

DRAFT
4/16/82

William N. Hedeman, Jr.
Director
Office of Emergency and Remedial
Response (WH-548)
Environmental Protection Agency
401 M Street, SW
Washington, D.C. 20460

RE: Proposed Revisions to the National Contingency Plan
Under the Comprehensive Environmental Response,
Compensation, and Liability Act of 1980
(47 Fed. Reg. 10972, March 12, 1982)

Dear Mr. Hedeman:

The Chemical Manufacturers Association (CMA) is a nonprofit association made up of approximately 190 member companies in the United States representing more than 90 percent of the domestic production capacity for basic industrial chemicals. CMA member companies generate, transport, treat, store and dispose of solid wastes and accordingly may be directly and materially affected by the Environmental Protection Agency's program implementing the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). We are commenting today on EPA's proposed revisions to the "National Contingency Plan" ("NCP").

47 Fed. Reg. 10972-10995, March 12, 1982.

CMA favors the prompt implementation of a program under CERCLA to remedy problems created by inactive waste sites. Because the NCP is to provide the basic framework for such a program, CMA is particularly concerned that the NCP be sound and workable.

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Generally, we believe that the basic approaches EPA has taken in its proposed NCP are sound from a legal and policy standpoint, although there is need for some clarification and adjustments in certain sections. We particularly support EPA's emphasis on a flexible site-by-site approach to assure cost-effectiveness and to assure that the most sensible environmental responses can be taken with respect to very unique and diverse problems. Although more detailed guidance may be appropriate in the future as more is learned from implementation of the program, we encourage EPA to promulgate a final NCP as soon as possible along the basic lines of the proposal so that this important national program may proceed.

Our comments will first address matters of general legal and policy concern. They will then deal specifically with the system for establishing national priorities and the "Mitre Model" which is part of such system. They will then address specific needs for clarifications and/or adjustments.

GENERAL CONSIDERATIONS

We fully support EPA's basic choices in structuring perhaps the most important part of the NCP--the provisions for determining the appropriate extent of remedy for hazardous substances response (proposed §300.67). In developing its proposal, EPA chose site-by-site flexibility over rigid imposition of national standards; it chose to emphasize considerations of costs; and it chose to insure that all remedies under CERCLA--whether publicly or privately financed--would be determined through basically the same flexible, cost-effective

approach.

-- Cost-Effective Flexibility

We fully concur in EPA's well-reasoned judgment, as elaborated at 47 Fed. Reg. 10977-78, that with the great diversity of types of releases and the limited national experience in remedying waste site contamination, flexibility must be retained throughout the remedial process. EPA's proposal is quite direct, precise, and detailed in specifying the factors that must be considered and in specifying how alternatives are to be developed and analyzed (§300.67). It also contains a detailed list of remedial measures to be evaluated. (§300.69). It thus quite faithfully follows CERCLA's mandate to include "methods" for evaluating, analyzing costs, and remedying releases (§105(2)) and "methods and criteria for determining" the appropriate extent of remedy (§105(8)).

The proposal does not, however, take the extra, inappropriate step of specifying a priori nationally-applicable standards. In fact, Congress carefully avoided requiring EPA to issue an NCP specifying nationally applicable numerical standards. Congress explicitly listed in CERCLA §105 nine elements which the NCP must include, and numerical standards are not among them. While the NCP must contain "methods" for remedy (§105(2)), nothing in §105 suggests a requirement for standards to define a priori the appropriate extent of remedy. On the contrary, the NCP need only contain "methods and criteria for determining" the appropriate extent of remedy. (§105(3)).

Congress knew how to require numerical standards when it

wrote CERCLA. Section 102 requires EPA to "promulgate regulations establishing that quantity of any hazardous substance the release of which shall be reported pursuant to §103."

Moreover, Congress has shown in many other environmental statutes that it knows how to require numerical standards. - E.g., Clean Air Act §§109, 111; Clean Water Act §§301, 303; Safe Drinking Water Act §1412. These provisions of CERCLA and other environmental statutes stand in stark contrast to CERCLA §105 and show that numerical standards are not a requirement of the NCP.

We note that EPA is not ignoring environmental protection standards under this approach. As EPA explained in the preamble, "any appropriate standard of criteria will be considered" (along with other technological and environmental factors) in determining the extent of remedy. 47 Fed. Reg. 10978, emphasis added. CMA supports this approach.

A brief review of current Federal and State environmental standards shows why EPA's approach is correct in considering only "appropriate" standards and not requiring them to be generally applicable under CERCLA. Because the environmental medium to be addressed most frequently in CERCLA remedies is groundwater, the most likely candidates for relevant standards appear at first blush to be water quality standards and/or criteria under the Clean Water Act, and/or interim primary drinking water standards under the Safe Drinking Water Act. Yet each of these has an insufficient legal and/or logical basis to be generally required remedial levels under the NCP.

Water quality standards are established under §303 of the Clean Water Act to protect surface waters.¹ They have been generally geared to protection of aquatic life and recreation. Because there are no fish in groundwater and people do not swim or boat in it, most water quality standards which have been established under the CWA are simply irrelevant to CERCLA. Moreover, water quality standards usually include "mixing zone" components for surface water which would be unadaptable for rational use in groundwater.

Water quality criteria which have been issued under §304(a) of the CWA have, again, largely been developed with surface water in mind² because EPA has intended for the states to use the information contained in these criteria to develop their surface water quality standards under §303. More importantly, however, these "criteria" are not standards under the statute and Congress intended that they have no regulatory effect. In fact, EPA has stressed these points in issuing various versions of the criteria. Since these criteria have never been issued to have

¹Indeed, EPA's longstanding position is that CWA §303 does not apply to groundwater. (Citation).

