESPONDER SM

SUBJECT AMEN

SUBJNUM 080

COMMENT V. Eastman Agrees That There is No Need to Ban Nonamenable

Constituents At 60 FR 43677 EPA says that it believes that prohibiting certain decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are "amenable" to biological treatment is unnecessary at this time. Eastman agrees. This proposal was made by an organization which stands to gain economically from its adoption. It is without merit and deserves no further consideration. The Chem Waste decision certainly did not require consideration of nonamenable constituents in the Phase IV rule. The Agency has properly determined that bans on nonamenable constituents is unnecessary and that there are numerous technical and practical reasons why implementation of such bans would be problematic. Bans on "nonamenable" constituents, as defined by ETC, would totally disrupt the enormous capital intensive CWA treatment systems that have been developed over the last 20 years - just the type of result that the Agency has tried to avoid in the Phase IV rule.

RESPONSE

EPA is not prohibiting certain decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are "amenable" to biological treatment. As is discussed in the April 8, 1996 partial withdrawal notice to the LDR Phase III final rule (61 FR 15660), the *Land Disposal Program Flexibility Act of 1996*, signed by the President on March 26, 1996, provides that the wastes in question are no longer prohibited from land disposal once rendered nonhazardous. Because they are decharacterized before they enter the impoundment, these wastes are no longer prohibited wastes under RCRA, and any cross-media transfer of hazardous constituents cannot be regulated under RCRA.

It should be noted that the legislation does, however, mandate EPA to undertake a 5-year study to determine any potential risks posed by cross-media transfer of hazardous constituents from these surface impoundments. Comments and data which have been submitted in response to the Phase III and Phase IV rulemakings addressing the issue of amenability of wastes to biological treatment will be considered as part of this 5-year study. The findings of this study may result in proposed regulations for these units, if risks are in fact found that would warrant such regulation.

DCN PH4P085  
COMMENTS EDF  
RESPONDER SM  
SUBJECT AMEN  
SUBJNUM 085  
COMMENT

Ironically, EPA's proposed Option 2 purports to distinguish those surface impoundments engaged in disposal from those performing treatment. See 60 FR 43657. Since treatment of metals does not occur in biological systems, the placement of metal wastes in such systems constitutes de facto disposal. Therefore, restricting metal wastes not amenable for treatment is compelled by EPA's underlying rationale for its proposal. Such a restriction could actually improve legitimate treatment in biological systems by eliminating metal inhibitors from these units.

#### RESPONSE

EPA is not prohibiting certain decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are "amenable" to biological treatment. As is discussed in the April 8, 1996 partial withdrawal notice to the LDR Phase III final rule (61 FR 15660), the *Land Disposal Program Flexibility Act of 1996*, signed by the President on March 26, 1996, provides that the wastes in question are no longer prohibited from land disposal once rendered nonhazardous. Because they are decharacterized before they enter the impoundment, these wastes are no longer prohibited wastes under RCRA, and any cross-media transfer of hazardous constituents cannot be regulated under RCRA.

It should be noted that the legislation does, however, mandate EPA to undertake a 5-year study to determine any potential risks posed by cross-media transfer of hazardous constituents from these surface impoundments. Comments and data which have been submitted in response to the Phase III and Phase IV rulemakings addressing the issue of amenability of wastes to biological treatment will be considered as part of this 5-year study. The findings of this study may result in proposed regulations for these units, if risks are in fact found that would warrant such regulation.

DCN PH4P091

COMMENTS FMC

RESPONDER SM

SUBJECT AMEN

SUBJNUM 091

COMMENT IX. FMC Supports the Agency Decision Not to Ban Non-amenable Wastes from Land Based Biological Treatment Systems. FMC concurs with and supports EPA in their decision not to ban nonamenable wastes from land based biological treatment units. /60 FMC supported this position as part of its Phase III comments /61 and for the reasons stated there we continue to support the Agency's position. /59 59 Fed. Reg. 47982, 9/19/94 /60 60 Fed. Reg. 43677 /61 RJ Fields to USEPA, 5/1/94, Docket No. F-95-PH3P-FFFFF, pg 17

#### RESPONSE

EPA is not prohibiting certain decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are "amenable" to biological treatment. As is discussed in the April 8, 1996 partial withdrawal notice to the LDR Phase III final rule (61 FR 15660), the *Land Disposal Program Flexibility Act of 1996*, signed by the President on March 26, 1996, provides that the wastes in question are no longer prohibited from land disposal once rendered nonhazardous. Because they are decharacterized before they enter the impoundment, these wastes are no longer prohibited wastes under RCRA, and any cross-media transfer of hazardous constituents cannot be regulated under RCRA.

