

Originally Processed With FOIA(s):
2025-0878-F

FOIA Number:
2025-0878-F

FOIA MARKER

**This is not a textual record. This is used as an
administrative marker by the George Bush Presidential
Library Staff.**

Record Group/Collection: Dan Quayle Vice Presidential Records
Collection/Office of Origin: Deputy Chief of Staff's Office
Series: Porter, Richard W., Files
Subseries: Subject Files

OA/ID Number: 21803
Folder ID Number: 21803-019b

Folder Title:
Phenol

Stack:	Row:	Section:	Shelf:	Position:
G	34	6	6	3



OFFICE OF THE VICE PRESIDENT
WASHINGTON

May 12, 1992

Mr. Jeffrey T. Mohr
General Counsel
Plastics Engineering Company
3518 Lakeshore Road
Post Office Box 758
Sheboygan, Wisconsin 53082-0758

Dear Mr. Mohr:

Thank you for your letter of April 28, explaining the concerns of the Plastics Engineering Company about the recent EPA proposal on phenol. I will add the letter to the concerns expressed by Allied-Signal and share them with David Rivkin, the Associate Director of the Competitiveness Council, who is looking into this matter.

Please keep in touch.

Sincerely,

A handwritten signature in dark ink, appearing to read "Richard W. Porter".

Richard W. Porter
Counselor to the Vice President

— plenco —

PLASTICS ENGINEERING COMPANY

SHEBOYGAN, WISCONSIN 53082-0758 U. S. A.

3518 LAKESHORE ROAD
POST OFFICE BOX 758
TWX 910 - 264 - 3873
FAX 414 - 458 - 1923
PHONE 414 - 458- 2121

April 28, 1992

Mr. Richard Porter
Counsel to the Vice President
Old Executive Office Building
17th Street & Pennsylvania Avenue
Washington, DC 20500

In re: Phenol Pretreatment Standards

Dear Mr. Porter:

I understand you met recently with representatives of Allied-Signal Inc., to discuss the E.P.A.'s proposed phenol pretreatment standards for new and existing sources. Because the meeting was held on very short notice, I was unable to attend, though I would very much have liked to be there.

After submitting our comments to E.P.A. independently, Allied-Signal and Plastics Engineering Company discovered that we had expressed nearly identical thoughts about the poor judgment shown by E.P.A. in proposing these regulations. I am sure the Allied-Signal representatives expressed our mutual concerns to you eloquently.

The proposed E.P.A. regulation will require companies in our industry that discharge to sewers to spend massive amounts of money to install pretreatment facilities. We will be required to remove phenol from our effluent to levels at least 50 times cleaner than allowed in Wisconsin drinking water despite the facts that (1) well run publicly-owned treatment works (POTWs) remove virtually all phenol prior to discharge; (2) typical POTW discharges are below levels of any demonstrated health effects to any species of life; and (3) phenol does not accumulate - but is known to biodegrade rapidly in water, soil and sludge. The general pretreatment regulations contemplate a mechanism that, in theory, allows effective POTWs to grant "removal credits" to their upstream dischargers, so companies like us can avoid building redundant treatment facilities. However, regulatory delay has prevented "removal credits" from being available thus far. We fear they will not be available in time to allow us to avoid construction of redundant phenol pretreatment facilities, if ever.

E.P.A.'s response to our comments has been unsatisfying. They say they have heard all this before and have had their regulation upheld in court. Courts give great deference to the judgment of a regulatory agency, so having a regulation upheld by the Court is not an endorsement of the regulation's wisdom. Indeed, in upholding the regulation, the Court relied on the supposed availability of removal credits to avoid redundancy. Subsequent events have shown that reliance to have been misplaced.

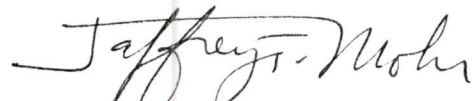
E.P.A. should carefully review again the wisdom of this proposed regulation, especially if "removal credits" are not immediately available. Particular attention should be paid to the impact on small businesses like Plastics Engineering Company (about 400 employees). This proposed regulation would require us to spend more than \$3 million, and will achieve no environmental improvement whatsoever. As a small business, our ability to fund the capital cost of this regulation is less than that of our larger competitors. And the operating costs and amortization of the capital costs must be spread over a much smaller volume, so the impact on our cost per pound of resin produced is higher than for our larger competitors.

All regulations fall more heavily on small businesses by increasing fixed costs. Unnecessary regulations, like this one, must be avoided if this country is to have any successful small businesses. Unnecessary regulations also decrease our customers' international competitiveness, and should likewise be avoided.

Please do everything you can to help E.P.A. rethink their position and adopt a wiser approach with respect to phenol.

Very truly yours,

PLASTICS ENGINEERING COMPANY



Jeffrey T. Mohr
General Counsel

P.S. I am enclosing copies of my correspondence to and from the E.P.A. Also, by sending a copy of this letter to Mr. George Jett, I am again asking U. S. E.P.A. to reconsider this regulation during the President's 90-day moratorium.

JTM:jz

cc: Jay Bonitt, Allied-Signal

George Jett, U. S. E.P.A.

Cecile Kremer, Office of Public Liaison, The White House

Teresa A. Gorman, Policy Development, The White House

David Rivkin, Office of the Vice President

David B. Struhs, Council on Environmental Quality

— plenco —

PLASTICS ENGINEERING COMPANY

SHEBOYGAN, WISCONSIN 53082-0758 U. S. A.

3518 LAKESHORE ROAD
POST OFFICE BOX 758
TWX 910 - 264 - 3873
FAX 414 - 458 - 1923
PHONE 414 - 458- 2121

March 4, 1992

Mr. George M. Jett, Project Officer
Chemicals Branch, Engineering and Analysis Division (WH-552)
Environmental Protection Agency
401 M Street, SW
Washington DC 20460

Attention EAD Docket Clerk
Organic Chemicals, Plastics and Synthetic Fibers Industry (WH-552)
Rm 911, East Tower, Waterside Mall

Re: Comments to Pretreatment Standards

Dear Mr. Jett:

I. Introduction

Plastics Engineering Company ("Plenco") is a manufacturer of phenolic resins and molding compounds, and submits these comments in opposition to the proposed pretreatment standards for existing sources ("PSES") and new sources ("PSNS") in the organic chemicals, plastics, and synthetic fibers ("OCPSF") point source category (56 F.R. 63897-911, Dec. 6, 1991). These comments are directed specifically at the proposed effluent limits for phenol, although we believe the thoughts expressed may be equally applicable to other organic chemicals.

Plenco is a small family-owned business with approximately 400 employees located in Sheboygan, Wisconsin. If this proposed regulation is adopted, Plenco will be compelled to spend several million dollars to construct, and over \$75,000 per year to operate and maintain, a biological treatment facility that will produce no net environmental improvement whatsoever. This represents a terrible waste of societal resources, and will have a substantial adverse impact on Plenco's and its customers' ability to compete in world markets.

Plenco believes this inappropriate result is the consequence of a number of errors in the regulatory process, including several faulty assumptions and erroneous methods of analysis. Further, the consequences of these errors will fall most heavily on small business. These comments attempt to explain how an apparently well-meaning and rational process could reach such an inappropriate conclusion.

II. Summary of Comments

Sheboygan, Wisconsin has a modern, efficient wastewater treatment facility with sufficient design and capacity to effectively treat both the City's residential and industrial

File # P 988 815 687

wastewaters prior to discharge to Lake Michigan. Plenco recovers almost all the phenol contained in its process wastewater prior to discharge to this publicly-owned treatment works ("POTW"). Virtually all the residual phenol in Plenco's effluent is removed by Sheboygan's treatment facility; any phenol in the POTW's discharge to Lake Michigan is below the limits of detection. Why, therefore, should Plenco be required to construct a multimillion dollar pretreatment facility to reduce phenol to the PSES levels (which are on the order of 50 times cleaner than what is allowed in drinking water in Wisconsin) prior to discharge to the sewer?

The proposed regulations require Plenco to pretreat its effluent on the basis that phenol generally "passes through" POTW's; but the definition used to determine which chemicals generally "pass through" POTW's is unreasonable and counter to the normal understanding of that term when it is used to describe chemicals that are almost entirely removed by POTW's.

There is a theoretical environmental "improvement" (*i.e.*, reduction in phenol discharge to surface water by the average POTW) from the proposed double treatment, but there is no evidence in the rule-making record that this "improvement" is actual, nor is the actual "improvement" quantified. Any such "improvement" would necessarily be very small.

A cost-benefit analysis was applied to determine if the regulation is appropriate, dividing the estimated costs of compliance by the amount of environmental improvement, and then comparing this to other toxic reduction regulations. However, the costs used in the calculation were dramatically underestimated and the benefits dramatically overestimated. For example, the E.P.A.'s capital cost estimate for a pretreatment facility for Plenco's flow and detention time is approximately 1/17th of the cost of the system our consulting engineer says we actually need. In computing benefits, the total reduction of chemicals put into the sewer due to pretreatment facilities was used, rather than the much, much smaller net reduction (if any) in chemicals discharged to the environment by POTW's. As a result, the relative cost benefit estimate is way off, by a factor of at least twenty and perhaps hundreds.

Finally, the labeling of extremely dilute concentrations of phenol (or for that matter, many other biodegradable organic chemicals) in water as "toxic", and the corresponding assumption that further reductions must therefore produce a benefit, are wrong. That error leads to wasteful regulations like this one.

The most appropriate and efficient way to regulate and control discharges to the environment by POTW's is to regulate POTW's, and enable them to regulate and control their indirect dischargers. The general pretreatment regulations contemplate this approach, and supposedly allow effective POTW's to extend "removal credits" to indirect dischargers like Plenco. However, POTW's are not currently able to grant "removal credits" and we have been informed orally by E.P.A. Region V pretreatment and enforcement personnel that we cannot count on or expect "removal credits" ever to become available. In the absence of a realistic "removal credit" system, the PSES and PSNS levels for phenol will require expensive redundant treatment facilities to be needlessly built.

There is evidence to indicate that there might be some "interference" with POTW operations at 50 ppm of phenol or above (roughly 1000 times the currently proposed maximum). Plenco could support a maximum at this level, or even one including a safety factor of 5 or 10 (i.e., maximum levels of approximately 5 - 10 ppm). Anything lower is arbitrary and unjustified.

III. Detailed Comments

A. "Pass Through"

One of the more awkward exercises engaged in by the E.P.A. in promulgating these regulations has been defining when a chemical is considered to "pass through" a POTW. After many fits and starts, E.P.A. finally concluded that if POTW's were on average even slightly less effective in removing a chemical than industrial plants using the best available technology economically achievable ("BAT", the technology used to set the PSES and PSNS effluent limits), then the chemical would be considered to "pass through" the POTW.

This approach virtually guarantees a finding of "pass through", because the "best available" industrial results will always equal or exceed the "average" POTW results when the removal technologies are the same, as they are for phenol. Average POTW removals of phenol in typical loadings exceeded 95% (1987 E.P.A. Development Document). Use of the term "pass through" to describe such a highly efficient removal system is contrary to the normal use of that term. E.P.A. considered, but later abandoned, a definition that would have required that there be a significant difference (5% or even 10%) in removal efficiency before "pass through" would have been found. If either a 5%, or 10% differential had been adopted, phenol would not have been regulated. We submit that continued adherence to E.P.A.'s definition, especially in light of the remainder of the regulatory approach (the peculiar cost/benefit analysis and the apparent end of removal credits, see below) is inappropriate and leads to results unintended by Congress. Congress clearly didn't intend to cause wholesale duplication of biological treatment facilities where there is no significant difference between the BAT and POTW removal efficiencies.

B. Is There Any Net Environmental Benefit From Double Treatment?

The E.P.A. Development Document claims that at similar loadings a BAT in-plant biological pre-treatment facility removes 99.9% of the phenol in an effluent stream and an average POTW 95.2%. In theory then, there is a 4.7% improvement in phenol removal efficiency by requiring pretreatment to BAT standards prior to POTW treatment. However, the E.P.A. records contain no demonstration or quantification of actual reductions in POTW effluent, based on measurements taken "before" and "after" implementation of pretreatment. The E.P.A. Development Document admits that removal efficiencies are very dependent on influent concentrations and other influent

components, which are likely to be different for industrial plants and POTW's. In the absence of measurement and documentation, this "improvement" cannot be taken for granted. There may be less actual improvement, or none at all. The most that can be said is that 4.8% is an upper bound on the average "improvement" that can be expected. [As an aside, we have seen test results suggesting that phenol removal efficiencies at the Sheboygan POTW are greater than 99%, which would mean at most a 1% improvement in our case.]

C. Costs Were Underestimated

The E.P.A.'s Supplement to the OCPSF Development Document (November 1991) for these proposed regulations eloquently explains the great diversity contained in the OCPSF industry and how there is great variation in effluent and treatability, especially among smaller, batch processing plants like Plenco (pp. II-8, 9, 10). It is therefore surprising that this diversity was not taken into account in estimating compliance costs. The E.P.A.-estimated cost was based on applying its CAPDET model to two variables: flow rate and detention time, and assumes that the purchase of a simple, packaged activated sludge system will be sufficient for all small flow requirements. But the variability referred to above prevents that model and assumption from being appropriate. The assumed activated sludge system is susceptible to upsets from variations of the type described. Where the "simple" system is inadequate because of variability, costs begin to escalate rapidly. Engineering costs must be added, land requirements increase, custom equipment for collection, equalization, neutralization, the adding of nutrients, and controls are more expensive, etc. Please note that small systems are much more likely to be inefficient in this respect. A larger system treating multiple waste streams has inherent equalization and neutralization built in, not to mention a steadier flow of nutrients. Thus the regulation, which prefers many individual treatment facilities to a single POTW, requires not only duplication, but inefficient duplication at that, especially by the smallest sources. In addition, we believe the E.P.A. cost estimates contain no figures for air emission control equipment, an expensive requirement these days.

In our case, the E.P.A. CAPDET model projects a capital cost of \$140,000 for a 25,000 gallon per day flow, 84-hour detention system. The actual capital cost estimate for the plant our consulting engineers advise is required, is over \$2.4 million (greater by a factor of 17!). (These figures are in 1982 dollars; in 1992 dollars - the only kind we have - the capital cost is over \$3 million.) Our actual operating and maintenance (O&M) costs are estimated at \$78,500 compared to the E.P.A. estimate of a little over \$34,000. Using 19% of capital as an annualization factor, our total annualized cost estimate is over \$530,000, compared to the E.P.A. estimate of about \$61,000 (greater by 9 times).

We know we are not alone in finding that E.P.A. has underestimated our costs, and it is apparent that the effect of these cost underestimates falls most heavily on smaller operators. The comparison of the CAPDET estimates with the actual costs contained in

the October 1987 Development Document (Table VIII-23), shows all small flow plants (< .5 MGD) underestimated by the E.P.A. model on both capital and O&M, most of them significantly so. The resulting CAPDET-estimated annualized costs for the three small flow plants are less than the actual costs by a factor of 4, with the smallest plant underestimated by a factor of 8! And each dollar of underestimate on small producers must be amortized over fewer pounds of product than the overestimates on large generators. Use of the CAPDET estimating model, rather than actual costs, in computing the Regulatory Flexibility Act impact on small business is quite clearly flawed and fails to show the true impact.

D. Benefits Were Overestimated

In computing the benefits of the regulation, E.P.A. measured reductions in pounds of toxics discharged to POTW's, rather than net reductions of toxics discharged by POTW's to the environment. This interesting approach suggests that the goal is to avoid having anything toxic in the sewer pipes between industrial dischargers and POTW's. (This gives new meaning to the term "sanitary sewer".) Rather, E.P.A. should have calculated the net reduction in toxics released to the environment. As mentioned above, those numbers were not demonstrated or quantified in the record, but an upper bound on the net benefit in the case of phenol is 4.8% of the reduction in discharge to the POTW (the remaining 95.2% would have been removed by the average POTW anyway). This results in an overstating of the environmental benefits by a factor of 20.

E. Cost Effectiveness Numbers Dramatically Incorrect

As a result of underestimating compliance costs and overestimating benefits, the cost effectiveness (CE) number disclosed by E.P.A. is low, perhaps by a factor of 100. A correct calculation demonstrates the inappropriate cost of this regulation.

Let's analyze the cost effectiveness, assuming Plenco's costs are representative. Our capital and O&M costs translate to annualized costs of over \$530,000 in 1982 dollars. We estimate that we currently discharge a total of nearly 35,000,000 gallons of wastewater per year, containing an average of 10 ppm of phenol, or less than 3000 pounds of phenol per year into the sewer. If it were average, that is 95% efficient in removing phenol, the POTW would remove all but 150 pounds or so. Even if our pretreatment expenditure results in zero ultimate discharge, it will be achieved at a cost of over \$3,500 per pound of phenol. (We don't know the conversion of phenol pounds into copper-pound equivalents.) This result, when compared to the other industry cost effectiveness calculations, begins to demonstrate the outrageous waste of resources proposed to be required (20 times the next highest CE factor listed in the Industry Comparison of Cost Effectiveness in the Supplement to the Development Document (Table 10) and 100 times the CE factor calculated by E.P.A. for this regulation. In fact, if the Sheboygan POTW's removal efficiency is 99%, then the CE for our specific case is five times higher still, or over \$17,500 per pound of phenol removed.)

F. Toxicity Threshold/ Biodegradability

It is axiomatic that "the dose makes the poison." Certain vitamins and minerals, essential for human survival in trace quantities, are toxic at elevated levels. Snake venom, an obvious hazard at elevated doses, becomes a useful medicine in controlled quantities. So it is with phenol and many other biodegradable organics.

Phenol can be fatal to humans if absorbed through the skin in a sufficient dose, can cause liver and kidney damage if ingested and can cause chemical burns in aqueous concentrations of 5% or more. Yet the FDA has recently approved it as safe and effective at concentrations up to 1.5% as a sore throat spray (Chloraseptic), in throat lozenges (Chloraseptic and others) and lip medications (Carmex, Blistex). [As an aside at this point, if Plenco's 25,000 gallons per day of effluent were completely phenol free, but an employee flushed one bottle of Chloraseptic spray down the drain, we would be over our regulatory limit for phenol.]

Obviously, these medicinal uses are not intended as continuous exposures, and humans are probably less sensitive than some other species because of our size. Nevertheless, the December 1989 Toxicological Profile for Phenol from the Agency for Toxic Substances and Disease Registry discloses no observed adverse health effects for small mammals (rats, mice) at drinking water concentrations as high as 1% (10,000 ppm). The Toxicological Profile discloses a possible inhibitory effect on bacteria at 50 ppm. But no toxicity even to bacteria is disclosed at lower concentrations. Drinking water is allowed to have as much as 1 ppm and that limit is set so low only out of an abundance of caution.

The fact is, at concentrations below 10 ppm or so, phenol is simply not toxic. Moreover, it readily biodegrades. The Toxicological Profile describes how both aerobic and anaerobic processes rapidly degrade phenol in soil, ground and surface waters as long as the concentrations are low. Phenol will also photo-degrade in surface water even in the absence of bacteria. Please note that phenol is a naturally occurring product of the decomposition of biomass, and has been leaching into soil, ground and surface waters and being efficiently biodegraded for eons. At the concentrations discharged by POTW's, even assuming no pretreatment, phenol's expected life in surface water is 2 - 4 days.