²Although "groundwater" is mentioned in CWA §304(a)(1)(A).

regulatory effect, it would be wholly inappropriate to require them as standards under CERCLA.³

Interim primary drinking water standards under §1412 of the Safe Drinking Water Act would be similarly inappropriate to impose as a general requirement for CERCLA remedial actions. These standards are intended to be tap water standards based upon concentration attainable through treatment techniques for municipal treatment systems. It is likely that many CERCLA remedial actions will not be concerned with underground water which serves such public water systems. Moreover, drinking water standards have been set for such a relatively few substances that their general application to the wide variety of substances which may be found in landfills would be inappropriate.

Moreover, any requirement to achieve any particular nationally predetermined standard in groundwater could create immense technical and practical problems which would only delay efficient implementation of the program. In some cases, there may be natural or man-made "background" concentrations of certain parameters--concentrations which would exist even without the site and/or release in question--which already exceed the specified standard. Another particularly difficult technical problem in the groundwater context is "working backward" from a desired concentration level to a specified remedy in light of the

³In any event, as CMA has commented at length, the current water quality criteria under CWA §304(a) have many fundamental technical and scientific flaws.

basic lack of experience in this complex area and the relatively few basic "clean-up" alternatives.

Similar problems would arise from any general imposition of ambient air quality standards under §109 of the Clean Air Act. For sources located in nonattainment areas of the country, these standards may prove highly inequitable, if not impossible, to meet. In order to attain the ambient air quality goals, states usually specify emissions limitations that are designed for the entire state or a major part of the state. Thus one source in an industrial area will usually be responsible for only a portion of the air emissions reductions that are necessary to achieve the ambient standards. Accordingly, to require one specific source to undertake remedial steps to achieve the §109 standards would place disproportionate and unfair obligations on that source. Indeed, it will often be impossible to reduce air emissions to the extent needed to attain the ambient standards by reductions from a single source.

We also note that any requirement to attain a predetermined standard would be inconsistent with the statutory recognition that "non-cleanup" options might be acceptable remedies. CERCLA §101(24). Moreover, the statute contemplates that all remedial actions be taken to avoid "substantial" danger to health, welfare, or the environment. CERCLA §§101(24) (line 6); 105(2). See also §106(a) ("imminent and substantial" endangerment.) It would be inconsistent with these directives automatically to apply existing environmental standards which, under the Clean Water Act, Safe Drinking Water Act, and/or Clean Air Act, were

developed under quite different statutory criteria. Finally, a uniform "standards" approach would be inconsistent with CERCLA's provisions mandating full considerations of "cost-effectiveness" and assessment of "relative risks" for all remedial actions. CERCLA §§105(7); 105(8).

In conclusion, we believe that these elements of the proposal represent a good example of a sensible approach to environmental protection. By precisely setting forth the type of considerations that must be factored into site decisions, and by avoiding applying nationally uniform standards to diverse problems, the proposal seeks to assure that dollars will be spent where needed to protect health and the environment and that dollars will not be spent where they are not needed.

-- Application to Privately-Financed Responses

We also support EPA's recognition that the appropriate extent of remedy for privately-financed responses be determined by reference to the same methods and criteria applicable to publicly-financed responses (except for the "fund balancing" test of CERCLA §104 for publicly-financed remedies.) See preamble at 47 Fed. Reg. 10978, proposed §300.67(c). We note that in earlier drafts of the proposal, EPA had simply not included provisions for privately-financed remedial activities under CERCLA.⁴ We encourage EPA to retain its currently proposed approach when issuing the final NCP. As discussed briefly below, numerous provisions in CERCLA make clear that the NCP must address the

⁴Inside EPA, October, 1981, p. __.

extent of remedy for both types of approaches.

Section 105 directs EPA to amend the existing NCP (under §311 of the Clean Water Act) "to reflect and effectuate the responsibilities and powers created by this Act [CERCLA]." This section specifies certain elements which the revised NCP must contain, including "methods and criteria for determining the appropriate extent of removal, remedy, and other measures authorized by this Act." §105(3). The penultimate sentence of Section 105 specifies that following publication of the revised NCP, "the response to and actions to minimize damage from hazardous substance releases shall, to the greatest extent possible, be in accordance with the provisions of the plan."

The phrases "powers created by this Act," "removal, remedy, and other measures authorized by this Act," and "response to and actions to minimize damage" obviously apply to privately-financed remedies as well as fund-financed remedies. Absolutely nothing in these provisions indicates an intent to restrict the NCP to fund-financed remedies. Nor can such a restriction be fairly implied.

The requirements of §105 are reflected in other sections of CERCLA. Section 106 authorizes EPA to provide for privately-financed remedies through administrative orders and/or litigation. EPA must exercise this authority using "guidelines" to be published under §106(c). This subsection specifies that "such guidelines shall to the extent practicable be consistent with" the NCP.

Senator Stafford, one of CERCLA's principal sponsors,

recognized that orders for privately-financed remedies under §106 would be governed by the NCP. In floor debate shortly before CERCLA's enactment, he described circumstances under which courts might review such orders. He stated that "we would expect the courts to examine the particular orders or expenditures from the fund to determine whether they were proper, given the standards of the act and of the national contingency plan." 126 Cong. Rec. S15008 (daily ed. November 24, 1980), emphasis added.

Moreover, Section 107 outlines the only principles of liability included in CERCLA. It states, without distinguishing between fund- and privately-financed remedies, that parties will be liable only for costs which are "consistent with" (or in some cases "not inconsistent with") the NCP.

§107 (a)(4)(A)-(B).

The foregoing shows conclusively that CERCLA demands that the extent of remedy for privately-financed actions be addressed in the NCP, and that private parties' liabilities under CERCLA are to be based on the provisions of the NCP. Nothing in the statute authorizes EPA to limit the NCP to fund-financed remedies only.