It should be noted that the legislation does, however, mandate EPA to undertake a 5-year study to determine any potential risks posed by cross-media transfer of hazardous constituents from these surface impoundments. Comments and data which have been submitted in response to the Phase III and Phase IV rulemakings addressing the issue of amenability of wastes to biological treatment will be considered as part of this 5-year study. The findings of this study may result in proposed regulations for these units, if risks are in fact found that would warrant such regulation.

DCN PH4P097  
COMMENTS Hazardous Waste Management  
RESPONDER SM  
SUBJECT AMEN  
SUBJNUM 097  
COMMENT

Proposal Not To Ban Nonamenable Wastes From Land-Based Biological Treatment systems (60 FR 43677)

EPA proposes not to ban nonamenable wastes from land-based biological treatment systems because whether the nonamenable constituents are being transferred to air, leaks, sludges, or discharged to surface waters are best addressed by the end-of-pipe limits on constituents proposed in Phase III or the three options proposed in the rulemaking. HWMA supports this approach. However, the Agency appears to be offering conflicting information regarding the justification for supporting this option. We request clarification regarding why the Agency proposes the Phase III end-of-pipe proposal to address this issue, yet in another section of the proposal states that it does not support this approach (60 FR 43659). The Agency needs to evaluate which position it is supporting with regard to the end-of-pipe issue.

#### RESPONSE

EPA is not prohibiting certain decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are "amenable" to biological treatment. As is discussed in the April 8, 1996 partial withdrawal notice to the LDR Phase III final rule (61 FR 15660), the *Land Disposal Program Flexibility Act of 1996*, signed by the President on March 26, 1996, provides that the wastes in question are no longer prohibited from land disposal once rendered nonhazardous. Because they are decharacterized before they enter the impoundment, these wastes are no longer prohibited wastes under RCRA, and any cross-media transfer of hazardous constituents cannot be regulated under RCRA.

It should be noted that the legislation does, however, mandate EPA to undertake a 5-year study to determine any potential risks posed by cross-media transfer of hazardous constituents from these surface impoundments. Comments and data which have been submitted in response to the Phase III and Phase IV rulemakings addressing the issue of amenability of wastes to biological treatment will be considered as part of this 5-year study. The findings of this study may result in proposed regulations for these units, if risks are in fact found that would warrant such regulation.



DCN PH4P102  
COMMENTS COMMENTER Chevron  
RESPONDER SM  
SUBJECT AMEN  
SUBJNUM 102  
COMMENT

4) Chevron Agrees With EPA That Leakage And Sludges From Bio And Post-Bio Units Should Not Be Regulated Under The Phase IV Rule.

Any water leaking from surface impoundments operated as aggressive biological treatment (ABT) units is substantially treated and should not be subject to regulation under Phase IV. As completely mixed systems, the concentration of constituents in the ABT surface impoundment is equivalent to the discharge concentration. Therefore, any leakage from the impoundment or downstream impoundments will be of fully treated wastewater that poses little risk to groundwater. In addition, the constituents in the accumulated sludges in these units do not pose a threat to groundwater because they exist in a near steady-state condition with the impoundments' treated wastewater. Besides, data submitted by API to the docket shows that refinery bio-pond sludges contain underlying hazardous constituents at levels significantly below the universal treatment standards. Thus, the sludge is already well-treated and does not pose a threat to groundwater.

6) Chevron Encourages EPA to declare ABT as BDAT. Chevron again encourages EPA to declare that aggressive biological treatment (ABT) is a best demonstrated available technology (BDAT) for decharacterized wastes. Subsequent to our Phase III comments, API performed additional sampling on four refinery ABT units to gather more accurate information regarding the fate of poly aromatic hydrocarbons (PAHs) in these units. The analytical services of Arthur D. Little, Inc. were used to obtain reporting limits of 10 parts per trillion which allows for more definitive conclusions on this issue. This data is presented and discussed in detail in API's comments. However, Chevron emphasizes two important conclusions:

1. The TCLP extracts from the bio sludge from the four refineries are several of orders of magnitude below the universal treatment standards confirming EPA's finding that the sludges from biological and post biological treatment units do not pose a threat to groundwater. The attached Figure 1 and table presents the ratio of

the measured concentration in the extract to the wastewater UTS for sixteen refinery PAHs. As seen, the extract concentrations are typically more than 1,000 lower than the UTS.

2. The mass balances performed on the data show that the PAHs are being biologically degraded and are not simply adsorbing and precipitating in the sludge. This demonstrates that these compounds are very amenable to biological treatment.

The data supports Chevron's assertion that ABT should be BDAT for treating refinery wastewaters. Further, as demonstrated by this and other data submitted to the docket by API, ABT units: (1) are well mixed as required in their regulatory definition; (2) treat process wastewaters to universal treatment standard levels; (3) do not pose a risk to groundwater since the effluent concentrations are equal to the concentrations in the unit; (4) contain low-risk sludges; and (5) do not emit air emissions in amounts that pose an unacceptable risk.