Since phenol is not toxic at low concentrations and is not persistent and accumulating like PCB's or mercury, there is simply no reason to pursue further and further reductions of it. We believe that phenol was removed from the list of organic toxics regulated under the RCRA Toxicity Characteristic Leaching Procedure for many of these reasons, and it should likewise be removed from these proposed regulations. E.P.A. should establish a "toxicity threshold" for phenol and other biodegradable organics, and should avoid requiring the further expenditure of funds once concentrations are below that level. And those levels should be imposed at the point of POTW

discharge to the environment, rather than upstream.

It is possible that phenol should be limited for PSES and PSNS purposes on the basis of the reported "interference" potential at 50 ppm, or perhaps even at 5 - 10 ppm, in order to provide a "safety factor."

G. Removal Credits

Even the most cursory review of the situation suggests that it is most efficient to regulate discharges by POTW's and allow them to control their indirect dischargers. The general pretreatment regulations contemplate POTW's issuing "removal credits" to upstream indirect dischargers where the POTW can effectively treat the waste. This would help eliminate unnecessary duplication of biological waste treatment facilities. Frankly, it was this expectation that kept Plenco, and probably others, from raising objections to the phenol PSES and PSNS regulations when first promulgated.

However, due to litigation and regulatory delay, "removal credits" are not currently available. In addition, in meetings with EPA Region V pretreatment and enforcement personnel, we have been advised not to expect or count on "removal credits" ever being available.

This development changes the impact of the PSES and PSNS regulations dramatically. In the absence of an active, available "removal credit" system, the PSES and PSNS regulations will result in a needless duplication of expensive biological treatment facilities. Even if "removal credits" ultimately become available, unless they do so prior to the date that compliance with PSES is required, it will be too late. The redundant expenditures will already be made. These regulations should not be adopted until after "removal credits" are generally available.

H. Competitiveness Impact

Small businesses are already struggling with the recession, product liability, enormous health care cost increases, and a myriad of governmental regulations, including OSHA and other E.P.A. and state environmental rules. This single, unnecessary regulation will increase the cost of our phenolic resin by 1 - 2%. In a mature industry where there is overcapacity and thin margins, if these costs cannot be passed on to customers, that represents the loss of at least a significant portion of profit, and in some cases may make the difference between a profit and a loss.

For small businesses, who in fact feel a greater proportional impact (unlike what is estimated by E.P.A.'s erroneous model) these costs may not be able to be passed on due to aggressive pricing by our larger competitors. Even if other domestic resin makers are similarly affected, our customers' products will bear the costs of these regulations, making them less competitive in the world markets, where they must compete against

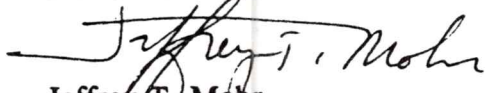
manufacturers from countries that either have no regulations or have stopped regulating at rational levels.

IV. Conclusion

Where, as here, there is no health or safety concern, E.P.A. should be very conservative, very reluctant to impose new costly regulations. Otherwise, American industry, and especially small American businesses, will disappear. They will be poisoned by an accumulation of ever-increasing, persistent, unreasonable over-regulation polluting the business environment.

Very truly yours,

PLASTICS ENGINEERING COMPANY



Jeffrey T. Mohr
General Counsel and Secretary

JTM:jz

cc: Dan Quayle
Robert W. Kasten
Herbert Kohl
Thomas E. Petri
James F. Sensenbrenner
William Reilly



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

MAR 31 1992

OFFICE OF
WATER

Mr. Jeffrey T. Mohr
General Counsel
Plastics Engineering Company
Sheboygan, WI 53082-0758

Dear Mr. Mohr:

Thank you for your March 4, 1992, letter to Administrator William K. Reilly in which you enclosed comments on the pretreatment phenol standards for the organic chemicals, plastics, and synthetic fibers (OCPSF) point source category, which were proposed in the December 6, 1991, Federal Register.

The Agency initially promulgated, on November 5, 1987, effluent limitations and standards for the OCPSF industry which were subsequently challenged in the U.S. Fifth Circuit Court of Appeals. The petitioners raised many technical, economic and legal issues, including many aspects of the issues discussed in the Plastics Engineering Company (Plenco) letter. In 1989, the Court issued decisions that upheld almost all portions of the regulation, but remanded three narrowly defined issues to the Agency for reconsideration (Chemical Manufacturers Association vs. Environmental Protection Agency, 870 F.2d 177 and 885 F.2d 253 (5th Cir. 1989)). The technical basis for the numerical phenol pretreatment standards was upheld by the Court; however, the phenol standards were remanded because the Agency underestimated the corresponding cost of compliance. As a result of the remand, the Agency, among other actions, withdrew pretreatment standards for phenol and 12 other pollutants (55 FR 26691; June 29, 1990).

It may be helpful to summarize the Agency's general approach and considerations for developing the OCPSF pretreatment standards. The Environmental Protection Agency (EPA) proposed the OCPSF pretreatment standards in accordance with Section 307(b) of the Clean Water Act (the Federal Water Pollution Control Act Amendments of 1972, as amended (33 U.S.C. 1251 et seq.)). Pretreatment standards are intended to prevent industrial discharges of toxic and other pollutants that pass through, interfere with, or are otherwise incompatible with the operation of publicly owned wastewater treatment works (POTWs). EPA has concluded that phenol, along with 46 other pollutants, passes through POTWs. (See the original OCPSF rulemaking on this point, 52 FR 42568, November 5, 1987.) Because phenol is a toxic pollutant, as defined in Section 307(a), the Clean Water Act



requires that EPA establish pretreatment standards for phenol. EPA has identified toxic effects of phenol, including deterioration of gill membranes, degradation of the liver, and brain damage in fish at phenol concentrations as low as 20 to 70 ppb.

Once a pollutant, such as phenol, is identified as a pollutant of concern, pretreatment standards are developed on a technology-basis analogous to development of "best available technology economically achievable" (BAT) requirements for direct dischargers. Technology-based standards must be based strictly on an analysis of technical and economic achievability. One reason for this approach is that technology-based standards are intended to provide a consistent set of minimum, equitable requirements for all plants within a category or subcategory, thus ensuring that competitive advantages and disadvantages due to highly variable local conditions are minimized under the Clean Water Act. Such standards are a "floor" that can be made more stringent due to water quality considerations; they cannot be made less stringent.

A discussion of the pass-through evaluation, the pollutants selected for regulation, and the technology basis for the numerical standards of the original OCPSF pretreatment standards may be found in Section VI.E of the November 5, 1987, Federal Register notice (pages 42545 to 42549). The preamble to the December 6, 1991, Federal Register notice of proposed amendments to the OCPSF regulation explains the Agency's response to the remands including the revised methodology for estimating the costs of compliance.

We have received the March 4, 1992, Plenco public comments and are evaluating them. Industry and other reviewers often arrive at different conclusions using the same database on proposed rules, and our staff will carefully assess the assumptions and basis for the conclusions in the Plenco submission. EPA understands and appreciates Plenco's concerns regarding the costs and environmental benefits of the proposal and is presently evaluating these factors. As is our usual practice, EPA will respond to any comments on the proposed standards at the time we promulgate the final rule.

I hope this letter addresses your concerns. Please call me if you have further questions, or have your staff contact Mr. George Jett of the Engineering and Analysis Division at (202) 260-7151.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Martha Prothro".

 LaJuana S. Wilcher
Assistant Administrator



OFFICE OF THE VICE PRESIDENT
WASHINGTON

May 12, 1992

Mr. C. F. Quitter
Manager
Health Safety and Environment
Henkel Corporation
Emery Group
4900 Este Avenue
Cincinnati, Ohio 45232

Dear Mr. Quitter:

Thank you for your letter of May 6 explaining the concerns of Henkel Corporation about the recent EPA proposal on phenol. I will add the letter to the concerns expressed by Allied-Signal and share them with David Rivkin, the Associate Director of the Competitiveness Council, who is looking into this matter.

Please keep in touch.

Sincerely,

A handwritten signature in dark ink, appearing to read "Richard W. Porter".

Richard W. Porter
Counselor to the Vice President



5/11
Henkel Corporation
Emery Group

May 6, 1992

Mr. Richard Porter
Counsel to the Vice President
Old Executive Office Building
17th Street & Pennsylvania Ave., NW
Washington, DC 20500

Dear Mr. Porter:

The purpose of this correspondence is to solicit your help in reviewing USEPA attempts to impose unwarranted and needless regulations upon manufacturing facilities. Specifically, I am referring to a recent USEPA proposal (56 Federal Register 63897 December 6, 1991) that would require manufacturing facilities that discharge wastewater to publicly owned treatment works (POTW) to pretreat their discharges for phenol even though the POTW's are already treating for same.

We have learned that you and other of your colleagues have met with Allied-Signal, Inc. on April 10 to discuss this very issue. Our concerns are similar to Allied-Signal. The proposed regulation, if enacted, would be burdensome, duplicative, unnecessary and definitely expensive. These very thoughts were also submitted to the USEPA on March 3, 1992 as official comments on the proposed regulations by this author on Henkel Corporation's behalf.

Brief Synopsis of Henkel Corporation's Position:

- Henkel Corporation, Emery Group, manufactures oleochemicals and derivatives that are used by our customers in making soaps, detergents, lubricants, cosmetics, plastic additives, polymers, etc. These lines of products are produced at two Henkel facilities. Our basic raw materials are beef tallow and vegetable oils (including coconut oil). It is because of our use of coconut oil that we are included in the proposed OCPSF regulations. Phenol occurs naturally in coconut oil at typical levels of 50 to 100 ppm. No where in our process do we use phenol. Inevitably, the naturally occurring phenol ends up in our wastewater after the oils have been processed. The level of phenol in our wastewater, that we discharge to the POTW, is typically 0.5 ppm. The municipal treatment plant (POTW) can effectively treat 50 ppm phenol with no adverse effect upon their biological treatment system.

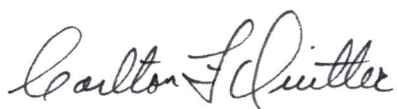
- The USEPA has stated as a matter of treatment theory that "... end of pipe biological treatment may be largely redundant to the biological treatment provided by the POTW." (52 Federal Register, 42548) It is significant that Congress indicated in the language of the Clean Water Act that it wanted to avoid redundant treatment by industry and POTW's.
- The estimated costs to our corporation to install pretreatment systems at the two facilities to lower the phenol content in our wastewater from the current discharge level of 500 ppb (0.5 ppm) to the proposed level of 19 ppb are projected to be: \$800,000 to \$1,200,000 capital costs to construct and \$500,000 to \$900,000 per year operational expenses. We consider these costs to be excessive for the incremental reduction achieved, especially in light of the POTW's ability to treat the wastewater anyway. The net result of effluent exiting the POTW will be the same quality as that now obtained.
- The non-biological treatment system we would employ to lower phenol from 500 to 19 ppb would create other disposal problems. An engineering study has shown that the most effective treatment system for wastewater from our process would involve the use of sodium hypochlorite and carbon adsorption. The downside of this scheme is that the carbon will eventually have to be landfilled and the use of hypochlorite gives rise to volatile organic compounds (VOC's) which are to be heavily regulated in the new Clean Air Act Amendments regulations forthcoming. The use of these chemicals to achieve the minuscule reduction in phenol are an increase in potential pollution. Again, the costs far outweigh the benefits.

Summary:

At the very least, the scope of the proposed rule should not include industries who are indirect dischargers to a POTW that is capable and willing to perform the phenol removal at it's common treatment plant. To do otherwise is redundant and a waste of money and resources.

To restate our plea, please do what you can to bring some sanity into this situation. This proposed regulation is useless and burdensome to American industry with no net benefit to the environment.

Sincerely,



C. F. Quitter
Manager - Health, Safety and Environment

cc: D. J. Shelton

File: OCPSPF



OFFICE OF THE VICE PRESIDENT
WASHINGTON

May 13, 1992

Mr. John C. Whitaker
Vice President
Public Affairs
Union Camp Corporation
2021 L Street, NW
Suite 320
Washington, DC 20036

Dear Mr. Whitaker:

Thank you for your letter of May 6, explaining the Union Camp's concerns about EPA's proposed regulation of phenol. We have heard similar concerns from others and I understand that EPA is taking a close look at this matter.

Please keep in touch.

Sincerely,

A handwritten signature in dark ink, appearing to read "Richard W. Porter".

Richard W. Porter
Counselor to the Vice President



2021 L STREET, N.W., SUITE 320, WASHINGTON, D.C. 20036 TEL: (202) 785-0320 FAX: (202) 659-8169

DATE: May 6, 1992

MEMO TO: Richard Porter, Counsel to the Vice President
Old Executive Office Building
17th & Pennsylvania Ave., N.W.
Washington, DC 20500

Cecile Kremer, Office of Public Liaison
The White House
1600 Pennsylvania Ave., N.W.
Washington, DC 20500

Teresa A. Gorman, Special Assistant to the President
for Policy Development
The White House
1600 Pennsylvania Ave., N.W.
Washington, DC 20500

David B. Rivkin, Associate Executive Director,
Council on Competitiveness
Office of the Vice President
Old Executive Office Building
17th & Pennsylvania Ave., N.W.
Washington, DC 20500

David B. Struhs, Chief of Staff
Council on Environmental Quality
722 Jackson Place, N.W.
Washington, DC 20503

FROM: John C. Whitaker
Vice President, Public Affairs

SUBJECT: OCSPS-EPA PROPOSED RULE FED.REG. VOL. 56, NO.235

I am enclosing Union Camp Corporation's comments to EPA (Mr. George M. Jett) urging EPA to re-evaluate its proposed rule on organic chemicals, plastics and synthetic fiber effluent limitation guidelines, pretreatment standards and new source performance standards (Federal Register, December 6, 1991).

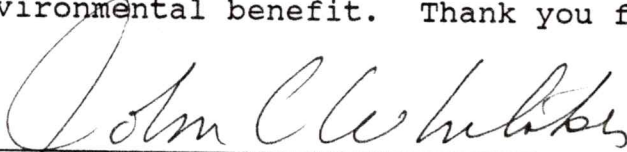
As our comments indicate, our chemical plant at Valdosta, Georgia, is being subject to draconian effluent limitations and pretreatment standards that limit the discharge of phenol.

We find the proposed phenol limit outrageously expensive (far higher than EPA's cost estimates would lead you to believe). The bottom line is that we would have to pay three quarters of a million dollars to remove less than 0.1 pounds of phenol per day (36 pounds a year) being discharged into a Publicly Owned Treatment Works (POTW) which EPA estimates is removing 95 percent of the phenol (34 pounds a year) received.

The expenditure for the removal of an incremental two pounds per year of phenol means the high cost bears no reasonable relationship to any conceivable environmental benefit.

We have about 100 jobs at stake in our Valdosta plant and we find EPA's proposed regulations amount to environmental extremism. The regulation affects 365 similar plants nationwide and EPA thinks "only" 15 will be closed. While 15 plants nationwide is a serious concern, the truth is well more that 15 plants will be closed should the EPA regulation become final.

We appeal to each of you to step in and halt EPA's proposed rule which will be very costly, will mean loss of jobs and be of no environmental benefit. Thank you for your consideration.



John C. Whitaker
Vice President, Public Affairs
Union Camp Corporation

JCW:lt
Enclosure



P. O. BOX 1391, SAVANNAH, GA. 31402 TELEPHONE (912) 238-7484

CORPORATE OFFICE OF
ENVIRONMENTAL AFFAIRS

March 5, 1992

Mr. George M. Jett, Project Officer
Chemicals Branch, Engineering and Analysis Div.
WH-522
Environmental Protection Agency
401 M Street SW
Washington, DC 20460

Attention: EAD Docket Clerk
Organic Chemicals, Plastics, and Synthetic Fibers Industry
[WH-552]

RE: ORGANIC CHEMICALS, PLASTICS AND SYNTHETIC FIBERS
CATEGORY EFFLUENT LIMITATIONS GUIDELINES,
PRETREATMENT STANDARDS, AND NEW SOURCE PERFORMANCE
STANDARDS. FEDERAL REGISTER VOL. 56, NO. 235. DECEMBER 6,
1991.

Dear Mr. Jett:

Union Camp Corporation respectfully submits the following comments in the above-captioned proceeding, and urges the Environmental Protection Agency ("EPA" or the "Agency") to re-evaluate its proposed rule. As proposed, the rule will have a disastrous and unjustifiable impact on affected industry.

Union Camp is a major manufacturer of paper and related products. Its Chemical Division operates three domestic manufacturing facilities, including a plant in Valdosta, Georgia (the "Valdosta plant"). The Valdosta plant produces tall oil rosin based products, which are sold to other manufacturers for the production of inks and coatings. As part of Standard Industrial Classification 2821 (Thermoplastic Resins), the Valdosta plant will be subject to pretreatment standards for existing sources ("PSES") for Organic Chemicals, Plastics, and Synthetic Fibers ("OCPSF"). Union Camp submits that the effects of EPA's highly

problematic OCPSF rule on its Valdosta plant are emblematic of the effects that similarly regulated operations will have to endure.¹

I. EPA's METHOD FOR CALCULATING THE COST OF BIOLOGICAL TREATMENT IS FLAWED.

In Chemical Manuf. Assoc. v. EPA, 885 F.2d 253 (5th Cir. 1989), the U. S. Court of Appeals for the Fifth Circuit remanded the Agency's OCPSF rule with respect to biological treatment on very broad grounds. In its concisely worded ruling on "The Achievability of the BAT Limitations for Priority Pollutants for Which In-Plant Biological Treatment is the Model Technology," the Fifth Circuit focused on EPA's highly problematic use of three end-of-pipe plans to develop its best available technology ("BAT") standard. The court properly delineated the flaws in EPA's methodology, including high variability in detention time, and concluded simply that EPA's "record contains no performance data for in-plant treatment of the twenty priority pollutants at issue." 885 F.2d at 265. EPA itself acknowledges that the court's remand encompasses the designs of the model treatments systems used to estimate the costs of compliance for the numerical limitations proposed. 56 Fed. Reg. at 63,903. Nevertheless, even as revised, EPA's cost estimates continue to be invalid.

One portion of the court's remand concerned EPA's costing of the model in-plant biological treatment technology. The Court had determined that the previous costing had been done in error. EPA has redone the cost analysis and has presented these data in Supplement to the OCPSF Development Document for Effluent Limitations Guidelines and New Source Performance Standards for the Organic Chemicals, Plastics, and Synthetic Fibers Point Source Category, November 1991. Union Camp believes that the conclusions drawn by this cost analysis are still incorrect for the industry as a whole and that the Agency has substantially underestimated the costs of compliance. The Agency's underestimation of costs is illustrated in the case of the Valdosta plant.