We recognize that CERCLA authorizes EPA to distinguish between the extent of fund-financed and privately-financed remedies in one respect: for fund-financed remedies, CERCLA §104(c)(4) requires consideration of "the availability of amounts from the Fund." The "fund limitation factor" is, however, the only statutory basis to distinguish between fund-financed and privately-financed remedial levels. All remedies under CERCLA

are required by §105(7) to be "cost-effective." They must also be based upon the priority list developed under §105(8). Accordingly, all NCP provisions relating to fund-financed remedial levels--except those which can be justified solely on the basis of the fund limitation factor--should apply equally to privately-financed remedies.

EPA's current proposal faithfully tracks CERCLA's requirements by providing in proposed 300.67(c) that all of the factors in 300.67(e) through (j) must be applied to both types of remedies, but that 300.67(k) will apply to fund-financed remedies only. Inasmuch as 300.67(k) states the requirements of CERCLA §104(c)(4), it is an entirely appropriate provision. We urge EPA to retain its current approach as the only one that is faithful to the statutory structure.

ESTABLISHMENT OF NATIONAL PRIORITIES

A crucial portion of the National Contingency Plan under CERCLA is the requirement in §105(8) for the establishment of priorities for remedial action. Under §105(8)(A), the NCP is to include "criteria" for determining priorities based upon relative risks. Under §105(8)(B), EPA is to list "national priority releases as part of the plan [NCP]." To the extent practicable, this "National Priority List" shall designate at least 400 "top priority" releases.

This process is crucial, for as the proposal recognizes (§300.67(a)), remedial actions will be limited to releases on the National Priority List. Thus, to insure that public and private funds are used where they are most needed, it is essential that

these provisions of the NCP provide a sound basis upon which to assess and rank the types of "relative risks" contemplated by CERCLA §§105(8)(A).

Our comments below first briefly address the management procedures in the proposal for state submissions and EPA review. We will then discuss in more detail the "Model for Determining Priorities" referenced in §300.65(d), commonly referred to as the "Mitre Model."

-- Management Procedures

CMA agrees that the States should screen the hazardous waste sites reported under CERCLA §103(c) because the States are most familiar with the sites in their areas and are usually best able to obtain the information needed to score the Mitre Model. Many States have already done a significant amount of work on identifying problem sites. For example, New York State has surveyed over 680 sites and narrowed their problems down to about 40.

However, as discussed in more detail in our section on the Mitre Model, we recommend that the States be given more flexibility in scoring the Mitre Model. The instructions for scoring the Model are so rigid that they effectively preclude consideration of easily obtainable, pertinent information. This may in turn lead to gross distortions in the ranking process. We agree that EPA should review the State candidate lists and verify the Model scores to assure the required data is complete, deviations from scoring instructions make sense, and scores are not artificially altered to gain an advantage in the listing.

The proposal is quite vague on one element which is crucial from both a legal and policy view. The issue is how and when EPA will publish the final list "as part of the plan," as required by CERCLA §105(8)(B). The preamble merely states that after EPA has reviewed and assessed the State submissions, the "National Priority List will then be published." 47 Fed. Reg. 10977. The actual regulatory language is even more unsatisfying. After EPA states in §300.65(f)(3) that it "will submit the recommended National Priority List to the NRT for review and comment," it says nothing more. No provision whatever is made for publishing the list.

We believe that CERCLA and the Administrative Procedure Act require that EPA first propose its list for public comment before finalizing it. It is clear that the NCP is to be issued through informal rulemaking (CERCLA §105, first sentence), and that the list is to be "part of" the NCP. EPA cannot avoid rulemaking on the list simply by delaying its publication after other parts of the NCP are finalized.

In this regard, we urge EPA to carefully consider State of New Jersey v. EPA, 626 F.2d 1038 (D.C. Cir. 1980). In that case, the D.C. Circuit (which has jurisdiction over any petitions to review the NCP by virtue of CERCLA §113(d)) ruled in a highly analogous situation involving "lists" of areas under the Clean Air Act that EPA erred in publishing such lists without rulemaking.

It is also important from a policy view to propose that list before finalizing it. As noted before, the list will become a

crucial component of the national waste-site remedial program, and crucial choices of allocation of public and private resources will depend to a significant degree on the composition of the list. It is therefore important for those who have an interest in the efficient allocation of these resources, including the general public, to have an opportunity to review EPA's choices in this crucial area. It is also possible that this process could significantly impact on EPA's evaluation of a site.

In this regard, we suggest that any proposed list clearly distinguish between those sites which might require further review to determine if the Mitre score is appropriate and those sites which EPA feels confident that the data supports undertaking remedial action investigation programs. This will provide the public with the opportunity to come forward with new information that might avoid displacing a high hazard site with a site that presents little or no hazard.

We realize that any rulemaking procedures can produce delays and that EPA might be inclined to avoid rulemaking. We sympathize with the concerns for delays, for we fully support prompt and efficient implementation of the national remedial program. Yet on such a crucial matter as the choice of sites to which all remedial efforts will be focussed, and in light of the clear requirement of CERCLA and the D.C. Circuit's State of New Jersey case, we do not see how rulemaking should or could be avoided. We urge EPA to conduct such a rulemaking in an expeditious manner to minimize delays in implementing the program.

We agree with EPA's management concept of grouping sites on the list rather than a rank order based upon the Mitre Model score (§300.65(f)(2)). The Mitre Model scores lack the precision to distinguish subtle differences in hazard and a rank order would mislead the public on accuracy of the site listing.

Finally, since the list of sites must be updated annually, CMA believes that the States should be given some guidance and assistance as to how to assess sites not adequately considered in the preparation of the States' initial candidate list. A prescreening system that identifies the key factors might be useful. CMA has prepared a "decision tree" which identifies most of the same key information that is readily available and inexpensive to obtain. We think such a system will help States set the priorities for investigating the other sites and provide some consistency in candidate identification. We have attached a copy of this process.