## RESPONSE

EPA is not prohibiting certain decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are "amenable" to biological treatment. As is discussed in the April 8, 1996 partial withdrawal notice to the LDR Phase III final rule (61 FR 15660), the *Land Disposal Program Flexibility Act of 1996*, signed by the President on March 26, 1996, provides that the wastes in question are no longer prohibited from land disposal once rendered nonhazardous. Because they are decharacterized before they enter the impoundment, these wastes are no longer prohibited wastes under RCRA, and any cross-media transfer of hazardous constituents cannot be regulated under RCRA.

It should be noted that the legislation does, however, mandate EPA to undertake a 5-year study to determine any potential risks posed by cross-media transfer of hazardous constituents from these surface impoundments. Comments and data which have been submitted in response to the Phase III and Phase IV rulemakings addressing the issue of amenability of wastes to biological treatment will be considered as part of this 5-year study. The findings of this study may result in proposed regulations for these units, if risks are in fact found that would warrant such regulation.

DCN PH4P115  
COMMENTS Commenter Courtaulds Fibers  
RESPONDER SM  
SUBJECT AMEN  
SUBJNUM 115  
COMMENT

CFI supports EPA's decision in the Phase IV rule not to ban nonamenable wastes from land-based biological treatment systems. CFI concurs with EPA's view that prohibiting decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are amenable to biological treatment is unnecessary at this time, due to the significant technical impediments such a prohibition would pose. CFI also believes that the "end-of-the-pipe" limits on constituents EPA proposed in the Phase III rule, coupled with Option 1 in the Phase IV rule, will address risks, if any, to human health and the environment that may be posed by the management of hazardous constituents in surface impoundments.

Additionally, however, CFI believes that there is no need for EPA to regulate nonamenable wastes. EPA has acknowledged that the Phase IV rule is intended to address risks that EPA itself has characterized as minor.<sup>3</sup> The risks, if any, posed by nonamenable

- 1/ 60 Fed. Reg. 43654 (Aug. 22, 1995).
- 2/ 60 Fed. Reg. 11702 (Mar. 2, 1995).
- 3/ 60 Fed. Reg. 11704.

wastes are a subset of these minor risks, and as such pose commensurately even fewer risks.<sup>4</sup>

CFI also wishes to comment upon the designation of sulfide-bearing waste streams as not amenable to biological treatment. The designation of sulfide as a constituent that is not amenable to biological treatment is based on a list submitted by the Chemical Manufacturers Association (CMA) to EPA in response to EPA's March 1993 Supplemental Information Report on potential responses to Chemical Waste Management, Inc. v. EPA.<sup>5</sup>

While CMA may have created the list and submitted it on behalf of its members, CFI's experience is that some sulfide-bearing waste streams are amenable to biological treatment and thus it is inappropriate to classify all sulfide-bearing wastes as

nonamenable. CFI's wastewater treatment system has achieved consistently high treatability for sulfide-bearing waste streams. While CFI can report only on its own experience with treating sulfide-bearing waste streams, it is likely that other manufacturing entities are achieving similar or better treatability efficiencies. CFI would be pleased to provide whatever data it has available on this subject to EPA, if EPA would find these data useful.

#### RESPONSE

EPA is not prohibiting certain decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are "amenable" to biological treatment. As is discussed in the April 8, 1996 partial withdrawal notice to the LDR Phase III final rule (61 FR 15660), the *Land Disposal Program Flexibility Act of 1996*, signed by the President on March 26, 1996, provides that the wastes in question are no longer prohibited from land disposal once rendered nonhazardous. Because they are decharacterized before they enter the impoundment, these wastes are no longer prohibited wastes under RCRA, and any cross-media transfer of hazardous constituents cannot be regulated under RCRA.

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DCN PH4P116  
COMMENTS COMMENTER Occidental Chemical Co.  
RESPONDER SM  
SUBJECT AMEN  
SUBJNUM 116  
COMMENT

Oxychemical supports EPA's decision not to attempt to ban non-amenable wastes from land-based biological treatment systems.

This is necessary due to the complexity of the issue and variety of treatment system capabilities.

#### RESPONSE

EPA is not prohibiting certain decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are "amenable" to biological treatment. As is discussed in the April 8, 1996 partial withdrawal notice to the LDR Phase III final rule (61 FR 15660), the *Land Disposal Program Flexibility Act of 1996*, signed by the President on March 26, 1996, provides that the wastes in question are no longer prohibited from land disposal once rendered nonhazardous. Because they are decharacterized before they enter the impoundment, these wastes are no longer prohibited wastes under RCRA, and any cross-media transfer of hazardous constituents cannot be regulated under RCRA.

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