The Valdosta plant manufactures a line of phenolic resins. The phenol is present as a contaminant in the raw materials used to formulate these compounds. This plant

¹Union Camp has taken the time to review those parts of the administrative record of applicability to its Valdosta, Georgia plant and has tried to review data relating to other indirect dischargers. As the Agency knows, however, many parties submitting comments to the record have elected to claim confidentiality with respect to technical data in their comments. The confidentiality of this data, while perfectly justifiable, has hampered Union Camp's ability to establish firmly the similarities in its operations with other operations in the OCPSF category. Union Camp should not be prejudiced in any way by this situation.

is similar to many other small OCPSF facilities. As a result of normal process loss, very small amounts of phenol are present in the Valdosta plant's effluent. The average daily discharge of phenol from this plant is about 4.5 parts per million (ppm) or about 0.19 pounds (3.0 ounces) per day. This plant is connected to the local Publicly Owned Treatment Works ("POTW"). There is no evidence of pass-through. Phenol has not been detected in the POTW effluent. The proposed EPA limits are 49 parts per billion (ppb) daily average, and 19 ppb monthly average (this equates to 0.013 ounces per day). The phenol limitations proposed by the EPA will exact an extreme financial penalty on many of these small plants without any demonstrated need to improve upon the treatment provided by the POTW.

A. EPA did not adequately consider the total organic mass loading in determining the size and cost of the treatment system.

The EPA should have considered the mass loading of all organics in the terms of BOD₅. These data were available to the EPA through the responses to the 308 questionnaire. In general, the sizing of a biological system is determined by consideration of flow, total mass (BOD₅) loading, toxics, and sludge generation constraints. The EPA only used flow, and an arbitrary "phenol factor". This method disregards the presence of high BOD₅ or other conventional pollutants in low phenol wastewaters. This led to wholly inadequate treatment plant cost estimates for the OCPSF industry.

EPA has taken a convoluted approach to determine the cost of a treatment system. The first step was to establish the size of package treatment systems. This was done by assuming a target effluent BOD₅ of 25 ppm. An influent BOD₅ of between 500 and 2325 ppm was then used to calculate the size of the treatment equipment. This resulted in a detention time range of 18 to 413 hours (SAIS Inter-Office Memo, 11/1/89, Soterios Stavrou. Docket pages 00549-53).

EPA's calculation assumed that the organic fraction of all wastewaters would be degraded at a constant rate, and that the amount of biomass necessary to treat the water would remain constant for all wastes. These assumptions are wrong. Biological treatment does not selectively remove toxic pollutants. Organic fractions in wastewaters are acted upon by a complex series of biological, chemical, and physical mechanisms in an aerated system. The rate of organic compounds degradation by biomass is a function of its carbon content, hydrogen bonding, and the presence of refractory (slow to degrade) compounds. (Metcalf and Eddy, Wastewater Engineering. Treatment/Disposal/Reuse. Second Edition, 1979. pgs 394-440)

EPA based its cost estimates on the theoretical retention times for a very simple off-the-shelf package treatment plant. It was optimistically assumed that this simple system could treat the highly diverse OCPSF wastewaters by merely increasing the retention time. The EPA compounded this error by assuming that the flow was the key element in design of the package plant. EPA tried to account for the refractory characteristics of wastewaters by increasing the retention time of the system if phenol was also present in a wastewater. EPA failed to look at other aspects of wastewater treatment.

The Union Camp Valdosta Georgia plant may be used as an example. The EPA did not consider the high variability of the pollutant data in the OCPSF industry. These data were available through the responses to the 308 questionnaire. The data shown on tables V-20 through V-28 in the 1987 Development Document illustrate the importance of this variability. Table V-20 of this document summarizes the BOD₅ concentrations of the Thermoplastic category. The indirect dischargers in this category contain the Union Camp facility. The production weighted mean BOD₅ of this group was 2183 ppm. The production weighted standard deviation was 7094 ppm, indicating very great differences in average loadings from these plants. A review of the other categories indicate that in nearly every case, the variability of the data exceed the mean. Where the variability was low, the sample population was also low. EPA should have realized that the OCPSF wastestream is highly variable, and that the simple treatment system offered by the EPA is wholly inadequate to respond to this variability and achieve the proposed low standards.

B. EPA grossly underestimated the cost for removal of phenol from the waste stream.

In order to remove the small amount of phenol from the Valdosta plant, a biological pre-treatment system must be installed. The EPA estimated that this system should have a capital cost of \$87,125 (1991 dollars). Union Camp has estimated that the pre-treatment plant capital cost will actually cost \$754,000 (1991 dollars). This estimate is based on an engineered cost estimate performed for Union Camp. This document, entitled "Cost Estimate for Pretreatment Facility Union Camp, Valdosta, Georgia. SEC Donohue Job No. C-1703," is attached to these comments. Moreover, EPA has also underestimated operation and maintenance costs. EPA's estimate is \$46,340; Union Camp's estimate is \$93,500.

The breakdown of the cost for the major components of this treatment system are shown on Table 1. This table compares the EPA's cost estimate versus

Mr. George M. Jett, Project Officer
Environmental Protection Agency
March 5, 1992
Page 5

a more realistic cost for a system designed to treat the Valdosta plant wastewater.

TABLE I
COMPARISON OF CAPITAL AND ANNUAL O&M COSTS
IN-PLANT BIOLOGICAL PRETREATMENT SYSTEM
UNION CAMP, VALDOSTA GEORGIA
SEC DONOHUE JOB NO. C-1703

Item	SEC Donohue Cost	EPA Cost
CAPITAL COSTS		
Direct Costs for Activated Sludge System	\$ 343,000	\$ 77,800
Direct Costs for Sludge Handling System	200,000	9,325
Ancillary Piping Cost	85,000	0
Total Direct Costs	628,000	87,125
Contingencies and Engineering @ 20%	126,000	0
TOTAL CAPITAL COSTS	754,000	87,125

Total Annual O&M Costs	\$93,500	\$46,340
------------------------	----------	----------

All costs are presented in 1991 dollars. EPA costs, originally presented in 1982 dollars were updated using ENR construction costs indices of 3428 for June 1982 and 4892 for October 1991.

The O&M costs do not include additional analytical costs and operator expenses.

The great discrepancy in the EPA estimated cost, and the actual installed cost is the result of several errors. These errors include:

1. EPA relied on flow and toxic concentrations, rather than total organic mass loading data;
2. the omission of nutrient addition costs;
3. the omission of Engineering contingency, and ancillary equipment costs;
4. the underestimation of sludge handling and related costs; and,
5. the underestimation of Operation and Maintenance costs.

These items are discussed separately.

1. The EPA relied on flow and toxic concentration rather than total organic mass loading.

The most serious error involves the EPA's reliance on flow rather than mass discharge data. This led to the Agency's erroneous cost estimates. One of the most critical variables in the design of a treatment system is the mass loading. In the case of the OCPSF standards, biological treatment is the technology chosen to remove pollutants. The mass loading of BOD₅ is a critical factor in determining the size of the treatment system. The EPA used flow, and then adjusted the retention time if phenol was present. The BOD₅ of the Valdosta plant's wastewater was available to the EPA for use in making a proper cost estimate, but the EPA did not use it.

EPA's method does not provide enough flexibility to determine an accurate cost of treatment of complex wastewaters. EPA has stated that the OCPSF industry is very diverse, and that this diversity results in widely varying wastewaters. The generalizations used by the EPA do not provide realistic treatment estimates, however.

The Valdosta plant has both a low effluent flow and phenol concentration. The flow is approximately 5000 gpd and the phenol concentration is 4.5 ppm. These wastewater characteristics place the Valdosta plant into EPA's low-flow, low-phenol category. The detention time required for this type of plant was estimated to be 84 hours. The EPA model then calculated the cost of the equipment required to retain the wastewater for this period of time. These estimates all were based on pre-fabricated package plant components. The EPA model ignored the BOD₅ of the wastewater. At the Valdosta plant, the

BOD₅ load is approximately 1540 lb/day. The treatment plant specified by the EPA model could not treat the plant effluent to the proposed standards for phenol.

Phenol is readily treatable only in low concentrations, and with an acclimated biomass. The relatively high amounts of BOD₅ in the Valdosta effluent would be acted upon first. Based on the 84 hour treatment time allowed for in the EPA treatment system model, it is believed that the BOD₅ would be treated by the EPA system, but that the phenol would not be removed to a level required by the proposed standards. A system with a greater retention time capable of sustaining high mixed liquor concentrations and additional aeration capacity is required. This is the type of system specified for the Union Camp facility. The costs for this treatment system are detailed in the Sirrine report. The Union Camp estimated cost is 8.5 times greater than that stated by the EPA.

2. The EPA did not include the costs for nutrient addition and additional biomass mixing.

EPA stated that it would not be practical to assess completely the intricacies of each plant's treatment system (Supplement to the OCPSF Development Document...440/1-91/009). However, the EPA ignored some basic items in design of treatment systems. These are the need for nutrient addition and additional mixing energy to keep the biomass suspended. Biological treatment of many industrial wastewaters requires the addition of nitrogen or phosphorous. These nutrients must be present to insure adequate biomass growth. The need for a proper nutrient balance is especially critical for the high biomass concentrations cited by EPA. EPA must include the costs for nutrient addition in the treatment system estimate. Depending on the BOD₅ loading to a treatment system and the need for nutrient feed storage equipment, the cost of the materials and the additional O&M can be costly, easily adding \$50,000-\$100,000 to the construction of a large treatment system. The cost for nutrient addition is generally not required for municipal systems, since the nutrients are already a component of municipal wastewaters.

In order for the biomass to afford adequate treatment, it must be aerated and mixed. The EPA included the cost for aeration when sizing the treatment plant, but it is not clear that any provision was made for the high energy mixing required to keep the high concentration biomass in suspension. The package plant will not provide sufficient mixing, or even aeration, unless it is specifically designed as a high rate system. This type of system is more costly

than the standard package plant. Given the low cost estimates provided by the EPA, it is highly probable that a high rate system was not considered.

3. The EPA did not consider engineering and contingency costs.

The EPA should have included monies for engineering and contingency costs. The simple treatment system proposed by the EPA is often prefabricated and shipped in components. These simple package plants are frequently used to treat low strength wastes. When specifying these systems, engineering costs and contingency costs are minimal. The EPA has investigated the OCPSF industry for more than 15 years. Given the length of time the Agency has had to study the industry, the site visits EPA has made to a variety of plants, and the extensive waste loading database it has compiled, the Agency should have been aware that package plants will not "fit" into many of the OCPSF plants. But, the Agency has not considered this variability in its cost estimates. The design of a wastewater system at an OCPSF facility will require engineering, bench testing, and contingency expenditures. Engineering and contingency costs are frequently 20% of the capital cost. In the case of the Valdosta plant, the treatment system would require, at a minimum, design engineering, project site engineering, wastewater analysis and contingency money to account for the uncertainties inherent in these types of projects. Accordingly additional monies should have been included in the EPA cost estimate to cover such engineering and unforeseen events.

The Valdosta plant does not easily lend itself to the installation of the treatment system called for by the proposed standards. For instance, land availability is a serious problem. Union Camp anticipates additional land availability concerns. In order to construct the treatment plant, the piping must be run long distances. The cost for this oversight at Valdosta is estimated to be \$85,000. This expense alone, which is included in the Sirrine estimate prepared for Union Camp, nearly equals the treatment plant total cost predicted by the EPA.

4. The EPA did not adequately account for the cost of sludge handling and disposal.

EPA placed minimal importance on the costs of sludge handling, only including the cost of contract hauling of the solid waste. It is unclear whether EPA even considered sludge dewatering in its cost estimate. These costs are significant.

Again, this is exemplified by looking at the Valdosta plant. The EPA estimated that it would cost \$9,325 (1991 basis) for sludge handling. This is

based on a simple package plant, and possibly waste hauling. The estimate done by Sirrine indicates a realistic cost is \$225,000. This cost includes sludge dewatering, chemicals, and handling. Sludge will be a significant cost of this system due to the relatively high mass loading of BOD₅. The removal of this BOD₅ will result in large volumes of sludge. The sludge is difficult to dewater and will require expensive chemical additives and handling equipment. This BOD₅ load was ignored by the EPA, and the Agency's sludge cost estimates are vastly understated.

5. EPA underestimated the costs of Operation and Maintenance.
Operation and Maintenance ("O&M") costs will be very high for the Valdosta plant. The EPA estimated that the simple package plant will require \$46,340 per year for O&M. Of this total cost the EPA estimated that the treatment plant would require \$44,292 per year and the sludge handling O&M costs would be \$2,008 per year. These costs do not reflect the reality of maintaining a treatment system. The estimate prepared for Union Camp totaled \$93,500 per year. The breakdown of this cost is \$65,500 for the treatment system, and \$28,000 for sludge handling. These figures do not include operator and analytical expenses.

II. THE COST FOR THE REMOVAL OF SMALL AMOUNTS OF PHENOL WILL BE INORDINATELY HIGH.

The cost per pound for phenol treatment will be exorbitant. The Valdosta plant discharges approximately 4.5 ppm phenol per day at an average flow rate of 5,000 gallons per day. This equates to 0.19 pounds per day of phenol discharged from the plant. Based on an operating year of 350 days, this equates to 66.5 pounds of phenol per year. The POTW is capable of removing phenol so that it is not detected in the POTW effluent. Assuming that EPA's data are correct and the POTW removes 96% of the phenol, only 2.66 pounds of phenol are discharged to the receiving stream in a year. The cost for removing this minute amount of phenol is extremely high.

The EPA estimated that the capital cost of a treatment system for the Valdosta plant would be \$87,125 (1991 basis). A more realistic capital cost is \$754,000 (1991 basis). Using EPA's methodology and amortizing the capital cost of the treatment system over 10 years this equates to \$113,100 dollars per year. The cost of annual O&M is estimated to be \$93,500. The total capital plus operational cost per year is therefore \$140,343 (EPA 1982 basis). The cost for removal of the phenol from the Union Camp facility is \$140,343 / 2.66 pounds or \$52,760 per pound (EPA 1982 basis). The EPA estimated the cost to be \$38 per pound. This is a wholly unrealistic expense for a waste stream that already receives appropriate treatment by a POTW.

When considering the relative toxicity of phenol, the cost for treatment is even greater. EPA has ranked the toxicity of phenol against other toxic compounds, and found that phenol is only slightly toxic (Cost-Effectiveness Analysis for the Organic Chemicals, Plastics, and Synthetic Fibers Industry. US EPA Economic Analysis Branch, Office of Water Regulations and Standards. Sept. 1987). The toxicity equivalence given to phenol is 0.0022 toxic weight units. When the mass discharge of phenol is multiplied by the toxicity factor to yield a comparable toxicity weight, the "actual" mass of toxic material is $2.66 \times 0.0022 = 0.006$ pounds of toxic material discharged per year. Using this value, the true cost of preventing toxic material from reaching the receiving stream is $\$140,343 / 0.006$ or $\$23.4$ million dollars per pound! The cost for phenol treatment is extraordinarily high, and is totally unjustifiable in light of the treatment afforded by the POTW.

Congress did not intend for identical and redundant treatment to be required for dischargers to a POTW. See 33 U.S.C. §1317(b)(1). Given the unjustifiably high costs associated with redundant treatment, Union Camp urges EPA to reconsider and give indirect dischargers to a POTW special consideration in the context of the present rulemaking. Like a bad wine that gets no better with age, EPA's misguided refusal to promulgate an environmentally sound regulation will not ripen into good public policy. There is simply no sound environmental reason why Union Camp and many others should be forced to pay exorbitant costs for what amounts to redundant treatment of its effluent.

EPA apparently concedes that even if a particular POTW's removal rate were in excess of 96%, the PSES standards it has proposed would apply. See Chemical Manufac. Assoc. v. EPA, 870 F.2d 177, 245 (5th Cir. 1989). The Agency needs to consider carefully whether achieving the higher removal rates are really worth the obviously onerous costs involved. Clearly the minimal-- if extant -- environmental benefits involved do not justify the costs.

The POTW that receives the Valdosta plant's effluent serves as a good example, since it does more than an adequate job of treating phenol, with no evidence of pass-through. Therefore, a requirement for in-plant treatment would simply -- and exclusively -- benefit the contractors Union Camp will be forced to hire to build the treatment facility.

III. EPA HAS NOT SHOWN THAT THE PROPOSED DISCHARGE LIMITATIONS ARE FEASIBLE OR ACHIEVABLE.

Union Camp disagrees with EPA's assertion that the Fifth Circuit's Chemical Manuf. Assoc. remand "on the issue of costing did not re-open the issue of technical achievability generally." 56 Fed. Reg. at 63,903 (citations omitted). Even a casual

reading of the case discloses a much broader mandate. As the court itself stated, "[t]he EPA has failed . . . to demonstrate a reasonable basis for its conclusion that in-plant treatment can eliminate pollutants as effectively as the end-of-pipe systems . . ." 885 F.2d at 265. Thus, technical achievability is well within the scope of the remand, and must be considered by the Agency in the present proceeding in addition to the issues the Agency itself concedes are to be considered. If EPA fails to address technical achievability issues in its final rule, that rule will be no less arbitrary and capricious than the one remanded by the Fifth Circuit.

The Agency has not demonstrated that biological treatment is capable of meeting the extremely low discharge standards. This is especially true of low flow, high strength wastewaters. EPA did not make this showing in the 1987 rulemaking, and has not done so in this proposal. Issues were raised in the 1987 rulemaking questioning the feasibility and effectiveness of in-plant biological treatment. These issues were: (1) the need for pre-treatment steps including neutralization, oil and suspended solids removal; (2) the need for flow and concentration equalization; and (3) the aeration basin hydraulic retention time (Chemical Manufacturers Association Brief, pgs 51-56).

Union Camp has engaged an engineering consultant to prepare a cost estimate for the construction of a treatment system (Sirrinc). This system would attempt to treat the wastewater at the Valdosta, Georgia plant. Sirrinc has based this design on a general familiarity with the nature of Valdosta's wastewater gained during a year-long affiliation with Union Camp. During this time, Sirrinc conducted sampling, analyses and treatability testing at the site. However, no bench-scale testing of this wastewater was carried out to substantiate that biological treatment can achieve consistent removal of phenol down to the specified limits.

The Valdosta plant's production units are strictly batch operations. Like Synthetic Organic Chemical Manufacturers Association ("SOCMA") members, Union Camp uses this batch plant to produce small quantities of specialized products to meet specific customer demands. Raw materials are introduced on an intermittent basis. Equipment may be idled while waiting for raw materials, for quality control checks, or to undergo cleaning. As a result, the effluent from the Valdosta plant is similar to that of others in its subcategory in that it varies widely in flow, strength and composition, depending on events taking place in the plant. One study of Valdosta plant wastewater showed that the range of monthly average Chemical Oxygen Demand ("COD") concentration varied by a factor of 2.5. Day-to-day variations can be greater.

Biological treatment relies on providing a continuous supply of nourishment to a discrete population of microorganisms. It is well documented in the literature that optimum destruction of toxic constituents occurs with acclimated biomass populations.