-- Mitre Model⁵

The Mitre Model is a fairly good value analysis technique for making the selection of priority sites. The Model addresses most of the key factors needed to rate the hazard potential of a hazardous waste site. CMA does not agree with those who may argue for a total abandonment of the Model in favor of something completely new.

⁵Mitre Corporation, "Site Ranking Model" of June 4, 1981, as referenced in proposed §300.65(d), 47 Fed. Reg. 10991.

A totally "fresh start" will almost certainly result in counterproductive delays in remedying the problem sites and add costs to the ranking system and CERCLA far in excess of the benefits that could be accrued. No model will precisely define the highly complex "real" world of hazard and risk potential posed by abandoned hazardous waste disposal sites. No matter how sophisticated the model, wide variations in hydrogeologic factors, waste characteristics and climate are encountered at each site which in combination with the lack of readily available data and the high cost of data acquisition make the simplification of the model essential to avoid wasting the limited funds available for cleanups for the minimal benefits of a more precise model.

However, as discussed below, the Mitre Model can and should be modified, without substantial delays, to allow for greater flexibility in the application of the Model to varying levels in information available on each site. In short, CMA thinks that the Mitre Model is probably the most cost-effective approach to setting priorities under CERCLA but the the guidelines and instructions used for scoring should be made less rigid so that if relevant information is available, it will be considered.

The current instructions for scoring the Model preclude consideration of highly relevant information for the sole purpose of equalizing the consideration given to listing sites for which a significant amount of data exists, e.g., hydrogeologic, waste

analysis and sites for which little is known. CMA believes that the Model as currently constructed penalizes responsible parties who have done a diligent job of investigating hazardous waste disposal. The Model now produces higher scores for measured release no matter how minute the concentration and denies consideration of other factors where valid measurements or studies might exist. Highly pertinent hydrogeologic factors such as groundwater flow direction and concentration of hazardous constituents in otherwise innocuous waste are arbitrarily excluded. Excluding this information will lead to displacing sites that might require immediate Superfund attention with sites that present little or no hazard.

In particular, there are two instances of inflexibility to which we seriously and strenuously object (as discussed in more detail below): (1) the use of "total waste quantity," without distinguishing between degrees of hazard in waste; and (2) the use of an assumption that all population within a 3-mile radius may be impacted through a groundwater pathway, without consideration of information respecting groundwater flow. In both respects, the Model can operate in such a way as to produce gross distortions in scoring. We believe that the Model must be revised to allow for flexibility in these important respects.

-- Specific

The following discussion will address specific concerns and/or recommended improvements to the Mitre Model that CMA believes can be made without undue delay.

The Model provides for scoring three pathways by which people or the environment might be impacted by hazardous waste disposal sites--ground water, surface water and air. Other routes of potential exposure--direct contact, fire, and explosion--will not be included in the score for the purpose of ranking the sites for remedial action. 47 Fed. Reg. 10975. Fire, explosion and direct contact usually require emergency relief actions such as removal, fencing etc. CMA agrees that only long-term problems should be ranked on the priority list for the purposes of taking remedial actions. Emergency situations should not be hidden among the priority sites. These actions require immediate attention. This, of course, does not preclude the scoring of sites that require emergency action for possible listing as potential hazards to ground water, surface water and air once the emergency corrective actions are taken.

We also think that the relative importance of ground water and surface water in relation to the air pathway is appropriate in the current model. Most of the serious threats posed by hazardous waste sites are through contamination of ground water. Surface water is less frequently involved but is still important. The emissions of substances to the atmosphere from hazardous waste disposal sites are rarely significant contributors to air pollution. The model now requires measured evidence of contamination above background, which is the minimum requirement for considering this pathway.

We think that air emissions from a hazardous waste site do not deserve special attention or control not now required of

other types of operating emitting facilities. Therefore, the emission rate should not only be compared to background but also it should be compared to emission rates permitted for operating facilities in State. We see no sense in singling our air emissions from a hazardous waste site for control when the reductions will not significantly reduce air pollution.

Ground Water (pp. 35-38)

The Release Category (pp. 35-36) for groundwater consists of two sections as follows:

- o Observed Release which requires a measurement of hazardous substance or a documented observation that can be attributed to the site such as presence of oil in wells.
- o Potential Release which uses surrogate factors called "route characteristics" to estimate the potential for release in the absence of measurement. These characteristics are depth to aquifer of concern, net precipitation, permeability, and a factor called "containment."

Observed Release can only receive either a score of nothing or the maximum for release category of 45. A major problem with the observed release category is that "all or nothing" approach. A maximum score of 45 is required for any measurement of a hazardous substance regardless of the concentration measured or whether the aquifer of concern is impacted. This results in higher scores for the release category for sites with ground water monitoring in place. Responsible parties who have

obtained any ground-water monitoring data, no matter how insignificant the level of contamination, will receive the highest score.

Abandoned waste sites under this system will usually have no analytical data and be scored under the "potential" category. The potential release scores will frequently not receive the highest score for release because potential release considers containment e.g., liners, and depth to aquifer of concern. Therefore, the Model will bias the list in favor of sites where data is available by precluding consideration of concentrations measured. This bias will divert CERCLA away from its primary objective--clean up of abandoned sites.

CMA recommends establishing other level scores between 0-45 for measured releases based upon concentration measured. We think that the system along the lines suggested below would be useful in differentiating hazards and avoid the diversion of CERCLA remedial attention from abandoned waste sites.

<u>Concentration</u>	<u>0-10 ppb</u>	<u>10 ppb - 100 ppb</u>	<u>100 ppb - ppm</u>
<u>Score</u>	0	5	15

<u>Concentration</u>	<u>1 ppm - 10 ppm</u>	<u>10 ppm - 50 ppm</u>	<u>more than 50 ppm</u>
<u>Score</u>	25	35	45

In addition, we think that measured level of release should be determined in the aquifer of concern. Since depth to aquifer of concern is a key factor in the potential release category, we

think that to remain consistent in evaluating potential releases and measured releases both should be in the aquifer of concern. Therefore, if the measured level of release is found in the shallowest ground water but this ground water is not used for drinking or irrigation etc., we believe the score for "observed" should be zero and the site should be scored on the basis of potential release to the aquifer of concern.

Potential Release

The aquifer of concern is defined as the highest point of the water table. We consider the aquifer of concern to be ground water that is used by the public, industry, or agriculture. Much shallow ground water is not used and would not be used for many reasons such as septic systems discharge, county regulations, and/or insufficient water yield. This information should be readily available to local authorities. In any event, if this information is known, provisions for its consideration should be included in the scoring guidelines.

The factors of net precipitation and permeability of the unsaturated zone are key factors and have been adequately considered. We also believe that containment is adequately addressed.

Waste Characteristics (Model, pp. 36-54)

The Waste Characteristics category is composed of three factors: physical state, persistence and toxicity/infectiousness.

Physical state (p.39) is an important characteristic because liquids have more of a potential to percolate through a waste

site than solids. However, CMA fails to see the significance of gases in establishing potential for groundwater contamination. Gases are pertinent to fire and explosion and air contamination but have little impact on groundwater. Therefore, we recommend deleting this from evaluation in groundwater pathway. In addition, liquids in wastewater treatment ponds are part of NPDES permits and regulated by RCRA. Consideration of these ponds under CERCLA would be duplicative and inconsistent with CERCLA's primary objective of dealing with inactive waste sites.

We also believe that the physical state of the waste is a more appropriate indicator of potential for release as compared to toxicity and persistence which are impact effects. As such, the waste's impact would be mitigated by the containment in place. Liquids in landfill increase the potential for leaching in much the same manner as net precipitation. Consequently, we suggest including this factor in potential for release. Since liquids might have little impact on the ground water if a leachate collection system and liner is in place, containment should play a role in evaluating this factor.

Toxicity (pp. 42-54) is an important factor in assessing the potential hazard of a disposal site. However, this is probably the one factor where scientific information is least accurate. CMA is particularly concerned that the Model solely for convenience uses the scientifically unsound Sax rating system (pp. 49-54, Tables D-4, D-5 and D-6). We are particularly concerned with Sax's identification and classification of chronic health information and data. Sax uses the NIOSH Registry of

Toxics Effects as its source of data. The NIOSH Registry is simply a compilation of any reported health effects on the chemicals. It makes no attempt to determine the validity of the test or health effects. Most scientists would accept the acute toxicology testing results reported, but many scientists would not rely on the chronic toxicology test results. In fact, data on five of the six chemicals presented to EPA's Scientific Advisory Board, in support of identifying the chemicals as carcinogens, were determined to be seriously flawed. (Citation). Much of this data was listed on the NIOSH Registry of Toxic Effects. The preface to the NIOSH Registry cautions users as follows: "In most cases no attempt was made to resolve any question about published data." "In classifying reports, the editors of RTEC's apply technical criteria specified in the detailed file description to each report to allow extraction of data on a consistent basis. The evaluation a substance's toxic potential is much more difficult and requires the collection review and analysis of all germane studies. . . The Registry makes no attempt to perform such a comprehensive analysis. (Citation).

CMA believes that using the NIOSH registry of toxic effects or Sax's rating in the Model is a misuse of this information, particularly for chronic effects. We suggest relying on the acute toxicology tests supplemented by a list of substances regulated by EPA or other agencies based upon potential long-term chronic health effects. For instance, the list could be composed of currently listed Section 112 hazardous air pollutants,

pesticides suspended or cancelled under FIFRA, and OSHA's regulated carcinogens.

CMA suggests the following approach to identifying and classifying toxicity values for the Model:

The general population may be exposed to hazardous chemical wastes entering one of three environmental compartments--i.e., water, groundwater or air. If the chemical is likely to move in water or from land to water (surface or ground), the most likely human exposure route would be ingestion. Therefore, the lowest reported oral LD₅₀ value for a mammalian species, expressed in mg/kg body weight, for the most toxic chemical in the waste, would be retrieved from the Registry of Toxic Effects of Chemical Substances (1980).

Negligible (0)	=	LD ₅₀ greater than 15,000 mg/kg
Slight (1)	=	LD ₅₀ between 7,500 and 15,000 mg/kg
Moderate (2)	=	LD ₅₀ between 500 and 7,500 mg/kg
Substantial (3)	=	LD ₅₀ of 500 mg/kg or less

In addition, if the waste material appears on the following list⁶ of substances chosen by the government as described above, then the toxicity rating is 3:

2-acetylaminofluorene	DDT
Acrylonitrile	3,3'-Dichlorobenzidine (and its salts)
Aldrin/Dieldrin	Ethyleneimine
4-aminodiphenyl	Inorganic arsenic
Aramite	Lead
Arsenic trioxide	Mercury
Asbestos	Methylchloromethyl ether
Basic copper arsenite	4,4'-Methylene bix (2-chloro aniline)
Benzac Bentazone	Mirex
Benzene	Monuron
Benzidine	4-Nitrobiphenyl
Beryllium	n-nitrosodimethylamine
Beta Naphthylamine	Ompa
Beta-Propiolacetone	PCB
Bis chloromethyl ether	Perthane
Chloranil	Phenarsazine chloride
Chlordane/Heptachlor	Safrole
Chlorodecone	Sodium arsenite
Copper acetoarsenite	Strobane
DBCP	2,4,5-T/Silvex
DDD (TDE)	Trysben
	Vinyl chloride

By suggesting the use of the foregoing list for purpose of making assumptions in the Model, CMA in no way is suggesting that it concedes the validity of any particular governmental regulation

⁶o This list was derived from the following sources:

- o Bureau of National Affairs, Inc. Environmental Reporter, Tab Section 121-- Air, pp. 0461-0504, EPA Regulations on National Emission Standards for Hazardous Air Pollutants (40 CFR 61).
- o Bureau of National Affairs, Inc., Chemical Regulation Reporter, Volume 4, pp. 624-625, EPA Status Report on Rebuttable Presumption Against Registration (RPAR) Proceedings and Development of Pesticide Registration Standards (40 CFR 162.11).