Due to the frequently changing nature of this effluent, Union Camp's wastewater engineering consultants have, in the past, advised against on-site biological treatment processes because of the difficulty of maintaining a stable population exclusively for the plant. (These difficulties are not experienced at the POTW where a mixture of diverse wastewater is processed.)

Therefore, Union Camp has serious reservations that even the larger, more expensive plant could achieve the extremely low phenol discharge limits.

IV. THE COMPLEXITY OF THE OCPSF CATEGORY DEMANDS LIBERAL USE OF FUNDAMENTALLY DIFFERENT FACTORS VARIANCES.

In its December 6, 1991 repropoed rule, the Agency itself has provided ample support for the liberal grant of fundamentally different factors ("FDF") variances within the OCPSF category. As EPA stated:

-- "[t]he OCPSF industry is large and diverse, and many plants are highly complex . . . production often varies from day to day , or even from hour to hour" 56 Fed. Reg. 63,897, 63,900.

-- "Due to the extraordinary complexity and variety in the OCPSF industry, it would be nearly impossible to analyze each plant's waste stream" Id.

-- "In recognition of the extraordinary complexity of the OCPSF industry and the impracticability of developing a detailed knowledge of the production practices and the factors affecting wastewater treatment at each of the OCPSF plants, EPA based the BAT limitations on certain reasonable, simplifying assumptions and conclusions" Id. at 63,901.

-- "the OCPSF industry is simply too complex for the Agency to approach a perfect plant-specific knowledge of the industry" Id. at 63,902.

These broad statements reflect a sensitivity that, at a minimum, should be re-emphasized in the preamble to the Agency's final rule.

The Agency is likely to be petitioned for a great many FDF variances within the OCPSF category. While as a statutory matter such variances of course will be determined on a case-by-case basis, see 33 U.S.C. §1311(n), the Agency should attempt to define for potential applicants what EPA will be looking for in reviewing applications.

Pursuant to 33 U.S.C. §1311(n)(1)(B), the following summarizes factors which Union Camp believes make its Valdosta plant fundamentally different from EPA's model:

1. Removal cost

The \$23.4 million per pound equivalent (\$52,760 per actual pound) removal cost which Union Camp would incur to remove less than three pounds per year of phenol from the environment is totally out of proportion to the overall \$38 per pound equivalent removal cost derived during development of the categorical standard.

2. Nature or quality of wastewater pollutants contained in raw waste load

Union Camp Valdosta's wastewater contains substantially higher levels of conventional organic pollutants than the plants used in the costed model. The model treatment system assumes a raw waste BOD₅ loading of between 500 and 2,000 ppm while Union Camp's raw waste BOD₅ averages 15,000 ppm.

3. Volume of wastewater discharged

Union Camp discharges a relatively small flow to the POTW, an average of 5,000 gallons per day. This is a far smaller plant than the 250,000 gallons per day average discharger EPA used in the 1987 rulemaking.

4. Energy requirements

Due to the higher strength of Valdosta's wastewater, the power consumed to aerate the Valdosta plant wastewater will be disproportionately higher than that consumed by the EPA model.

5. Land availability

Land availability is an issue which will cost Union Camp additional capital. Union Camp's Valdosta plant does have sufficient land to build a biological treatment facility. This land is not located in the proximity of the current wastewater treatment facilities. The plant is bisected by a rail line and public roadway into two segments:

- the main plant is located on a narrow piece of property approximately 9 acres in size which houses all reactors, a laboratory, warehouse and storage facilities, and the main office.

- an additional 25 acre tract of property located across the railroad tracks and roadway houses off site steam and hot oil utilities.

The former area which houses the original plant is quite congested and close to a roadway. The only unimproved area is a very narrow strip of property sandwiched between the rail lines and a public highway. This area, which currently features a spill containment pond, is quite swampy and would require extensive site preparation. Because of concerns about potential odor, cost of site preparation, and other issues, this area is not appropriate to house the biological treatment area.

The latter area would be a logical site for a water treatment plant but is remote from current water treatment facilities. Several hundred feet of influent and effluent pipe would have to be installed to connect the current wastewater pretreatment facilities to the remote plant and a return line would be required to pipe it back into the city sewer.

As cited above, it will cost an additional \$85,000 for direct piping of the water to and from a location with sufficient land to accommodate the treatment plant. This provision adds substantially to the overall cost of the technology.

6. Cost/Economic Impact

Under the regulation as proposed, \$206,600 (1991 basis) annualized capital and operating cost for removing phenol is so high that the reduction in profitability would severely threaten the economic viability of the Valdosta plant. A closure of this plant would mean the loss of at least eighty jobs within Union Camp and a loss of over 1-million dollars in annual income for businesses in the local community who provide goods and services to the plant.

V. INCORPORATION OF CMA AND SOCMA COMMENTS.

Having reviewed the comments submitted to the Agency by the Chemical Manufacturers Association and the Synthetic Organic Chemicals Manufacturers Association, Union Camp hereby incorporates these comments into its own.

Mr. George M. Jett, Project Officer
Environmental Protection Agency
March 5, 1992
Page 15

Union Camp requests that EPA carefully consider the comments and issues raised here. Failure to amend the proposed OCPSF regulations will have a disastrous and unjustified impact on the industry.

Sincerely,



D. W. Marshall
Director, Corporate Office of
Environmental Affairs

cc: Mr. P. L. Acton - Wayne
Mr. A. E. Cawrse - Savannah
Mr. J. E. Freeman - Savannah
Mr. W. L. Jones - Wayne
Mr. J. B. Launey - Valdosta
Mr. D. Law - Wayne
Mr. N. E. Lawson - Savannah
Ms. P. A. Nevrincean - Savannah
Ms. A. D. Perry - Wayne
Mr. W. H. Trice - Wayne
Mr. J. C. Whitaker - Washington

March 2, 1992

Ms. Pat Nevrinean
Union Camp Corporation
Chemical Products Division
West Lathrop Avenue
Savannah, GA 31402

Subject: Cost Estimate for Pretreatment Facility
Union Camp, Valdosta, Georgia
SEC Donohue Job No. C-1703

Dear Ms. Nevrinean:

Detailed below is a summary comparison of capital and annual operating and maintenance (O&M) costs developed by the United States Environmental Protection Agency (EPA) and SEC Donohue for an in-plant biological pretreatment system for the treatment of phenols and other priority pollutant organics at the Union Camp facility in Valdosta, Georgia. In the 'Development Document for Effluent Limitations: Guidelines and Standards for the Organic Chemicals, Plastics and Synthetic Fibers Point Source Category' published in October 1987, EPA estimated capital and O&M costs for small (<0.5 MGD) in-plant biological treatment systems. Capital costs in 1982 of \$42,163 and annual O&M costs of \$31,778 were estimated for biological treatment of the Union Camp facility wastewater.

The original regulations, promulgated in November 1987 were challenged by the Chemical Manufacturer's Association (CMA). On October 10, 1989 the Fifth Circuit Court of Appeals remanded two parts of the regulations. The first and more important part consisted of effluent limitations for 19 of the 20 pollutants which were remanded based upon an error in EPA's costing of the biological treatment systems.

EPA subsequently recognized that because of diversity in the OCPSF industry, there is a significant amount of variability in BOD₅ and TSS concentrations in wastewater generated from different OCPSF plants. The capital and O&M costs were therefore revised based on revised biological treatment systems with increased hydraulic detention times as a function of reported or projected raw waste toxic pollutant concentrations. The residence times were selected as a function of the influent phenol concentration. Thus plants with phenol concentrations up to 50 mg/l were designed for a detention time of 84 hours, plants with phenol concentrations up to 300 mg/l were assigned a detention time of 130 hours, and plants with phenol concentrations over 300 mg/l were assigned a detention time of 413 hours. It appears, however, that EPA continued to ignore the impact of influent BOD concentration in selecting the system detention time. As a consequence, facilities with wastewater containing high levels of BOD, and less than 50 mg/l phenol were determined by EPA to require a maximum hydraulic detention time of only 84 hours.

For the Union camp wastewater (design flow = 10,780 gpd, design BOD₅ loading = 1540 lb/day) containing approximately 4.5 mg/l phenol, EPA probably selected a system with a detention time of 84 hours or less in estimating revised biological treatment costs. Accordingly, the revised capital and O&M costs in 1982 dollars were estimated to be \$61,080 and \$32,470, respectively. EPA assumed that a package treatment system would be capable of reducing phenol in the Union Camp wastewater below the proposed effluent guideline of 19 µg/l.

Based on SEC Donohue's prior treatability experience with industrial wastewaters containing non conventional (priority pollutant) organics, it appears that there is a flaw in the above assumption made by EPA. In order to achieve complete removal of xenobiotic compounds such as phenol from an industrial wastewater containing alternate readily degradable materials, it is necessary to establish a bacterial population capable of using phenol as a carbon source. The growth rate of phenol degrading organisms is significantly lower compared with organisms growing on more readily degradable materials such as domestic sewage (*Reference: Biological Wastewater Treatment - Theory and Applications, C.P. Leslie Grady Jr. and Henry C. Lim, Marcel Dekker Inc.*). Consequently, in order to maintain an adequate phenol degrading population, biological systems required to achieve complete removal of phenol are designed at low food to microorganism ratios and long hydraulic detention times.

Based on the above discussion, in order to ensure consistent compliance with the proposed phenol discharge limitation, design of the in-plant biological system for Union Camp's high strength wastewater should also address removal of BOD. The system proposed by EPA, with a hydraulic detention time of 84 hours will achieve only partial removal of BOD. From communications with package plant vendors it was also determined that package extended aeration type activated sludge systems do not possess the necessary volume or aeration capabilities required for treating the high strength Union Camp wastewater. The vendors suggested that some pretreatment or dilution would be required to reduce the BOD loading to the package treatment plant. Therefore, we believe that the system selected by EPA to estimate compliance costs for the Union Camp wastewater is technically incapable of meeting the proposed regulations.

SEC Donohue proposed a conceptual design for an extended aeration activated sludge system capable of adequately treating the Union Camp wastewater to meet the proposed regulations. The design was based on a food to microorganism (F/M) ratio of 0.1 lb BOD/day-lb MLVSS. For extended aeration systems, EPA (in Process Control Manual for Biological Wastewater Treatment Facilities) typically recommends a design F/M between 0.05 to 0.1 lb BOD/day-lb MLVSS. SEC Donohue used this F/M value to size the aeration basin, to estimate total air requirements, and to estimate sludge production rates.

Based on the above design F/M ratio, a system with an effective hydraulic detention time of 410 hours was selected. Presented in Table I is a comparison of capital and annual O&M costs estimated by SEC Donohue, and those proposed by EPA for the Union Camp facility.

TABLE I
 COMPARISON OF CAPITAL AND ANNUAL O&M COSTS
 IN-PLANT BIOLOGICAL PRETREATMENT SYSTEM
 UNION CAMP, VALDOSTA, GEORGIA
 SEC DONOHUE JOB NO. C-1703

ITEM	SEC Donohue Cost	EPA Cost for UCC Wastewater
CAPITAL COSTS		
Direct Costs for Activated Sludge System Exclusion Piping	343,000	77,800
Direct Costs for Sludge Handling System Exclusion Piping	200,000	9,325
Direct Piping Cost ¹	85,000	-
Total Direct Costs	628,000	87,125
Contingencies and Engineering @ 20%	126,000	0
TOTAL CAPITAL COSTS	754,000	87,125
ANNUAL O&M COSTS		
Activated Sludge System	65,500	44,332
Sludge Handling System	28,000	2,008
TOTAL ANNUAL O&M COSTS	93,500	46,340

All costs are presented in 1991 dollars. EPA costs, originally presented in 1982 dollars were updated using ENR construction cost indices of 3428 for June, 1982 and 4892 for October, 1991.

¹ Due to space constraints, the biological treatment facility would have to be located remote from the plant area. Consequently, piping costs are expected to be fairly significant. These site specific piping costs were not considered in EPA's cost estimate.

Significant differences are evident in the cost estimates developed by SEC Donohue and EPA. The following explanations are proposed for these differences:

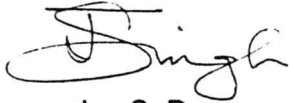
- EPA selected an "off-the-shelf" package plant system for the Union Camp application.
- While such a "package plant" system offers potential capital cost savings due to its pre-engineered design, it is not technically feasible for the high strength Union Camp wastewater. This was confirmed by telephone communications with package plant vendors.
- EPA did not address site specific costs such as civil/structural work and piping for wastewater treatment facilities located remote from the process facility.
- EPA significantly underestimated sludge generation and handling requirements, and costs. At an average influent loading of 1500 lb BOD/day it is estimated that at least 125 lb/day of sludge would be produced. The sludge handling cost of \$9,325 (1991 dollars) estimated by EPA is inadequate. SEC Donohue estimated sludge handling associated capital costs of \$225,000. The basis for EPA's sludge handling cost estimate is not well defined.
- Annual O&M costs for the EPA systems were lower compared with the SEC Donohue estimate. This is primarily because a typical skid mounted package system may require less maintenance compared with a system comprised of individually designed units. Furthermore, EPA did not include sludge handling and disposal costs. It appears from the Development Document that EPA assumed systems with a flow less than 0.5 MGD will not generate significant quantities of sludge. As stated above, due to the high strength of the Union Camp wastewater, significant quantities of sludge will in fact be produced.
- SEC Donohue has also included chemical costs (acid, alkali, and lime for sludge conditioning) that were probably not factored into EPA's estimated O&M costs.
- Since EPA used a package plant design to develop O&M costs, the labor rates used by EPA were probably lower since package plants typically require a less skilled operator.

In summary, EPA significantly underestimated capital and annual O&M costs for in-plant biological pretreatment of the Union Camp wastewater. EPA based their cost estimate on a pre-engineered package plant system that is technically incapable of meeting the proposed pretreatment standard of 19 $\mu\text{g/l}$ for phenol. The actual capital and annual O&M costs for an engineered in-plant biological pretreatment system capable of meeting the proposed OCPSF regulations are likely to be approximately \$754,000 and \$93,500 in 1991 dollars.

March 2, 1992
Cost Estimate For Pretreatment Facility
Page 5

Please call me at (803) 234-3079 or David Welch at (803) 234-3021 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "J. S. Dang". The signature is stylized with a large, looped "J" and a cursive "S".

Jas S. Dang
Project Engineer

cc: Mr. David Welch
Mr. Ted Clark
Project File



P. O. BOX 1391, SAVANNAH, GA. 31402 TELEPHONE (912) 238-7484

CORPORATE OFFICE OF
ENVIRONMENTAL AFFAIRS

March 5, 1992

Mr. George M. Jett, Project Officer
Chemicals Branch, Engineering and Analysis Div.
WH-522
Environmental Protection Agency
401 M Street SW
Washington, DC 20460

Attention: EAD Docket Clerk
Organic Chemicals, Plastics, and Synthetic Fibers Industry
[WH-552]

RE: ORGANIC CHEMICALS, PLASTICS AND SYNTHETIC FIBERS
CATEGORY EFFLUENT LIMITATIONS GUIDELINES,
PRETREATMENT STANDARDS, AND NEW SOURCE PERFORMANCE
STANDARDS. FEDERAL REGISTER VOL. 56, NO. 235. DECEMBER 6,
1991.

Dear Mr. Jett:

Union Camp Corporation respectfully submits the following comments in the above-captioned proceeding, and urges the Environmental Protection Agency ("EPA" or the "Agency") to re-evaluate its proposed rule. As proposed, the rule will have a disastrous and unjustifiable impact on affected industry.

Union Camp is a major manufacturer of paper and related products. Its Chemical Division operates three domestic manufacturing facilities, including a plant in Valdosta, Georgia (the "Valdosta plant"). The Valdosta plant produces tall oil rosin based products, which are sold to other manufacturers for the production of inks and coatings. As part of Standard Industrial Classification 2821 (Thermoplastic Resins), the Valdosta plant will be subject to pretreatment standards for existing sources ("PSES") for Organic Chemicals, Plastics, and Synthetic Fibers ("OCPSF"). Union Camp submits that the effects of EPA's highly

problematic OCPSF rule on its Valdosta plant are emblematic of the effects that similarly regulated operations will have to endure.¹

I. EPA's METHOD FOR CALCULATING THE COST OF BIOLOGICAL TREATMENT IS FLAWED.

In Chemical Manuf. Assoc. v. EPA, 885 F.2d 253 (5th Cir. 1989), the U. S. Court of Appeals for the Fifth Circuit remanded the Agency's OCPSF rule with respect to biological treatment on very broad grounds. In its concisely worded ruling on "The Achievability of the BAT Limitations for Priority Pollutants for Which In-Plant Biological Treatment is the Model Technology," the Fifth Circuit focused on EPA's highly problematic use of three end-of-pipe plans to develop its best available technology ("BAT") standard. The court properly delineated the flaws in EPA's methodology, including high variability in detention time, and concluded simply that EPA's "record contains no performance data for in-plant treatment of the twenty priority pollutants at issue." 885 F.2d at 265. EPA itself acknowledges that the court's remand encompasses the designs of the model treatments systems used to estimate the costs of compliance for the numerical limitations proposed. 56 Fed. Reg. at 63,903. Nevertheless, even as revised, EPA's cost estimates continue to be invalid.

One portion of the court's remand concerned EPA's costing of the model in-plant biological treatment technology. The Court had determined that the previous costing had been done in error. EPA has redone the cost analysis and has presented these data in Supplement to the OCPSF Development Document for Effluent Limitations Guidelines and New Source Performance Standards for the Organic Chemicals, Plastics, and Synthetic Fibers Point Source Category, November 1991. Union Camp believes that the conclusions drawn by this cost analysis are still incorrect for the industry as a whole and that the Agency has substantially underestimated the costs of compliance. The Agency's underestimation of costs is illustrated in the case of the Valdosta plant.

The Valdosta plant manufactures a line of phenolic resins. The phenol is present as a contaminant in the raw materials used to formulate these compounds. This plant

¹Union Camp has taken the time to review those parts of the administrative record of applicability to its Valdosta, Georgia plant and has tried to review data relating to other indirect dischargers. As the Agency knows, however, many parties submitting comments to the record have elected to claim confidentiality with respect to technical data in their comments. The confidentiality of this data, while perfectly justifiable, has hampered Union Camp's ability to establish firmly the similarities in its operations with other operations in the OCPSF category. Union Camp should not be prejudiced in any way by this situation.

is similar to many other small OCPSF facilities. As a result of normal process loss, very small amounts of phenol are present in the Valdosta plant's effluent. The average daily discharge of phenol from this plant is about 4.5 parts per million (ppm) or about 0.19 pounds (3.0 ounces) per day. This plant is connected to the local Publicly Owned Treatment Works ("POTW"). There is no evidence of pass-through. Phenol has not been detected in the POTW effluent. The proposed EPA limits are 49 parts per billion (ppb) daily average, and 19 ppb monthly average (this equates to 0.013 ounces per day). The phenol limitations proposed by the EPA will exact an extreme financial penalty on many of these small plants without any demonstrated need to improve upon the treatment provided by the POTW.

A. EPA did not adequately consider the total organic mass loading in determining the size and cost of the treatment system.