Tab Section 57--Chemicals in Workplaces, pp. 0401-0483, Occupational Safety and Health Standards Subpart Z--Toxic and Hazardous Substances (29 CFR 1910.1000-1910.1500).

pursuant to which such a substance was listed. We are only suggesting that inasmuch as these substances have been regulated as chronically hazardous through rulemaking procedures, they are more appropriate for use in the Model than the substances in the NIOSH registry.

In addition, CMA believes that toxicity rating should reflect the concentration of the toxic substances if such information is readily available, i.e., obtained without expensive sampling and analytical programs. We suggest that the following formula should be used to accommodate this additional information if known:

If the types and quantities of wastes in a site are reasonably known, determine the toxicity factor using the following formula:

$$F = (M_1T_1^2 + M_2T_2^2 + \dots)^{1/2}$$

where: F = toxicity factor

M_i = fraction of waste component, i, mass

T_i = toxicity rating of waste component, i

If the types and quantities are not known, we think the current approach of the Model is adequate.

Persistence

The chemical chosen for persistence or toxicity rating should reasonably be expected to be present in the waste. Consequently, groundwater monitoring results showing trace levels of a substance that would not be reasonably expected to be found in waste and could result from other sources e.g., septic tanks, cleaners, etc., should not be used to elevate the score.

Hazardous Waste Quantity (p.55)

The Model's approach with respect to this factor is quite irrational. Because this factor has the most important impact on the score, CMA strenuously urges that the Model's approach must be modified.

The Model uses Total Waste Quantity with no consideration of the hazardous constituents. Information on the hazardous components of the waste must be considered if it is available without undertaking an expensive analytical investigation program. If a waste is known to be homogeneous and data or documentation exists on the concentration of the hazardous constituents, it should be used in scoring this category. If concentration is not considered in assigning a value to waste quantity, very low hazard sites will appear high on the priority list, thereby diverting attention away from potentially more onerous situations. For instance, a site containing innocuous gypsum (wallboard material) that might be contaminated with 1 ppb PCB should not receive the same score as a site with same quantity of pure PCB. However, the Model as currently constructed will not distinguish the two circumstances. CMA suggests calculating the quantity of the hazardous waste constituents by using the concentration times the total waste quantity and using this quantity as the total waste quantity. We recognize that if concentration is not known and/or if waste is not homogenous, the current Model scoring is appropriate.

Targets (pp. 55-58)

The Targets category is made up of three factors--ground-

water use, distance to nearest well downgradient, and population served by ground water within 3-mile radius.

Ground-water use is an important consideration and the Model's emphasis on drinking water use is appropriate. Protection of the public health is the most important objective of CERCLA. We support the value analysis proposed in the Model for this factor.

Distance to Nearest Well Downgradient is again an important factor in ranking the potential hazards of waste disposal sites. CMA agrees with the values assigned for each distance but thinks that it is not appropriate to speculate that nearby houses or buildings are using wells. Simple telephone calls to nearby residents can establish if they are using well water or municipal drinking water. We see no reason to avoid making such a survey. Data on nearby municipal wells should also be easily obtained by calling the local authorities. Very often authorities require well drillers to submit well boring logs and any yield information. This information, if available, is invaluable in determining the aquifer of concern and should be used to determine if any wells might be impacted by the site.

Population Served by Drinking Water Wells within a 3-Mile Radius is a factor that next to Hazardous Waste Quantity has the greatest impact of the score for the groundwater pathway. The Model quite appropriately places more emphasis on addressing hazardous waste sites located in heavily populated areas. In fact, CERCLA specifically requires consideration of this factor.

However, a factor having such immense influence over the

final groundwater score should allow consideration of hydrogeologic information or professional judgment on groundwater flow direction and natural in-place geologic barriers between shallow and deep aquifers. Similar to our comment on Total Waste Quantity above, we strenuously urge that the Model must be modified to accommodate these factors. The Model should use United States Geologic Survey data and information available from State surveys and/or responsible parties to establish groundwater flow direction and natural geologic barriers between deeper aquifers and shallow aquifers. This information could alter the population at risk substantially and avoid unnecessary, counterproductive listing of sites. For instance, if the shallow groundwater flow is away from any municipal wells, a clay barrier exists between the shallow aquifer and only the deep aquifer is used for municipal drinking water wells, the score would better reflect the real risk than the 3-mile radius criteria, if this information was used to eliminate the municipal wells from consideration and the focus was placed on the shallow aquifer.

CMA also recommends that another factor be included in this category that recognizes the interrelation of a surface and groundwater system. Hydrogeologists generally recognize that groundwater eventually discharges to surface water and some surface waters, e.g., lakes, wetlands, act as recharge areas for ground water. However, the Model treats these two systems as separate.

Since the shallow ground water often discharges to surface waters, groundwater contamination often becomes a surface water

problem. Consequently, CMA suggests that the following factor be used in assessing Targets:

If a site is located within 1,000 feet of a major surface water body; no wells are located between the site surface water body and the shallowest aquifer is determined to flow towards the river, the score for targets should be zero and therefore groundwater pathway zero. The site should then be evaluated as discharge to surface water pathway.

Surface Water Pathway (pp. 59-82)

The Release category (pp. 59-63) is composed of the same basic factors as the groundwater pathway. We have the same concern for consideration of concentration as in groundwater and make the same recommendations.

We also do not think equating qualitative data such as erosion etc., with measured evidence of release is appropriate and suggest simply using the potential for release category and altering the containment factor if observed releases such as erosion etc. are found.

While mention in the observed release scoring is made for groundwater discharge to surface water, CMA thinks if groundwater contamination is measured and the groundwater is determined to discharge only to surface water it should be scored as measured evidence of release per our suggestion for considering concentration under groundwater. The concentration should be determined in the surface wastes through modelling or analysis.

However, if there are NPDES permitted discharges to the same surface water or similar substances in quantities much greater

than the contribution of the groundwater discharge, the site should be scored 0 for measured release and evaluated as a potential surface water discharge via flood, pond overflow, etc. We think these factors in combination with the containment factor are appropriate.

The Wastes Characteristic Category (pp. 63-78) is essentially the same as for groundwater. We believe our comments on this category under the groundwater pathway apply except that we believe persistence plays a more appropriate role in this media since dissolved oxygen and bacteria needed to biodegrade substances are present in surface water systems.

The Hazard Waste Quantity (p.79) needs to consider concentration in the same manner suggested in our comments under groundwater pathway.

The Targets category (pp. 79-82) for surface water contains differences from the analogous groundwater provisions. The most notable change is in the replacement of Distances To Nearest Well Downgradient with Critical Habitats (p.80). While we agree that distance to nearest critical habitat is needed, we think that distance to nearest wetland must be tempered when it is known that the wetland is along a flowing stream versus a more stagnant flow condition such as a bayou or small pond. We are also perplexed as to why critical habitat would be equated to "flood plains" as a target category. Certainly it is incorrect to

assume that all floodplains in the United States are "critical habitats." Moreover, the potential for floods causing a release was addressed under potential release factors. We recommend deleting this alternate scoring factor.

We generally agree with the factors and values for population served by surface water with intake within 3 miles downstream and surface water use. However, we would recommend adding the use by the food processing industry of a water which comes in direct contact with food as equivalent to drinking water use.

Air Pathway (pp. 83-100)

The hazards and risks posed by releases of contaminants to air from hazardous waste disposal sites is minimal. We agree with the Model requirement that actual air monitoring results showing a release of a hazardous substance above background levels is the minimum requirement for considering this route of exposure. However, we believe that it is not warranted to list sites for purposes of minimizing air contamination that might be related to the hazardous waste disposal site if its release is insignificant relative to legally permissible releases from operating facilities in the area. Emissions from hazardous waste sites are in no more urgent need of control than other emissions to the atmosphere unless a nuisance odor or irritant is created or it can be demonstrated that the site emissions presents a significant risk to public health.

SPECIFIC, SECTION-BY-SECTION COMMENTS

§300.6 (Definitions)

In part (g) of the definition of "Federally permitted release," a clause appears to have been inadvertently dropped. The corresponding CERCLA provision (§101(10)(G)) refers to injections "authorized under Federal underground injection control programs or State programs submitted for Federal approval (and not disapproved by the Administrator)." In the proposed regulatory definition, which otherwise follows the statute verbatim, the underscored clause does not appear.

§300.24 (State and Local Participation)

-- In §300.24(d), the reference to "1510.63" makes no sense. EPA's intent should be clarified.

-- CMA believes the states should have a central role in the implementation of CERCLA. Many states already are carrying out duties analogous to those required by the Act, so the remedial program may be carried out more efficiently and expeditiously by states with the interest and capability to administer response actions.

If EPA determines that a state has the necessary capabilities, it should seek to delegate extensive authority. In addition to site screening and hazard ranking, the state should be allowed to act as the on-scene coordinator for response

actions. The state would thus have responsibility for development of a proposed remedy (or approving a privately-proposed remedy), developing the array of alternatives and associated analyses if necessary, and managing or monitoring the response activities.

It is unclear from the proposed NCP whether and to what extent states are to exercise such authorities. We note that in its "Guidance" for state cooperative agreements and contracts issued on March 11, 1982,⁷ EPA apparently contemplates that with "cooperative agreements," a state would "assume as much of the management responsibility as it is willing and able to assume." Guidance, p.3.

Yet the provisions of the NCP seem to be vague and imprecise in this respect. Reference to the definitions of "Lead Agency" and "On-Scene Coordinator" in §300.6 appear to contemplate only Federal agencies and officials. The above-noted improper reference to "1510.63" in §300.24(d) causes one to wonder whether the intended reference was to §300.63, in which case states would be authorized to take only "Phase II - Preliminary Assessment" actions.

⁷As such Guidance was not proposed for comment in the Federal Register, CMA does not consider it as within the scope of today's rulemaking comments. CMA is continuing to assess the Guidance document, however, and reserves the right to object to any portions of it in the future.

Moreover, although §300.24(f) contemplates that a state may "assume responsibilities for response actions pursuant to Subpart F," we are unable to find any particular method (or even reference) in Subpart F pursuant to which a state may assume any responsibilities. Moreover, with respect to §300.24(f), the term "executing agency" appears to be undefined and it is unclear as to what EPA intended.

In short, some clarification of EPA's intentions on state roles is in order. EPA should consider appropriate amendments either to "lead agency" and "on-scene" coordinator in §300.6, and/or to Subpart F, to specify when and how states will manage various response activities.