The EPA should have considered the mass loading of all organics in the terms of BOD₅. These data were available to the EPA through the responses to the 308 questionnaire. In general, the sizing of a biological system is determined by consideration of flow, total mass (BOD₅) loading, toxics, and sludge generation constraints. The EPA only used flow, and an arbitrary "phenol factor". This method disregards the presence of high BOD₅ or other conventional pollutants in low phenol wastewaters. This led to wholly inadequate treatment plant cost estimates for the OCPSF industry.

EPA has taken a convoluted approach to determine the cost of a treatment system. The first step was to establish the size of package treatment systems. This was done by assuming a target effluent BOD₅ of 25 ppm. An influent BOD₅ of between 500 and 2325 ppm was then used to calculate the size of the treatment equipment. This resulted in a detention time range of 18 to 413 hours (SAIS Inter-Office Memo, 11/1/89, Soterios Stavrou. Docket pages 00549-53).

EPA's calculation assumed that the organic fraction of all wastewaters would be degraded at a constant rate, and that the amount of biomass necessary to treat the water would remain constant for all wastes. These assumptions are wrong. Biological treatment does not selectively remove toxic pollutants. Organic fractions in wastewaters are acted upon by a complex series of biological, chemical, and physical mechanisms in an aerated system. The rate of organic compounds degradation by biomass is a function of its carbon content, hydrogen bonding, and the presence of refractory (slow to degrade) compounds. (Metcalf and Eddy, Wastewater Engineering. Treatment/Disposal/Reuse. Second Edition, 1979. pgs 394-440)

EPA based its cost estimates on the theoretical retention times for a very simple off-the-shelf package treatment plant. It was optimistically assumed that this simple system could treat the highly diverse OCPSF wastewaters by merely increasing the retention time. The EPA compounded this error by assuming that the flow was the key element in design of the package plant. EPA tried to account for the refractory characteristics of wastewaters by increasing the retention time of the system if phenol was also present in a wastewater. EPA failed to look at other aspects of wastewater treatment.

The Union Camp Valdosta Georgia plant may be used as an example. The EPA did not consider the high variability of the pollutant data in the OCPSF industry. These data were available through the responses to the 308 questionnaire. The data shown on tables V-20 through V-28 in the 1987 Development Document illustrate the importance of this variability. Table V-20 of this document summarizes the BOD₅ concentrations of the Thermoplastic category. The indirect dischargers in this category contain the Union Camp facility. The production weighted mean BOD₅ of this group was 2183 ppm. The production weighted standard deviation was 7094 ppm, indicating very great differences in average loadings from these plants. A review of the other categories indicate that in nearly every case, the variability of the data exceed the mean. Where the variability was low, the sample population was also low. EPA should have realized that the OCPSF wastestream is highly variable, and that the simple treatment system offered by the EPA is wholly inadequate to respond to this variability and achieve the proposed low standards.

B. EPA grossly underestimated the cost for removal of phenol from the waste stream.

In order to remove the small amount of phenol from the Valdosta plant, a biological pre-treatment system must be installed. The EPA estimated that this system should have a capital cost of \$87,125 (1991 dollars). Union Camp has estimated that the pre-treatment plant capital cost will actually cost \$754,000 (1991 dollars). This estimate is based on an engineered cost estimate performed for Union Camp. This document, entitled "Cost Estimate for Pretreatment Facility Union Camp, Valdosta, Georgia. SEC Donohue Job No. C-1703," is attached to these comments. Moreover, EPA has also underestimated operation and maintenance costs. EPA's estimate is \$46,340; Union Camp's estimate is \$93,500.

The breakdown of the cost for the major components of this treatment system are shown on Table 1. This table compares the EPA's cost estimate versus

a more realistic cost for a system designed to treat the Valdosta plant wastewater.

TABLE I
COMPARISON OF CAPITAL AND ANNUAL O&M COSTS
IN-PLANT BIOLOGICAL PRETREATMENT SYSTEM
UNION CAMP, VALDOSTA GEORGIA
SEC DONOHUE JOB NO. C-1703

Item	SEC Donohue Cost	EPA Cost
CAPITAL COSTS		
Direct Costs for Activated Sludge System	\$ 343,000	\$ 77,800
Direct Costs for Sludge Handling System	200,000	9,325
Ancillary Piping Cost	85,000	0
Total Direct Costs	628,000	87,125
Contingencies and Engineering @ 20%	126,000	0
TOTAL CAPITAL COSTS	754,000	87,125
Total Annual O&M Costs	\$93,500	\$46,340

All costs are presented in 1991 dollars. EPA costs, originally presented in 1982 dollars were updated using ENR construction costs indices of 3428 for June 1982 and 4892 for October 1991.

The O&M costs do not include additional analytical costs and operator expenses.

The great discrepancy in the EPA estimated cost, and the actual installed cost is the result of several errors. These errors include:

1. EPA relied on flow and toxic concentrations, rather than total organic mass loading data;
2. the omission of nutrient addition costs;
3. the omission of Engineering contingency, and ancillary equipment costs;
4. the underestimation of sludge handling and related costs; and,
5. the underestimation of Operation and Maintenance costs.

These items are discussed separately.

1. The EPA relied on flow and toxic concentration rather than total organic mass loading.

The most serious error involves the EPA's reliance on flow rather than mass discharge data. This led to the Agency's erroneous cost estimates. One of the most critical variables in the design of a treatment system is the mass loading. In the case of the OCPSF standards, biological treatment is the technology chosen to remove pollutants. The mass loading of BOD₅ is a critical factor in determining the size of the treatment system. The EPA used flow, and then adjusted the retention time if phenol was present. The BOD₅ of the Valdosta plant's wastewater was available to the EPA for use in making a proper cost estimate, but the EPA did not use it.

EPA's method does not provide enough flexibility to determine an accurate cost of treatment of complex wastewaters. EPA has stated that the OCPSF industry is very diverse, and that this diversity results in widely varying wastewaters. The generalizations used by the EPA do not provide realistic treatment estimates, however.

The Valdosta plant has both a low effluent flow and phenol concentration. The flow is approximately 5000 gpd and the phenol concentration is 4.5 ppm. These wastewater characteristics place the Valdosta plant into EPA's low-flow, low-phenol category. The detention time required for this type of plant was estimated to be 84 hours. The EPA model then calculated the cost of the equipment required to retain the wastewater for this period of time. These estimates all were based on pre-fabricated package plant components. The EPA model ignored the BOD₅ of the wastewater. At the Valdosta plant, the

BOD₅ load is approximately 1540 lb/day. The treatment plant specified by the EPA model could not treat the plant effluent to the proposed standards for phenol.

Phenol is readily treatable only in low concentrations, and with an acclimated biomass. The relatively high amounts of BOD₅ in the Valdosta effluent would be acted upon first. Based on the 84 hour treatment time allowed for in the EPA treatment system model, it is believed that the BOD₅ would be treated by the EPA system, but that the phenol would not be removed to a level required by the proposed standards. A system with a greater retention time capable of sustaining high mixed liquor concentrations and additional aeration capacity is required. This is the type of system specified for the Union Camp facility. The costs for this treatment system are detailed in the Sirrine report. The Union Camp estimated cost is 8.5 times greater than that stated by the EPA.

2. The EPA did not include the costs for nutrient addition and additional biomass mixing.

EPA stated that it would not be practical to assess completely the intricacies of each plant's treatment system (Supplement to the OCPSF Development Document...440/1-91/009). However, the EPA ignored some basic items in design of treatment systems. These are the need for nutrient addition and additional mixing energy to keep the biomass suspended. Biological treatment of many industrial wastewaters requires the addition of nitrogen or phosphorous. These nutrients must be present to insure adequate biomass growth. The need for a proper nutrient balance is especially critical for the high biomass concentrations cited by EPA. EPA must include the costs for nutrient addition in the treatment system estimate. Depending on the BOD₅ loading to a treatment system and the need for nutrient feed storage equipment, the cost of the materials and the additional O&M can be costly, easily adding \$50,000-\$100,000 to the construction of a large treatment system. The cost for nutrient addition is generally not required for municipal systems, since the nutrients are already a component of municipal wastewaters.

In order for the biomass to afford adequate treatment, it must be aerated and mixed. The EPA included the cost for aeration when sizing the treatment plant, but it is not clear that any provision was made for the high energy mixing required to keep the high concentration biomass in suspension. The package plant will not provide sufficient mixing, or even aeration, unless it is specifically designed as a high rate system. This type of system is more costly

than the standard package plant. Given the low cost estimates provided by the EPA, it is highly probable that a high rate system was not considered.

3. The EPA did not consider engineering and contingency costs.

The EPA should have included monies for engineering and contingency costs. The simple treatment system proposed by the EPA is often prefabricated and shipped in components. These simple package plants are frequently used to treat low strength wastes. When specifying these systems, engineering costs and contingency costs are minimal. The EPA has investigated the OCPSF industry for more than 15 years. Given the length of time the Agency has had to study the industry, the site visits EPA has made to a variety of plants, and the extensive waste loading database it has compiled, the Agency should have been aware that package plants will not "fit" into many of the OCPSF plants. But, the Agency has not considered this variability in its cost estimates. The design of a wastewater system at an OCPSF facility will require engineering, bench testing, and contingency expenditures. Engineering and contingency costs are frequently 20% of the capital cost. In the case of the Valdosta plant, the treatment system would require, at a minimum, design engineering, project site engineering, wastewater analysis and contingency money to account for the uncertainties inherent in these types of projects. Accordingly additional monies should have been included in the EPA cost estimate to cover such engineering and unforeseen events.

The Valdosta plant does not easily lend itself to the installation of the treatment system called for by the proposed standards. For instance, land availability is a serious problem. Union Camp anticipates additional land availability concerns. In order to construct the treatment plant, the piping must be run long distances. The cost for this oversight at Valdosta is estimated to be \$85,000. This expense alone, which is included in the Serrine estimate prepared for Union Camp, nearly equals the treatment plant total cost predicted by the EPA.

4. The EPA did not adequately account for the cost of sludge handling and disposal.

EPA placed minimal importance on the costs of sludge handling, only including the cost of contract hauling of the solid waste. It is unclear whether EPA even considered sludge dewatering in its cost estimate. These costs are significant.

Again, this is exemplified by looking at the Valdosta plant. The EPA estimated that it would cost \$9,325 (1991 basis) for sludge handling. This is

based on a simple package plant, and possibly waste hauling. The estimate done by Sirrine indicates a realistic cost is \$225,000. This cost includes sludge dewatering, chemicals, and handling. Sludge will be a significant cost of this system due to the relatively high mass loading of BOD₅. The removal of this BOD₅ will result in large volumes of sludge. The sludge is difficult to dewater and will require expensive chemical additives and handling equipment. This BOD₅ load was ignored by the EPA, and the Agency's sludge cost estimates are vastly understated.

5. EPA underestimated the costs of Operation and Maintenance.

Operation and Maintenance ("O&M") costs will be very high for the Valdosta plant. The EPA estimated that the simple package plant will require \$46,340 per year for O&M. Of this total cost the EPA estimated that the treatment plant would require \$44,292 per year and the sludge handling O&M costs would be \$2,008 per year. These costs do not reflect the reality of maintaining a treatment system. The estimate prepared for Union Camp totaled \$93,500 per year. The breakdown of this cost is \$65,500 for the treatment system, and \$28,000 for sludge handling. These figures do not include operator and analytical expenses.

II. THE COST FOR THE REMOVAL OF SMALL AMOUNTS OF PHENOL WILL BE INORDINATELY HIGH.

The cost per pound for phenol treatment will be exorbitant. The Valdosta plant discharges approximately 4.5 ppm phenol per day at an average flow rate of 5,000 gallons per day. This equates to 0.19 pounds per day of phenol discharged from the plant. Based on an operating year of 350 days, this equates to 66.5 pounds of phenol per year. The POTW is capable of removing phenol so that it is not detected in the POTW effluent. Assuming that EPA's data are correct and the POTW removes 96% of the phenol, only 2.66 pounds of phenol are discharged to the receiving stream in a year. The cost for removing this minute amount of phenol is extremely high.

The EPA estimated that the capital cost of a treatment system for the Valdosta plant would be \$87,125 (1991 basis). A more realistic capital cost is \$754,000 (1991 basis). Using EPA's methodology and amortizing the capital cost of the treatment system over 10 years this equates to \$113,100 dollars per year. The cost of annual O&M is estimated to be \$93,500. The total capital plus operational cost per year is therefore \$140,343 (EPA 1982 basis). The cost for removal of the phenol from the Union Camp facility is \$140,343 / 2.66 pounds or \$52,760 per pound (EPA 1982 basis). The EPA estimated the cost to be \$38 per pound. This is a wholly unrealistic expense for a waste stream that already receives appropriate treatment by a POTW.

When considering the relative toxicity of phenol, the cost for treatment is even greater. EPA has ranked the toxicity of phenol against other toxic compounds, and found that phenol is only slightly toxic (Cost-Effectiveness Analysis for the Organic Chemicals, Plastics, and Synthetic Fibers Industry. US EPA Economic Analysis Branch, Office of Water Regulations and Standards. Sept. 1987). The toxicity equivalence given to phenol is 0.0022 toxic weight units. When the mass discharge of phenol is multiplied by the toxicity factor to yield a comparable toxicity weight, the "actual" mass of toxic material is $2.66 \times 0.0022 = 0.006$ pounds of toxic material discharged per year. Using this value, the true cost of preventing toxic material from reaching the receiving stream is $\$140,343 / 0.006$ or \$23.4 million dollars per pound! The cost for phenol treatment is extraordinarily high, and is totally unjustifiable in light of the treatment afforded by the POTW.

Congress did not intend for identical and redundant treatment to be required for dischargers to a POTW. See 33 U.S.C. §1317(b)(1). Given the unjustifiably high costs associated with redundant treatment, Union Camp urges EPA to reconsider and give indirect dischargers to a POTW special consideration in the context of the present rulemaking. Like a bad wine that gets no better with age, EPA's misguided refusal to promulgate an environmentally sound regulation will not ripen into good public policy. There is simply no sound environmental reason why Union Camp and many others should be forced to pay exorbitant costs for what amounts to redundant treatment of its effluent.

EPA apparently concedes that even if a particular POTW's removal rate were in excess of 96%, the PSES standards it has proposed would apply. See Chemical Manufac. Assoc. v. EPA, 870 F.2d 177, 245 (5th Cir. 1989). The Agency needs to consider carefully whether achieving the higher removal rates are really worth the obviously onerous costs involved. Clearly the minimal-- if extant -- environmental benefits involved do not justify the costs.

The POTW that receives the Valdosta plant's effluent serves as a good example, since it does more than an adequate job of treating phenol, with no evidence of pass-through. Therefore, a requirement for in-plant treatment would simply -- and exclusively -- benefit the contractors Union Camp will be forced to hire to build the treatment facility.

III. EPA HAS NOT SHOWN THAT THE PROPOSED DISCHARGE LIMITATIONS ARE FEASIBLE OR ACHIEVABLE.

Union Camp disagrees with EPA's assertion that the Fifth Circuit's Chemical Manuf. Assoc. remand "on the issue of costing did not re-open the issue of technical achievability generally." 56 Fed. Reg. at 63,903 (citations omitted). Even a casual

reading of the case discloses a much broader mandate. As the court itself stated, "[t]he EPA has failed . . . to demonstrate a reasonable basis for its conclusion that in-plant treatment can eliminate pollutants as effectively as the end-of-pipe systems . . ." 885 F.2d at 265. Thus, technical achievability is well within the scope of the remand, and must be considered by the Agency in the present proceeding in addition to the issues the Agency itself concedes are to be considered. If EPA fails to address technical achievability issues in its final rule, that rule will be no less arbitrary and capricious than the one remanded by the Fifth Circuit.

The Agency has not demonstrated that biological treatment is capable of meeting the extremely low discharge standards. This is especially true of low flow, high strength wastewaters. EPA did not make this showing in the 1987 rulemaking, and has not done so in this proposal. Issues were raised in the 1987 rulemaking questioning the feasibility and effectiveness of in-plant biological treatment. This issues were: (1) the need for pre-treatment steps including neutralization, oil and suspended solids removal; (2) the need for flow and concentration equalization; and (3) the aeration basin hydraulic retention time (Chemical Manufacturers Association Brief, pgs 51-56).

Union Camp has engaged an engineering consultant to prepare a cost estimate for the construction of a treatment system (Sirrine). This system would attempt to treat the wastewater at the Valdosta, Georgia plant. Sirrine has based this design on a general familiarity with the nature of Valdosta's wastewater gained during a year-long affiliation with Union Camp. During this time, Sirrine conducted sampling, analyses and treatability testing at the site. However, no bench-scale testing of this wastewater was carried out to substantiate that biological treatment can achieve consistent removal of phenol down to the specified limits.

The Valdosta plant's production units are strictly batch operations. Like Synthetic Organic Chemical Manufacturers Association ("SOCMA") members, Union Camp uses this batch plant to produce small quantities of specialized products to meet specific customer demands. Raw materials are introduced on an intermittent basis. Equipment may be idled while waiting for raw materials, for quality control checks, or to undergo cleaning. As a result, the effluent from the Valdosta plant is similar to that of others in its subcategory in that it varies widely in flow, strength and composition, depending on events taking place in the plant. One study of Valdosta plant wastewater showed that the range of monthly average Chemical Oxygen Demand ("COD") concentration varied by a factor of 2.5. Day-to-day variations can be greater.

Biological treatment relies on providing a continuous supply of nourishment to a discrete population of microorganisms. It is well documented in the literature that optimum destruction of toxic constituents occurs with acclimated biomass populations.

Due to the frequently changing nature of this effluent, Union Camp's wastewater engineering consultants have, in the past, advised against on-site biological treatment processes because of the difficulty of maintaining a stable population exclusively for the plant. (These difficulties are not experienced at the POTW where a mixture of diverse wastewater is processed.)

Therefore, Union Camp has serious reservations that even the larger, more expensive plant could achieve the extremely low phenol discharge limits.

IV. THE COMPLEXITY OF THE OCPSF CATEGORY DEMANDS LIBERAL USE OF FUNDAMENTALLY DIFFERENT FACTORS VARIANCES.

In its December 6, 1991 repropose rule, the Agency itself has provided ample support for the liberal grant of fundamentally different factors ("FDF") variances within the OCPSF category. As EPA stated:

-- "[t]he OCPSF industry is large and diverse, and many plants are highly complex . . . production often varies from day to day , or even from hour to hour" 56 Fed. Reg. 63,897, 63,900.

-- "Due to the extraordinary complexity and variety in the OCPSF industry, it would be nearly impossible to analyze each plant's waste stream" Id.

-- "In recognition of the extraordinary complexity of the OCPSF industry and the impracticability of developing a detailed knowledge of the production practices and the factors affecting wastewater treatment at each of the OCPSF plants, EPA based the BAT limitations on certain reasonable, simplifying assumptions and conclusions" Id. at 63,901.

-- "the OCPSF industry is simply too complex for the Agency to approach a perfect plant-specific knowledge of the industry" Id. at 63,902.

These broad statements reflect a sensitivity that, at a minimum, should be re-emphasized in the preamble to the Agency's final rule.

The Agency is likely to be petitioned for a great many FDF variances within the OCPSF category. While as a statutory matter such variances of course will be determined on a case-by-case basis, see 33 U.S.C. §1311(n), the Agency should attempt to define for potential applicants what EPA will be looking for in reviewing applications.

Pursuant to 33 U.S.C. §1311(n)(1)(B), the following summarizes factors which Union Camp believes make its Valdosta plant fundamentally different from EPA's model:

1. Removal cost

The \$23.4 million per pound equivalent (\$52,760 per actual pound) removal cost which Union Camp would incur to remove less than three pounds per year of phenol from the environment is totally out of proportion to the overall \$38 per pound equivalent removal cost derived during development of the categorical standard.

2. Nature or quality of wastewater pollutants contained in raw waste load

Union Camp Valdosta's wastewater contains substantially higher levels of conventional organic pollutants than the plants used in the costed model. The model treatment system assumes a raw waste BOD₅ loading of between 500 and 2,000 ppm while Union Camp's raw waste BOD₅ averages 15,000 ppm.

3. Volume of wastewater discharged

Union Camp discharges a relatively small flow to the POTW, an average of 5,000 gallons per day. This is a far smaller plant than the 250,000 gallons per day average discharger EPA used in the 1987 rulemaking.

4. Energy requirements

Due to the higher strength of Valdosta's wastewater, the power consumed to aerate the Valdosta plant wastewater will be disproportionately higher than that consumed by the EPA model.

5. Land availability

Land availability is an issue which will cost Union Camp additional capital. Union Camp's Valdosta plant does have sufficient land to build a biological treatment facility. This land is not located in the proximity of the current wastewater treatment facilities. The plant is bisected by a rail line and public roadway into two segments:

- the main plant is located on a narrow piece of property approximately 9 acres in size which houses all reactors, a laboratory, warehouse and storage facilities, and the main office.

- an additional 25 acre tract of property located across the railroad tracks and roadway houses off site steam and hot oil utilities.

The former area which houses the original plant is quite congested and close to a roadway. The only unimproved area is a very narrow strip of property sandwiched between the rail lines and a public highway. This area, which currently features a spill containment pond, is quite swampy and would require extensive site preparation. Because of concerns about potential odor, cost of site preparation, and other issues, this area is not appropriate to house the biological treatment area.

The latter area would be a logical site for a water treatment plant but is remote from current water treatment facilities. Several hundred feet of influent and effluent pipe would have to be installed to connect the current wastewater pretreatment facilities to the remote plant and a return line would be required to pipe it back into the city sewer.

As cited above, it will cost an additional \$85,000 for direct piping of the water to and from a location with sufficient land to accommodate the treatment plant. This provision adds substantially to the overall cost of the technology.

6. Cost/Economic Impact

Under the regulation as proposed, \$206,600 (1991 basis) annualized capital and operating cost for removing phenol is so high that the reduction in profitability would severely threaten the economic viability of the Valdosta plant. A closure of this plant would mean the loss of at least eighty jobs within Union Camp and a loss of over 1-million dollars in annual income for businesses in the local community who provide goods and services to the plant.

V. INCORPORATION OF CMA AND SOCMA COMMENTS.

Having reviewed the comments submitted to the Agency by the Chemical Manufacturers Association and the Synthetic Organic Chemicals Manufacturers Association, Union Camp hereby incorporates these comments into its own.

Mr. George M. Jett, Project Officer
Environmental Protection Agency
March 5, 1992
Page 15

Union Camp requests that EPA carefully consider the comments and issues raised here. Failure to amend the proposed OCPSF regulations will have a disastrous and unjustified impact on the industry.

Sincerely,

A handwritten signature in dark ink, appearing to read "DW Marshall". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

D. W. Marshall
Director, Corporate Office of
Environmental Affairs

cc: Mr. P. L. Acton - Wayne
Mr. A. E. Cawrse - Savannah
Mr. J. E. Freeman - Savannah
Mr. W. L. Jones - Wayne
Mr. J. B. Launey - Valdosta
Mr. D. Law - Wayne
Mr. N. E. Lawson - Savannah
Ms. P. A. Nevvincean - Savannah
Ms. A. D. Perry - Wayne
Mr. W. H. Trice - Wayne
Mr. J. C. Whitaker - Washington

March 2, 1992

Ms. Pat Nevrinean
Union Camp Corporation
Chemical Products Division
West Lathrop Avenue
Savannah, GA 31402

Subject: Cost Estimate for Pretreatment Facility
Union Camp, Valdosta, Georgia
SEC Donohue Job No. C-1703

Dear Ms. Nevrinean:

Detailed below is a summary comparison of capital and annual operating and maintenance (O&M) costs developed by the United States Environmental Protection Agency (EPA) and SEC Donohue for an in-plant biological pretreatment system for the treatment of phenols and other priority pollutant organics at the Union Camp facility in Valdosta, Georgia. In the 'Development Document for Effluent Limitations: Guidelines and Standards for the Organic Chemicals, Plastics and Synthetic Fibers Point Source Category' published in October 1987, EPA estimated capital and O&M costs for small (<0.5 MGD) in-plant biological treatment systems. Capital costs in 1982 of \$42,163 and annual O&M costs of \$31,778 were estimated for biological treatment of the Union Camp facility wastewater.

The original regulations, promulgated in November 1987 were challenged by the Chemical Manufacturer's Association (CMA). On October 10, 1989 the Fifth Circuit Court of Appeals remanded two parts of the regulations. The first and more important part consisted of effluent limitations for 19 of the 20 pollutants which were remanded based upon an error in EPA's costing of the biological treatment systems.

EPA subsequently recognized that because of diversity in the OCPSF industry, there is a significant amount of variability in BOD₅ and TSS concentrations in wastewater generated from different OCPSF plants. The capital and O&M costs were therefore revised based on revised biological treatment systems with increased hydraulic detention times as a function of reported or projected raw waste toxic pollutant concentrations. The residence times were selected as a function of the influent phenol concentration. Thus plants with phenol concentrations up to 50 mg/l were designed for a detention time of 84 hours, plants with phenol concentrations up to 300 mg/l were assigned a detention time of 130 hours, and plants with phenol concentrations over 300 mg/l were assigned a detention time of 413 hours. It appears, however, that EPA continued to ignore the impact of influent BOD concentration in selecting the system detention time. As a consequence, facilities with wastewater containing high levels of BOD, and less than 50 mg/l phenol were determined by EPA to require a maximum hydraulic detention time of only 84 hours.

For the Union camp wastewater (design flow = 10,780 gpd, design BOD₅ loading = 1540 lb/day) containing approximately 4.5 mg/l phenol, EPA probably selected a system with a detention time of 84 hours or less in estimating revised biological treatment costs. Accordingly, the revised capital and O&M costs in 1982 dollars were estimated to be \$61,080 and \$32,470, respectively. EPA assumed that a package treatment system would be capable of reducing phenol in the Union Camp wastewater below the proposed effluent guideline of 19 µg/l.

Based on SEC Donohue's prior treatability experience with industrial wastewaters containing non conventional (priority pollutant) organics, it appears that there is a flaw in the above assumption made by EPA. In order to achieve complete removal of xenobiotic compounds such as phenol from an industrial wastewater containing alternate readily degradable materials, it is necessary to establish a bacterial population capable of using phenol as a carbon source. The growth rate of phenol degrading organisms is significantly lower compared with organisms growing on more readily degradable materials such as domestic sewage (*Reference: Biological Wastewater Treatment - Theory and Applications, C.P. Leslie Grady Jr. and Henry C. Lim, Marcel Dekker Inc.*). Consequently, in order to maintain an adequate phenol degrading population, biological systems required to achieve complete removal of phenol are designed at low food to microorganism ratios and long hydraulic detention times.

Based on the above discussion, in order to ensure consistent compliance with the proposed phenol discharge limitation, design of the in-plant biological system for Union Camp's high strength wastewater should also address removal of BOD. The system proposed by EPA, with a hydraulic detention time of 84 hours will achieve only partial removal of BOD. From communications with package plant vendors it was also determined that package extended aeration type activated sludge systems do not possess the necessary volume or aeration capabilities required for treating the high strength Union Camp wastewater. The vendors suggested that some pretreatment or dilution would be required to reduce the BOD loading to the package treatment plant. Therefore, we believe that the system selected by EPA to estimate compliance costs for the Union Camp wastewater is technically incapable of meeting the proposed regulations.

SEC Donohue proposed a conceptual design for an extended aeration activated sludge system capable of adequately treating the Union Camp wastewater to meet the proposed regulations. The design was based on a food to microorganism (F/M) ratio of 0.1 lb BOD/day-lb MLVSS. For extended aeration systems, EPA (in Process Control Manual for Biological Wastewater Treatment Facilities) typically recommends a design F/M between 0.05 to 0.1 lb BOD/day-lb MLVSS. SEC Donohue used this F/M value to size the aeration basin, to estimate total air requirements, and to estimate sludge production rates.

Based on the above design F/M ratio, a system with an effective hydraulic detention time of 410 hours was selected. Presented in Table I is a comparison of capital and annual O&M costs estimated by SEC Donohue, and those proposed by EPA for the Union Camp facility.

TABLE I
 COMPARISON OF CAPITAL AND ANNUAL O&M COSTS
 IN-PLANT BIOLOGICAL PRETREATMENT SYSTEM
 UNION CAMP, VALDOSTA, GEORGIA
 SEC DONOHUE JOB NO. C-1703

ITEM	SEC Donohue Cost	EPA Cost for UCC Wastewater
CAPITAL COSTS		
Direct Costs for Activated Sludge System Exclusion Piping	343,000	77,800
Direct Costs for Sludge Handling System Exclusion Piping	200,000	9,325
Direct Piping Cost ¹	85,000	-
Total Direct Costs	628,000	87,125
Contingencies and Engineering @ 20%	126,000	0
TOTAL CAPITAL COSTS	754,000	87,125
ANNUAL O&M COSTS		
Activated Sludge System	65,500	44,332
Sludge Handling System	28,000	2,008
TOTAL ANNUAL O&M COSTS	93,500	46,340

All costs are presented in 1991 dollars. EPA costs, originally presented in 1982 dollars were updated using ENR construction cost indices of 3428 for June, 1982 and 4892 for October, 1991.

¹ Due to space constraints, the biological treatment facility would have to be located remote from the plant area. Consequently, piping costs are expected to be fairly significant. These site specific piping costs were not considered in EPA's cost estimate.

Significant differences are evident in the cost estimates developed by SEC Donohue and EPA. The following explanations are proposed for these differences:

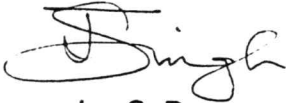
- EPA selected an "off-the-shelf" package plant system for the Union Camp application.
- While such a "package plant" system offers potential capital cost savings due to its pre-engineered design, it is not technically feasible for the high strength Union Camp wastewater. This was confirmed by telephone communications with package plant vendors.
- EPA did not address site specific costs such as civil/structural work and piping for wastewater treatment facilities located remote from the process facility.
- EPA significantly underestimated sludge generation and handling requirements, and costs. At an average influent loading of 1500 lb BOD/day it is estimated that at least 125 lb/day of sludge would be produced. The sludge handling cost of \$9,325 (1991 dollars) estimated by EPA is inadequate. SEC Donohue estimated sludge handling associated capital costs of \$225,000. The basis for EPA's sludge handling cost estimate is not well defined.
- Annual O&M costs for the EPA systems were lower compared with the SEC Donohue estimate. This is primarily because a typical skid mounted package system may require less maintenance compared with a system comprised of individually designed units. Furthermore, EPA did not include sludge handling and disposal costs. It appears from the Development Document that EPA assumed systems with a flow less than 0.5 MGD will not generate significant quantities of sludge. As stated above, due to the high strength of the Union Camp wastewater, significant quantities of sludge will in fact be produced.
- SEC Donohue has also included chemical costs (acid, alkali, and lime for sludge conditioning) that were probably not factored into EPA's estimated O&M costs.
- Since EPA used a package plant design to develop O&M costs, the labor rates used by EPA were probably lower since package plants typically require a less skilled operator.

In summary, EPA significantly underestimated capital and annual O&M costs for in-plant biological pretreatment of the Union Camp wastewater. EPA based their cost estimate on a pre-engineered package plant system that is technically incapable of meeting the proposed pretreatment standard of 19 µg/l for phenol. The actual capital and annual O&M costs for an engineered in-plant biological pretreatment system capable of meeting the proposed OCPSPF regulations are likely to be approximately \$754,000 and \$93,500 in 1991 dollars.

March 2, 1992
Cost Estimate For Pretreatment Facility
Page 5

Please call me at (803) 234-3079 or David Welch at (803) 234-3021 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Singh" with a stylized flourish.

Jas S. Dang
Project Engineer

cc: Mr. David Welch
Mr. Ted Clark
Project File



Frederic M. Posea
President
Engineered Materials Sector

Allied-Signal Inc.
P.O. Box 1087
Morristown, NJ 07962-1087
Telephone (201) 455-3500

February 20, 1992

The President
The White House
1600 Pennsylvania Ave., NW
Washington, DC 20500

Dear Mr. President,

I am writing to you because the U.S. Environmental Protection Agency has proposed to issue a regulation for treatment of phenol by manufacturing facilities discharging to municipal sewage treatment plants. If promulgated, the regulation would cost many American companies hundreds of millions of dollars but would result in no environmental benefit.

This proposed regulation would force Allied-Signal Inc.'s facilities in Philadelphia, Pennsylvania and Hopewell, Virginia (as well as, by EPA estimates, 243 other facilities) to spend millions of dollars on useless treatment -- since adequate treatment of these waste streams is already taking place at the city sewage treatment plants.

The major concerns with this regulation are:

- The enormous costs of the regulation clearly outweigh the benefit to society, since the duplicative treatment required by the regulation would result in no net environmental benefit -- society's dollars can be best spent on real pollution problems.
- EPA's decision to impose this expensive regulation in light of the absence of any environmental benefit undermines society's confidence in the regulatory approach to pollution control.
- The regulation invites litigation because it requires large expenditures for bureaucratic reasons rather than to control pollution, therefore making it difficult for any corporate manager to understand why this money should be spent and making litigation an attractive course.

BUSH LIBRARY PHOTOCOPY - PRESERVATION

Background:

On December 6, 1991, EPA proposed Clean Water Act pretreatment standards for phenol and 12 other pollutants for the Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF) industrial category. 56 Fed. Reg. 63897. These standards would govern the discharge of these 13 pollutants by industrial facilities into city sewage treatment plants called publicly owned treatment works (POTWs). The deadline for submission of comments to EPA is March 6, 1992 and Allied-Signal -- as well as many others -- will be submitting lengthy and detailed comments.

EPA was ordered by a court to reconsider these standards (which were part of a larger 1987 regulation now in effect). The court said EPA failed to show that its model technology was economically achievable. The proposed regulation clings to the same extremely stringent standards, changes the model technology and then argues that the regulation is economic by folding it back into the larger 1987 regulation.

- The Costs of the Proposed Standards are Out of Line With the Benefits:

The pollutant removals that would be achieved by the proposal are only a small fraction of the total pounds of pollutants that would be removed by the OCPSF standards as a whole, while the costs of installing treatment are enormous. The 1987 OCPSF pretreatment standards remove over 5 million "pound-equivalents" of toxic pollutants and cost approximately \$195 million. The proposed standards remove only 37,000 additional pound-equivalents and cost more than \$295 million. In other words, even accepting EPA's own data as accurate, the repropoed standards would result in the removal of only 0.7% of the OCPSF pollutants but would impose over 60% of the costs of the OCPSF regulation.

- EPA's Cost Estimates are Actually Understated:

Moreover, we believe that EPA's data are not accurate. EPA has grossly underestimated the costs of complying with the proposed standards, through the misapplication of its costing methodology as well as numerous other errors. In the case of the two Allied-Signal facilities, EPA's estimate of the costs to comply is about 3 percent of the costs estimated by Allied-Signal and its engineering consultants. EPA's total underestimation of the costs of compliance for the 243 other affected facilities may be in the hundreds of millions of dollars.

- The Cost of the Proposed Phenol Standard is Outrageous:

Using EPA's data, the proposed regulation will cost \$2,000 to remove each one pound-equivalent of the 13 pollutants from the waters of the U.S.; for phenol and 3 other pollutants, it will cost \$27,000 per pound-equivalent. By comparison, the 1987 OCPSF regulation costs \$40 and the most "expensive" pretreatment standard reference by EPA costs \$155.

The President

Page Three

- The Proposed Phenol Standard Will Produce No Environmental Benefits:

This enormous cost for minimal pollutant removal is even more outrageous since there will be no net environmental benefit from the proposed phenol standards. EPA data show that phenol is treated just as effectively by well-operated POTWs as it is by well-operated industrial plants. (This is not surprising since the treatment systems are the same, i.e. biological treatment.) Not only that, but EPA has acknowledged that phenol rapidly degrades in sludge -- so there would be no sludge problem resulting if all treatment took place at the POTW. Any treatment of phenol imposed on plants that discharge into a POTW would be entirely redundant; it would result in virtually no reduction in the amount of phenol that enters the waters of the U.S.

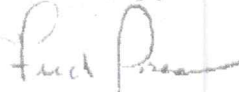
Summary

The reproposed pretreatment regulations for 13 pollutants would be more than 10 times more costly (on a pound-equivalent basis) than any other pretreatment standard cited by EPA. For phenol and 3 other pollutants, the regulation would be more than 150 times more costly. Clearly this regulation should be reviewed.

For phenol, moreover, there is no justification for regulation, even if the costs were reasonable. Phenol is removed by sewage treatment plants as effectively as it would be by the pretreatment facilities that would be required by the proposed standard -- there is no "pass through" of phenol and thus no justification for regulation. Surely, this regulation of phenol cannot be allowed to go forward.

We believe that this is regulation at its worst. We ask you to take a close look at this situation and to do what you can to protect American industry, American workers, and American consumers from this useless regulation. We would be pleased to meet with you at your convenience to discuss this further or provide supporting data.

Sincerely,



F. M. Poses

FMP15

BUSH LIBRARY PHOTOCOPY - PRESERVATION

5/29

Cardolite Corporation



500 Doremus Avenue
Newark, New Jersey 07105
201/344-5015
Telex: 325446
Fax: 201/344-1197

May 26, 1992.

The Honorable George Bush
The White House
1600 Pennsylvania Ave.
Washington, DC 20250

Dear Mr. President:

We are writing you in support of efforts by Allied-Signal and several other Companies to seek your Administration's review of proposed EPA regulations affecting discharges from 243 facilities to publicly owned treatment works (POTW). If promulgated the Organic Chemicals, Plastics, and Synthetic Fibers pretreatment regulations would require of us installation of prohibitively costly technology to pretreat pollutants already being treated to nearly undetectable levels by POTW's. We are a small chemical company located in the inner city and are already struggling to maintain our existence. We believe this is regulation for regulation sake and should not be allowed.

American industry needs to be making investments to modernize our facilities, increase our productivity, and to provide real environmental benefits to society. This proposed regulation does not fit in any categories. We respectfully urge you to use your authority to protect American industry, workers, and consumers from this useless and extremely costly regulation.

Sincerely,

A.M. Stonis
President
Cardolite Corporation

phenol

Page 3
President George Bush
May 20, 1992

cc: Mr. Dan Quayle
Old Executive Office Building
17th Street & Pennsylvania Ave., NW
Washington, DC 20500

Mr. Richard Porter
Counsel to the Vice President
Old Executive Office Building
17th Street & Pennsylvania Ave., NW
Washington, DC 20500

Ms. Cecile Kremer
Office of Public Liaison
The White House
1600 Pennsylvania Ave., NW
Washington, DC 20500

Ms. Teresa A. Gorman
Special Assistant to the President
for Policy Development
The White House
1600 Pennsylvania Ave., NW
Washington, DC 20500

Mr. David B. Rivkin
Associate Executive Director,
Council on Competitiveness
Office of the Vice President
Old Executive Office Building
17th Street & Pennsylvania Ave., NW
Washington, DC 20500

Mr. David B. Struhs
Chief of Staff
Council on Environmental Quality
722 Jackson Place, NW
Washington, DC 20503



Scotty B. Patrick
Administrative Vice President
Technical
(614) 889-3628

Ashland Chemical, Inc.
Subsidiary of
Ashland Oil, Inc.

Address Reply:
P.O. Box 2219
Columbus, Ohio 43216

May 20, 1992

President George Bush
The White House
1600 Pennsylvania Avenue, N.W.
Washington, DC 20500

Dear Mr. President:

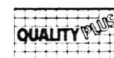
Ashland Chemical Incorporated ("Ashland") is a leading manufacturer of specialty and commodity chemicals offering products to a wide range of industrial segments both domestically and internationally. Ashland owns and operates fifteen domestic manufacturing locations, eight of which are affected by 40 CFR 414, Effluent Guidelines for the Organic, Chemical, Plastics and Synthetic Fibers Industries. I am writing to you to support our colleagues at Allied Signal and similarly impacted industries, and to express Ashland's own concerns about a recently proposed amendment to these effluent standards.

This proposed regulation would establish an extremely stringent pretreatment level for indirect discharge of phenol into municipal sewage treatment plants. The regulation would require Ashland and other OCPSF industries to spend millions of dollars on useless and unnecessary pretreatment equipment even though the municipal sewage treatment plant(s) to which we already discharge effectively treats phenol.

While we cannot speak directly for the other 250 facilities which will be impacted by this onerous proposal, our own experiences from our Calumet City, Illinois, facility have shown that the **existing** OCPSF standards and the hefty cost of compliance played a major role in the loss of two major product lines and fourteen jobs (15% of the staff) in 1992 alone. Approximately 30 million in revenue and \$750,000 in salaries and benefits will be lost this year alone as a direct result. These product lines are now being manufactured at a Canadian location. Placing another unwarranted compliance burden on this facility, and others similarly situated will further reduce industry's stability and profitability.

Headquarters
5200 Blazer Parkway
Dublin, Ohio 43017

Cable Address: Aroplaz OH
Telex: 245385
Answerback: ASHCHEM
Fax: (614) 889-3823

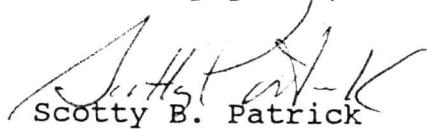


Ashland Chemical's
Commitment to
Quality and Productivity

Page 2
President George Bush
May 20, 1992

I personally ask that you and your staff closely review this situation and address this important issue for the OCPSF industries.

Sincerely yours,



Scotty B. Patrick

GWH/tll

Phenol

Document Originally
Attached to
Following Page



23860

6/3

The City of Hopewell, Virginia

300 N. Main Street • Clinton H. Strong • City Manager • (804) 541-2243

May 29, 1992

LaJuana S. Wilcher
Assistant Administrator (WH 556)
Office of Water
U.S. Environmental Protection Agency
402 M Street, S.W.
Washington, D.C. 20460

Re: Pretreatment Standards for Existing Sources for Phenol, 40 CFR Part 414, Organic Chemicals, Plastics and Synthetic Fibers Category, 56 **Federal Register** 63897 (December 6, 1991).

Dear Ms. Wilcher:

I am writing to you on behalf of the Hopewell Regional Wastewater Treatment Facility Commission in Hopewell, Virginia to address a problem we have in common with other POTW's concerning the regulation referenced above. The proposed regulation contains effluent limitations for phenol applicable to industrial users discharging wastewaters to publicly owned treatment works (POTWs). This regulation would provide no environmental benefit. Moreover, if the affected industries in Hopewell are required to meet these proposed limits, we foresee severe economical impacts on the community and the treatment plant. The purpose of this letter is to explain these impacts.

The Hopewell Regional Wastewater Treatment Facility (HRWTF) was formed under the Hopewell Regional Wastewater Treatment Facility Agreement on July 1, 1975. This agreement was executed by the City of Hopewell, Continental Can Company, Inc. (now operating as Stone Container Corporation), Hercules Incorporated (now operating as Aqualon Corporation), Allied Chemical Corporation, The Firestone Tire and Rubber Company and the Virginia-American Water Company. The purpose of this agreement was to construct and operate a regional wastewater treatment system to serve the industrial/residential community and to be funded by the industries shown above, the Environmental Protection Agency and the Virginia State Water Control Board. Each industrial participant in the agreement is deemed to have a property right in its share of treatment capacity allocated to it conditioned upon compliance with the obligations it accepted under the agreement.

Each participant pays its share of the actual operating costs for the HRWTF. The Environmental Protection Agency and the Virginia State Water Control Board approved the regional concept and the design for the HRWTF when submitted (circa 1974). This regional design was predicated on the need to provide effective industrial and municipal wastewater treatment at a common facility. Input was received from industry, the City of Hopewell, the Environmental Protection Agency and the Virginia State Water Control Board during the design. The design took into account the high-strength wastewaters discharged by industrial users. The wastewater treatment plant was designed to provide comprehensive, professional

and competent wastewater treatment services to the industrial users and the community. Current operation of the plant demonstrates the capability to successfully treat these complex wastewaters to comply with the facility NPDES permit and water quality standards.

Thereafter, a 50 mgd wastewater treatment plant was constructed to serve a population of 20,000 residential users, commercial users and the five (5) major industrial users upon which the area is dependent for jobs and economic well-being. The pretreatment regulations were not considered by EPA or the Virginia SWCB during the design of HRWTF. However, since HRWTF carries the label of POTW, the pretreatment regulations were applicable upon promulgation. Applicability of the phenol standard in the proposed OCPSF regulation is the cause of my need to write you this letter.

As you can see from recent data for this facility, phenol concentrations are quite low and in compliance with applicable Virginia State Water Control Board water quality standards¹:

<u>Inclusive Dates:</u>	<u>Regional Plant In- fluent.</u>	<u>Regional Plant Ef- fluent.</u>	<u>Virginia Water Quality Standards².</u>	
			<u>Public Water Supplies:</u>	<u>All Other Surface Waters:</u>
3/5/91	<5.0	<5.0	21,000	4,600,00
4/24/91	5.0	5.0		
6/24/91	13.0	<5.0		
11/20/91	130.0	<5.0		
2/11/92	<5.0	<5.0		

These concentrations do not cause interference or pass through at the treatment works. In fact, phenol is a supply of organic carbon for the biological treatment system. This contribution to biochemical oxygen demand (BOD) is needed for the treatment works to function properly. In addition, this facility successfully operates a multiple hearth incinerator for the destruction of organic sludge generated in the process. We are confident that phenol is currently treated and/or destroyed in the HRWTF treatment works in as efficient a manner as possible. If the industrial users were to pretreat wastewaters for phenol at the industrial site (and accomplish incidental BOD removal), another source of biological pretreatment sludge would be generated for disposal in the already over-burdened land disposal option.

At very high concentrations, phenol can interfere and pass through a treatment works. However, this has never been documented at this facility. In addition, the City's approved pretreatment program is being professionally and competently operated to prevent such interference and pass through from occurring.

If those facilities currently discharging phenol to HRWTF must meet the proposed pretreatment standards, they will have to install expensive biological treatment facilities, as contemplated by the proposed rule. Such biological treatment will be redundant of the biological treatment provided by HRWTF. Such redundant treatment will economically impact not only the OCPSF facilities but all other industrial, commercial and residential users of the treatment works. This will take place through a shift in rates and billable loadings to compensate for the cost of operating the treatment works. When a treatment facility is under utilized (as could be the

¹ All results in micrograms per liter.

² Human Health Standards.

case when incidental BOD pretreatment takes place during biological treatment for phenol), the fixed costs of people required to maintain a 50 mgd facility and the power to either run equipment or keep it on stand-by do not decrease proportionally. Someone has to pay the cost. If the OCPSF industries reduce their allocation, all other users, including the 20,000 residential users in Hopewell plus Fort Lee, Prince George County, bear the burden of absorbing that cost of the 7.3 million dollar annual operation and maintenance budget. Either the costs are maintained or the effectiveness of the 45 million dollar investment made by the federal government and others is minimized and no environmental benefit will be achieved.

I ask that you carefully consider this perspective on the proposed regulations and their impact on this area of Virginia.

Sincerely,

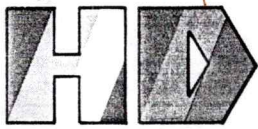
A handwritten signature in black ink, appearing to read "Clinton H. Strong". The signature is fluid and cursive, with the first name "Clinton" being more prominent and the last name "Strong" following in a similar style.

Clinton H. Strong
City Manager

cc: Sen. John Warner
Sen. Charles Robb
Rep. Norman Sisisky

Phenol

Document Originally
Attached to
Following Page



HILTON DAVIS CO.

2235 Langdon Farm Road
Cincinnati, Ohio 45237

6/8
Telephone: 513-841-4000

May 29, 1992

The Honorable George Bush
The White House
1600 Pennsylvania Ave., NW
Washington, DC 20500

Dear Mr. President,

I am writing to you because the U.S. Environmental Protection Agency has proposed to issue a regulation for treatment of phenol by manufacturing facilities discharging to municipal sewage treatment plants. If promulgated, the regulation would cost many American companies hundreds of millions of dollars but would result in no environmental benefit.

Please be aware that commercial, over-the-counter drugs, such as Chloraseptic, contain 13,700,000 ppb (parts per billion) [yes, 14 million parts per billion!] of phenol which consumers, self-directed, administer to themselves. Yet these proposed regulations would limit us to 19 ppb. This doesn't make sense. Phenol is a disinfectant, one of the oldest known to science. It can only help sewer systems; not hurt.

Let's restore common sense to our legislation and rules. Yes, chemical discharges to our waterways must be reduced and managed. But knee jerk response to these so called "environmental Henny Penny terrorists" has got to stop.

We are a small company which has spent over \$13.1 million in the last four years to improve our wastewater systems. We use phenol to produce salicylic acid (used to make aspirin among other products). There are only 3 producers left in the USA. If we have to spend additional millions of dollars to stay in this business, we will strongly consider exiting it. That will leave two producers; eventually one and then none. Can America continue to afford this? Given that this wastewater is eventually treated at a POTW and then discharged.

This proposed regulation would force Hilton Davis Co.'s facility in Cincinnati, Ohio (as well as, by EPA estimates, 243 other facilities) to spend millions of dollars on needless treatment -- since adequate treatment of these waste streams is already taking place at the city sewage treatment plants.

The major concerns with this regulation are:

- * The enormous costs of the regulation clearly outweigh the benefit to society, since the duplicative treatment required by the regulation would result in no net environmental benefit - society's dollars can be best spent on real pollution problems.
- * EPA's decision to impose this expensive regulation in light of the absence of any environmental benefit undermines society's confidence in the regulatory approach to pollution control.
- * The regulation invites litigation because it requires large expenditures for bureaucratic reasons rather than to control pollution, therefore making it difficult for any corporate manager to understand why this money should be spent and making litigation an attractive course.

Background:

On December 6, 1991, EPA proposed Clean Water Act pretreatment standards for phenol and 12 other pollutants for the Organic Chemicals, Plastics, and Synthetic Fibers (OPCPSF) industrial category; 56 Fed. Reg. 63897. These standards would govern the discharge of these 13 pollutants by industrial facilities into city sewage treatment plants called publicly owned treatment works (POTWs). The deadline for submission of comments to EPA was March 6, 1992 and Hilton Davis Co., as well as many others, submitted lengthy and detailed comments.

EPA was ordered by a court to reconsider these standards (which were part of a larger 1987 regulation now in effect). The court said EPA failed to show that its model technology was economically achievable. The proposed regulation clings to the same extremely stringent standards, changes the model technology and then argues that the regulation is economic by folding it back into the larger 1987 regulation.

- * The Costs of the Proposed Standards are Out of Line With the Benefits:

The pollutant removals that would be achieved by the proposal are only a small fraction of the total pounds of pollutants that would be removed by the OCPSF standards as a whole, while the costs of installing treatment are enormous. The 1987 OCPSF pretreatment standards remove over 5 million "pound-equivalents" of toxic pollutants and cost approximately \$195 million. The proposed standards

remove only 37,000 additional pound-equivalents and cost more than \$295 million.

In other words, even accepting EPA's own data as accurate, the repropoed standards would result in the removal of only 0.7% of the OCPSF pollutants but would impose over 60% of the costs of the OCPSF regulation.

* The Cost of the Proposed Phenol Standard is Outrageous:

Using EPA's data, the proposed regulation will cost \$2,000 to remove each one pound-equivalent of the 13 pollutants from the waters of the U.S.; for phenol and 3 other pollutants, it will cost \$27,000 per pound-equivalent. By comparison, the 1987 OCPSF regulation costs \$40 and the most "expensive" pretreatment standard reference by EPA costs \$155.

* The Proposed Phenol Standard Will Produce No Environmental Benefits:

This enormous cost for minimal pollutant removal is even more outrageous since there will be no net environmental benefit from the proposed phenol standards. EPA data show that phenol is treated just as effectively by well-operated POTWs as it is by well-operated industrial plants. (This is not surprising since the treatment systems are the same, i.e. biological treatment.) Not only that, but EPA has acknowledged that phenol rapidly degrades in sludge, so there would be no sludge problem resulting if all treatment took place at the POTW. Any treatment of phenol imposed on plants that discharge into a POTW would be entirely redundant; it would result in virtually no reduction in the amount of phenol that enters the waters of the U.S.

Summary

The repropoed pretreatment regulations for 13 pollutants would be more than 10 times more costly (on a pound-equivalent basis) than any other pretreatment standard cited by EPA. For phenol and 3 other pollutants, the regulation would be more than 150 times more costly. Clearly this regulation should be reviewed.

For phenol, moreover, there is no justification for regulation, even if the costs were reasonable. Phenol is removed by sewage treatment plants as effectively as it would be by the pretreatment facilities that would be required by the proposed standard. There is no "pass through" of phenol and

thus no justification for regulation. Surely, this regulation of phenol cannot be allowed to go forward.

We believe that this is regulation at its worst. We ask you to take a close look at this situation and to do what you can to protect American industry, American workers, and American consumers from this useless regulation. We would be pleased to meet with you at your convenience to discuss this further or provide supporting data.

Sincerely,



Robert F. Prast
Vice President/
General Manager

cc: Richard Porter
Counsel to the Vice President

Cecile Kremer
Office of Public Liaison

Teresa A. Gorman
Special Assistant to the President
for Policy Development

David B. Rivkin
Associate Executive Director,
Council on Competitiveness

David B. Struhs
Chief of Staff
Council on Environmental Quality

r9263

6/8



M. R. BRANNEN
PRESIDENT

June 4, 1992

The Honorable George Bush
The White House
1600 Pennsylvania Avenue, N.W.
Washington, DC 20500

Dear Mr. President:

Our supplier of phenol, Allied Signal Inc., has advised this small, family-owned company that the Environmental Protection Agency (EPA) is planning to issue a regulation requiring manufacturers who discharge wastewater containing phenol to municipal sewage treatment plants (POTW's) to install their own treatment facilities.

This regulation, if enacted, would require our small company to spend \$2.5 to \$3.0 million to construct these facilities, and approximately \$500 thousand per year to operate them. The capital expenditures to comply with this edict represent 10% of our annual sales. After spending these monies, there will be no improvement in the environment, because the POTW's in the Niagara Falls, NY area have excess capacity to meet the phenol discharge standards proposed by the EPA without dilution. Revenues provided to these POTW's for treating wastewater discharged by our company exceed \$500 thousand per year.

There are 243 manufacturers in the United States confronted with this problem, and I suspect we are one of the smallest. If all of these companies were required to invest \$3 million to construct facilities, over \$700 million would be spent. If you assume all the manufacturers averaged paying \$500 thousand per year for wastewater treatment in the existing POTW's, the income to these plants would be reduced by \$120 million per year. This loss-of-revenue burden would be absorbed by residents of the respective communities, while the manufacturers' operating costs would remain essentially the same. There would be absolutely no benefit to our society from the expenditures required by the proposed regulation! This is just a hidden tax!

We know what a treatment facility for our company would cost, because our business was threatened in 1989 by the EPA's pretreatment regulations. This is disclosed in the attached letter by our attorney. At that time, we contracted with Malcolm Pirnie Inc., Environmental Engineer, Scientist &

Planner of White Plains, NY to examine our wastewater streams and provide an engineering estimate of construction costs for the necessary facilities to meet the pretreatment regulations.

Just a few statistics about sales of our company:

Exports: 25% of total
Reduce Imports: 10% of products we supply to U.S. markets
Growth: 20% in 1991
Year-to-Date: 18% above last year
Per Employee: \$382 thousand in 1992 to date annualized

When we started in business, sales per employee were \$152 thousand per year. Our employment increased 5% in 1991 and 5% already in 1992, with further growth anticipated.

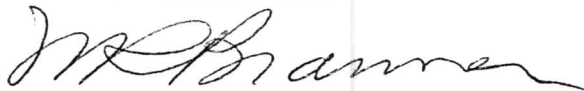
I have attached a copy of a label from Chloraseptic mouthwash which instructs children to spray their mouth and swallow that great toxic chemical which is threatening mankind, phenol. I and my grandchildren use this mouthwash regularly. I can just see some regulator taking this product off of the market.

I request that you listen to people who run a business everyday and live in the community where they create jobs providing our citizens a good life. Even George McGovern understands our problems; maybe he would be a good consultant. I have enclosed a copy of his remarks from the Wall Street Journal.

In the final analysis, the never ending series of regulations has created hostility between government and industry, and has led and will continue to lead to a decline in our standard of living. This would not happen in Japan. Further degradation in the United States because of "no-benefit-to-society" regulations cannot be allowed to continue. Your swift and decisive action to squelch this unwarranted regulation is encouraged.

Very truly yours,

NIACET CORPORATION



Michael R. Brannen
President

MRB/jld

enc.

cc: Distribution

Distribution: Ms. Teresa A. Gorman
Special Assistant to the President
for Policy Development
The White House
1600 Pennsylvania Avenue, N.W.
Washington, DC 20500

Mr. Cecile Kremer
Office of Public Liaison
The White House
1600 Pennsylvania Avenue, N.W.
Washington, DC 20500

Congressman John J. LaFalce
House of Representatives
2419 Rayburn Office Building
Washington, DC 20515

Mr. Richard Porter
Counsel to the Vice President
Old Executive Office Building
17th Street & Pennsylvania Avenue, N.W.
Washington, DC 20500

Mr. David B. Rivkin
Associate Executive Director,
Council on Competitiveness
Office of the Vice President
Old Executive Office Building
17th Street & Pennsylvania Avenue, N.W.
Washington, DC 20500

Mr. David B. Struhs
Chief of Staff
Council on Environmental Quality
722 Jackson Place, N.W.
Washington, DC 20503

HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR

ATTORNEYS AT LAW

1401 NEW YORK AVE., N.W., SUITE 1201
WASHINGTON, DC 20005-2102
202-347-9898
FAX: 202-737-1529

1800 ONE M & T PLAZA
BUFFALO, NY 14203-2391
716-856-4000

FAX: ONE M & T PLAZA 716-849-0349
FAX: GUARANTY BLDG. 716-852-5185

2000 GLADES ROAD, SUITE 400
BOCA RATON, FL 33431-7386
407-394-0500
FAX: 305-427-4303

RICK W. KENNEDY
PARTNER

January 16, 1990

Douglas Blazey, Esq.
Director of the Office of Regional Counsel
USEPA Region 2
26 Federal Plaza
New York, New York 10278

Dear Mr. Blazey:

Re: Niacet Corporation

This is a request for guidance in applying the Environmental Protection Agency's ("EPA") hazardous waste regulations.

We represent Niacet Corporation ("Niacet"). Niacet produces sodium phenoxy acetate. Sodium phenoxy acetate is fed by various pharmaceutical firms into fermenters with soybean oil meal to manufacture Penicillin V, which is further reacted to generate six amino penicillin acid. This acid is then reacted with intermediate chemicals to produce semi-synthetic penicillins. Niacet is the only domestic producer of sodium phenoxy acetate; the only other producer is Chemie Linz which is owned by the Austrian government.

Niacet's sodium phenoxy acetate production generates a wastewater stream which contains sodium phenolate in solution. When analyzed by EPA test procedures, the suspended sodium phenolate is identified as phenol. This wastewater is transported by tanker trucks to the Niagara County Wastewater Treatment Plant ("POTW"). There it is pretreated under contract prior to being treated with general sewage to the POTW and discharged in full compliance with the Clean Water Act ("CWA") (33 USC §1251 et seq.) and the POTW's State Pollutant Discharge Elimination System ("SPDES") permit.

Truck transport provides for appropriate segregation of the wastewater for pretreatment. Moreover, delivery by pipeline is not economically feasible. Truck transport has been practiced for over seven years. During that period, a total of 1,198 tanker trucks, each containing 5,000 gallons of wastewater, has been transported without incident. The wastewater in each truckload is analyzed by EPA test procedures. The measured phenol concentration equivalent to contained sodium phenolate has averaged 6,925 mg/l. In addition to the sodium phenolate, the wastewater contains approximately 10 percent sodium chloride. This high sodium chloride concentration makes

Douglas Blazey, Esq.
January 16, 1990
Page 2

in-plant treatment impossible, because there is no economically viable technology currently available.

Using dilution with effluent meeting SPDES permit discharge conditions and biological treatment, the POTW has been satisfactorily pretreating and treating the wastewater stream. The contract arrangement economically benefits Niagara County residents by providing substantial revenue to the POTW while solving a wastewater disposal problem for Niacet.

With proposed changes in the hazardous waste characterization rules under the Resource Conservation and Recovery Act (as amended) ("RCRA") (42 U.S.C.A. §6901 et seq.) and the fact that direct pipeline transfer is not employed, it is unclear whether the wastewater stream will be regulated under CWA, RCRA, or both. Under prevailing circumstances, the only way that the wastewater stream could be subject to RCRA jurisdiction is through application of the revised toxicity characteristic leaching procedure ("TCLP") published in 51 FR 21648.

Our fundamental questions are: (1) whether the revised toxicity characteristic leaching procedure ("TCLP") published in 51 FR 21648 is applicable to Niacet's wastewater stream; and (2) if it is applicable, whether the wastewater stream is excluded from regulation under the Resource Conservation and Recovery Act (as amended) ("RCRA") 42 U.S.C.A. §6901 et seq.

Niacet contends that: (1) the TCLP is not applicable to Niacet's wastewater stream because it is intended to determine the capacity of a waste solid to leach significant concentrations of specific toxic substances when landfilled; and (2) the treatment and disposal of Niacet's wastewater is comprehensively regulated by the CWA and associated state authority.

1. Extraction Procedure Toxicity Characteristic Rule

RCRA regulates the generation, storage, treatment and disposal of solid and hazardous waste. A solid waste is subject to RCRA regulation if it is or contains a substance listed as hazardous or exhibits a defined hazardous characteristic. One of the defined hazardous characteristics is the Extraction Procedure Toxicity Characteristic ("EPTC") (40 C.F.R. 261.24). EPTC identifies those wastes which are hazardous because of their potential to leach significant concentrations of specific toxic substances.

Douglas Blazey, Esq.
January 16, 1990
Page 3

The EPA issued a Notice of Proposed Rule Making ("NPRM") on June 13, 1986 (51 FR 21648) intended to amend the EPTC provision. Specifically, that NPRM expands the number of toxic compounds covered by the EPTC rule, applies new dilution/attenuation factors in calculating regulatory levels and introduces a second generation leaching procedure, i.e., TCLP.

The June 13, 1986, NPRM includes phenol as a toxic compound covered by the EPTC rule. The regulatory level for phenol under the NPRM is 14.4 mg/l, i.e., a waste is hazardous if, using the TCLP, the extract from a representative sample of the waste contains phenol at a concentration equal to or greater than 14.4 mg/l.

The Preamble to the NPRM states that the process of identifying wastes as hazardous by reason of a characteristic is a "generic process whereby EPA identifies properties that may be possessed by a waste which would cause the waste, if improperly managed, to cause harm to human health or the environment" (emphasis in original) (51 FR 21648). The Preamble also states that the EPTC "entails use of a leaching test, the EP, [to] determin[e] if an unacceptably high level of groundwater contamination might result from improper waste management" (51 FR 21649). The TCLP is a second generation leaching procedure "developed to address the mobility of both organic and inorganic compounds and to solve operational problems of the EP protocol" (51 FR 21649). The EPA has "proposed to employ the TCLP to eliminate the leaching hazard posed by waste placed in Subtitle C facilities" (51 FR 21649) (emphasis added).

The Preamble to the NPRM further states in Section III, Development of the Leaching Procedure, that the EP was designed to simulate the leaching that would result when a solid waste is co-disposed with municipal wastes in a sanitary landfill. . . the impetus behind the development of the TCLP was the need also to address the leaching of organic compounds (Ref. 26) (51 FR 21653). "The specific environment modeled by both the current EP and the TCLP is co-disposal of industrial waste with refuse in a sanitary landfill. The EPA's concern was that potentially hazardous waste, if not brought under the control of the RCRA hazardous waste system, might be sent to sanitary landfills, with a resulting high level of leaching activity" (51 FR 21653).

It is clear that the TCLP is intended to quantify the propensity of a waste solid to leach toxic constituents and thereby identify wastes which pose a hazard when landfilled. Niacet's wastewater is not a solid; the sodium phenolate

Douglas Blazey, Esq.
January 16, 1990
Page 4

(identified by EPA test as phenol) is already in liquid solution. More importantly, it is not landfilled. It is effectively treated at the POTW in full compliance with the CWA and discharged within the limits of the POTW's SPDES permit. It does not conceptually make sense to apply TCLP to the wastewater stream, because the subject toxin (phenol) is already in liquid solution and the method of treatment and disposal precludes any possibility of the phenol "leaching" into groundwater. Therefore, the TCLP should not apply to the wastewater stream because the essential purpose of the rule will not be served if it is applied.

2. RCRA Exclusion

The treatment and disposal of Niacet's wastewater is regulated comprehensively by the CWA and associated state authority.

RCRA regulates the generation, treatment, storage and disposal of solid and hazardous wastes. A substance must be a solid waste in order to be a hazardous waste. 40 C.F.R. §261.3. A solid waste is defined as any discarded material which is abandoned, recycled or inherently waste-like. 40 C.F.R. §261.2(a)(i)(iii). Niacet's wastewater meets the definition of solid waste, i.e., it is a discarded material. However, industrial wastewater discharges that are point source discharges subject to regulation under §402 of the CWA are not solid wastes. 40 C.F.R. §261.4(a)(2).

Section 402 of CWA authorizes the Administrator to delegate to a state the authority to issue permits for discharges into navigable waters within the jurisdiction of such state. An authorized state must ensure that a permit issued pursuant to its delegated authority under §402 of the CWA complies with the requirements of §301, Effluent Limitations, §306, National Standards of Performance, §307, Toxic and Pretreatment Effluent Standards, §308, Inspection, Monitoring and Entry and §403, Ocean Discharge Criteria, of the CWA.

"Point source" is any discernable, confined and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container. . . from which pollutants are or may be discharged. 33 U.S.C.A. 1362(14). "Discharge" is defined in the CWA, in part, as follows: "Discharge" when used without qualification includes a discharge of a pollutant, i.e., a discharge into navigable waters. 33 U.S.C.A. 1362(16). "Discharge" is also defined

Douglas Blazey, Esq.
January 16, 1990
Page 5

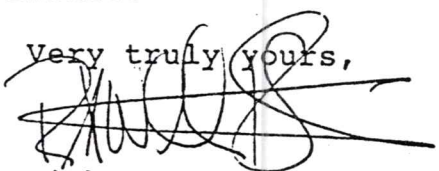
as the introduction of pollutants into a POTW from any non-domestic source regulated under §307(b), (c) or (d) of the CWA. 40 C.F.R. §403.3(g). Therefore, the exclusion in 40 C.F.R. §261.4 can be read to include industrial wastewater point source discharges that discharge to a POTW. Consequently, Niacet's wastewater discharge should be excluded from RCRA regulation pursuant to 40 C.F.R. §261.4(a)(2).

In addition, the RCRA integration provision states that RCRA shall not be construed to apply to any activity or substance which is subject to the Federal Water Pollution Control Act except to the extent that such application is not inconsistent with the requirements of such Act. 42 U.S.C.A. 6905(a). It is inconsistent to subject to full RCRA Subtitle C regulation a wastewater stream already comprehensively regulated by National Categorical Pretreatment Standards and NPDES/SPDES permit requirements.

This is a request that the Agency confirm that Niacet's reading and application of RCRA and its implementing regulations in these circumstances are correct, i.e., RCRA regulations do not apply to the subject wastewater stream. If the interpretation is not correct, please articulate carefully and thoroughly the Agency's preferred reading and application of the regulations as previously stated. It is imperative that you provide an answer as soon as possible.

If you have any questions concerning this request, please call us at (716)856-4000. Thank you in advance for your courtesy in addressing these issues.

Very truly yours,



Rick W. Kennedy

Copy to: Mr. Glenn Althouse

lmr

ACTIVE INGREDIENTS: Phenol and Sodium phenolate (total phenol 1.4%).

INACTIVE INGREDIENTS: Color, flavor, glycerin, saccharin sodium, and water. Sugar Free



For your protection, do not accept if the plastic cap band is missing or broken.

If you have questions or comments about Chloraseptic, please call us toll-free. In the continental U.S., call 1-800-543-7270 (Ohio residents call 1-800-582-1891).

1916 MY 708 481024-1

Distributed by Richardson-Vicks Inc.
Health Care Products Division
Wilton, CT 06897



5 2390079261 6

NE Norwich Eaton Pharmaceuticals, Inc.

NDC 023900-0045-6

FAST-ACTING Chloraseptic[®]

ANESTHETIC ANTISEPTIC

SORE THROAT SPRAY

For Fast Temporary
Relief of Minor
Sore Throat and
Mouth Pain

MENTHOL

6 FL OZ.

FAST-ACTING
Chloraseptic[®]

Relief is just seconds away with Chloraseptic. Recommended by doctors and pharmacists for:

- Minor Sore Throat Pain
- Mouth/Gum/Throat Irritations
- Oral Hygiene

Chloraseptic fast-acting relief is also available in lozenges, gargle and portable aerosol form.

DIRECTIONS: Sore Throat Pain —

Spray 5 times directly on throat (children 3 to 12 years, spray 3 times) and swallow. Repeat every 2 hours as necessary.

Mouth/Gum/Throat Irritations —

Rinse affected area for 15 seconds and spit out. Repeat every 2 hours as necessary.

WARNING: Consult physician if sore throat is severe, lasts more than 2 days or is accompanied by high fever, headache, nausea or vomiting. Do not administer to children under 3 years old unless directed by physician.

Store at room temperature.

KEEP THIS AND ALL MEDICINES OUT OF THE REACH OF CHILDREN.

EXP. DATE

DEC 90

LOT NO.

886186

A Politician's Dream Is a Businessman's Nightmare

Wisdom too often never comes, and so one ought not to reject it merely because it comes late. —Justice Felix Frankfurter

It's been 11 years since I left the U.S. Senate, after serving 24 years in high public office. After leaving a career in politics, I devoted much of my time to public lectures that took me into every state in the union and much of Europe, Asia, the Middle East and Latin America.

In 1988, I invested most of the earnings from this lecture circuit acquiring the leasehold on Connecticut's Stratford Inn. Hotels, inns and restaurants have always held a special fascination for me. The Stratford Inn promised the realization of a longtime dream to own a combination hotel, restaurant and public conference facility — complete with an experienced manager and staff.

In retrospect, I wish I had known more about the hazards and difficulties of such a business, especially during a recession of the kind that hit New England just as I was acquiring the inn's 43-year leasehold. I also wish that during the years I was in public office, I had had this firsthand experience about the difficulties business people face every day. That knowledge

would have made me a better U.S. senator and a more understanding presidential contender.

Today we are much closer to a general acknowledgement that government must encourage business to expand and grow. Bill Clinton, Paul Tsongas, Bob Kerrey and others have, I believe, changed the debate

Manager's Journal

By George McGovern

of our party. We intuitively know that to create job opportunities we need entrepreneurs who will risk their capital against an expected payoff. Too often, however, public policy does not consider whether we are choking off those opportunities.

My own business perspective has been limited to that small hotel and restaurant in Stratford, Conn., with an especially difficult lease and a severe recession. But my business associates and I also lived with federal, state and local rules that were all passed with the objective of helping employees, protecting the environ-

ment, raising tax dollars for schools, protecting our customers from fire hazards, etc. While I never have doubted the worthiness of any of these goals, the concept that most often eludes legislators is: "Can we make consumers pay the higher prices for the increased operating costs that accompany public regulation and government reporting requirements with reams of red tape." It is a simple concern that is nonetheless often ignored by legislators.

For example, the papers today are filled with stories about businesses dropping health coverage for employees. We provided a substantial package for our staff at the Stratford Inn. However, were we operating today, those costs would exceed \$150,000 a year for health care on top of salaries and other benefits. There would have been no reasonable way for us to absorb or pass on these costs.

Some of the escalation in the cost of health care is attributed to patients suing doctors. While one cannot assess the merit of all these claims, I've also witnessed firsthand the explosion in blame-shifting and scapegoating for every negative experience in life.

Today, despite bankruptcy, we are still dealing with litigation from individuals

who fell in or near our restaurant. Despite these injuries, not every misstep is the fault of someone else. Not every such incident should be viewed as a lawsuit instead of an unfortunate accident. And while the business owner may prevail in the end, the endless exposure to frivolous claims and high legal fees is frightening.

Our Connecticut hotel, along with many others, went bankrupt for a variety of reasons, the general economy in the Northeast being a significant cause. But that reason masks the variety of other challenges we faced that drive operating costs and financing charges beyond what a small business can handle.

It is clear that some businesses have products that can be priced at almost any level. The price of raw materials (e.g., steel and glass) and life-saving drugs and medical care are not easily substituted by consumers. It is only competition or anti-trust that tempers price increases. Consumers may delay purchases, but they have little choice when faced with higher prices.

In services, however, consumers do have a choice when faced with higher prices. You may have to stay in a hotel while on vacation, but you can stay fewer days. You can eat in restaurants fewer times per month, or forgo a number of services from car washes to shoeshines. Every such decision eventually results in job losses for someone. And often these are the people without the skills to help themselves — the people I've spent a lifetime trying to help.

In short, "one-size-fits-all" rules for business ignore the reality of the marketplace. And setting thresholds for regulatory guidelines at artificial levels — e.g., 50 employees or more, \$500,000 in sales — takes no account of other realities, such as profit margins, labor intensive vs. capital intensive businesses, and local market economics.

The problem we face as legislators is: Where do we set the bar so that it is not too high to clear? I don't have the answer. I do know that we need to start raising these questions more often.

Mr. McGovern, the 1972 Democratic presidential candidate, is president of the Middle-Eastern Policy Council in Washington.

Beware of False Gods in Rio

Forty-six prominent scientists and intellectuals in the U.S., including 27 Nobel Prize winners, have joined 218 scientists in other countries in an appeal to the heads of state attending the Earth Summit in Rio this week. They call their petition the Heidelberg Appeal, after a conference held in Heidelberg, Germany, in April on hazardous substance use.

The full text is below, followed by the names of the U.S. signers.

The undersigned members of the international scientific and intellectual community share the objectives of the "Earth Summit," to be held at Rio de Janeiro under the auspices of the United Nations, and support the principles of the following declaration.

We want to make our full contribution to the preservation of our common heri-

non-relevant data.

We draw everybody's attention to the absolute necessity of helping poor countries attain a level of sustainable development which matches that of the rest of the planet, protecting them from troubles and dangers stemming from developed nations, and avoiding their entanglement in a web of unrealistic obligations which would compromise both their independence and their dignity.

The greatest evils which stalk our Earth are ignorance and oppression, and not Science, Technology and Industry whose instruments, when adequately managed, are indispensable tools of a future shaped by Humanity, by itself and for itself, overcoming major problems like overpopulation, starvation and worldwide diseases.

DUDLEY R. HERSCHBACH, Nobel (Chemistry), professor of science, Harvard;
ROALD HOFFMANN, Nobel (Chemistry), professor of chemistry, Cornell;

JEROME KARLE, Nobel (Chemistry), chief scientist, U.S. Naval Research Laboratory;

WEN HSIUNG KUO, Department of Sociology, University of Utah;

ABEL LAJTHA, director, Center for Neurochemistry, The N.S. Kline Institute for Psychiatric Research;

M. DANIEL LANE, director, Department of Biochemistry, Johns Hopkins;

ARTHUR M. LANGER, director, Environmental Science Laboratory, Institute of Applied Science, Brooklyn College;

YUAN T. LEE, Nobel (Chemistry), Department of Chemistry, University of California, Berkeley;

WASSILY LEONTIEF, Department of Economics, NYU;

RICHARD S. LINDZEN, U.S. National