-- Also in §300.24, any particular State or local governmental entity's participation in Regional Response Team activities should be limited to those RRT activities that relate to their respective jurisdictions. Participation of State A in the response activities of State B are appropriate only where there are interstate implications. See also §§300.32(b)(1) and (2).

Reimbursement to Private Parties from Fund (§§300.25(d) and 300.70(b))

One important option to the promotion of efficient remedial actions is an arrangement where one or more responsible parties volunteers to perform (and pay for) more than its "fair share" of remedial costs and EPA agrees to reimburse the party (or parties) from the Fund for the party's expenditures in excess of its fair

share. Under such a scenario, Fund resources would be used for their intended purpose of covering the costs attributable to insolvent or unknown parties, and the time-consuming and costly Federal contracting processes could be avoided. EPA's proposal appears to contemplate such an approach, but in a rather confusing and disjointed way which needs clarification.

The subject appears to be addressed in both §§300.25(d) and 300.70(b), although the only preamble reference is to §300.70(b). (47 Fed. Reg. at 10978.) We note the following ambiguities in §300.25(d):

-- The lead paragraph of (d) discusses the concept of being "in conformity with this plan for purposes of Section 111(b) of CERCLA." We do not understand this reference, and wonder whether a reference to CERCLA §111(a)(2) was intended.

-- We do not understand the special requirement of 30 day's notice for removals (as distinguished from remedies) specified in §300.25(d)(1). It appears that so long as §300.25(d)(2) requires prior consent of the OSC, the notice provisions of §300.25(d)(1) are superfluous.

-- The reference in §300.25(e) to "\$1510.25" is obviously incorrect.

-- We do not understand the reference to CERCLA §104(c) in §300.25(f). Which of the four paragraphs of CERCLA §104(c) are referenced here? It does not seem that all of the paragraphs were intended, for the question of whether a state has entered into a "cooperative agreement" under §104(c)(3) should be

irrelevant where EPA is not actually performing the remedial actions, but merely agreeing to reimburse a private party. Along these lines, EPA should modify §300.67(b), which requires State cooperative agreements or contracts before "any Fund-financed" remedial action is undertaken. CERCLA §104(c)(3) demands such state agreements only where EPA actually provides remedial action; it does not speak to situations in which the Fund may be used to reimburse private action.

CMA believes modification and clarification here is quite important. It makes no sense to impede the efficient implementation of the national remedial program by imposing unnecessary and/or confusing conditions on such reimbursements.

We also note the following ambiguities in §300.70(b):

-- Although this is the only section on "preauthorization" referenced in the preamble, it gives even less guidance to private parties than §300.25(d). In fact, §300.70(b) does not seem to be drafted with private parties in mind. Section 300.70(b)(1) states that costs will in most cases be preauthorized by a "cooperative agreement or contract"--terms which at least in common CERCLA parlance denote State-EPA agreements. Similarly, the rest of 300.70(b) appears to be written only with State reimbursement in mind.

-- We feel that this entire subject needs to be greatly clarified. We urge EPA to do so in a way which places few impediments to preauthorization so that voluntary private participation in remedial actions may be promoted and that the national remedial program may accordingly be more efficiently

carried out.

§300.33 --

The responsibilities of the OSC designated on incidents at Department of Defense facilities (§300.33(b)(8)) are unclear. The interface of the DOD/OSC and the RRT should be defined.

The roles of the Environmental Response Team and the Scientific Support Coordinator appear to overlap in the areas of damage assessment and natural resource restoration. The roles and responsibilities should be more clearly defined in order to minimize duplication of efforts and conflicts.

Under §§300.33(f)(4)(v), 300.35(d), and 300.68(b), POLREPS and other reports are to be transmitted to the RRT (or the RRC). In response actions where private responsible parties are contributing resources to the activity, such reports should also be transmitted to the respective responsible parties.

§300.35 --

This paragraph (and elsewhere) should specifically encourage the interaction of federal response officials with the public. Affected parties should be encouraged to take an active role in the decisionmaking process on response actions.

§300.62(d)--

The section improperly requires any "release" to be reported

to the NRT. This section should be amended to take account of the fact that many types of "releases"--as broadly defined by CERCLA §101(22) and proposed §300.6--are not required to be reported. For instance, releases within the "reportable quantities" established by CERCLA §102; "federally-permitted releases," as defined in CERCLA §101(10); and releases covered under CERCLA §103(f) are all exempt from reporting under the statute and cannot be made subject to reporting through the NCP.

§300.63 --

Priorities are mentioned in §300.63(a) with respect to assessments. These priorities should be specified. If the priorities are Phase IV priorities, this should be stated.

In §300.63(b), better wording of the first sentence is "A preliminary assessment...may include collection of data...."

§300.64(c)--

This subsection requires, as a condition to considering an immediate removal action "complete," that "contaminated waste materials have been treated or disposed of properly." This requirement is quite inconsistent with the purposes of "immediate removal" set forth in §300.64(a) and the options for action set forth in §300.64(b), such as fencing, placement or physical barriers, or controlling water discharges from an upstream impoundment. The "treated or disposed of" requirement may be appropriate for some immediate removals. But it may fit in more

logically with planned removals or remedial actions at the site, as §300.64(d) apparently contemplates. Moreover, EPA's discussion of its "planned removal" provisions in the preamble (47 Fed. Reg. 10974) bears this out.

We accordingly urge EPA make clear that the "treated or disposal of" requirement is not a precondition for completion of immediate removal actions.

§300.65 --

Subparagraph 300.65(c) provides for investigations of sites. The data to be collected under this subparagraph appear to repeat work that would have already been undertaken under Phase II and III activities. We recommend that EPA carefully review its requirements for investigations and data gathering so that public and/or private funds will not be wasted on duplicative and/or unnecessarily overlapping efforts. For instance, it might be appropriate to stress that the data gathering effort through the various phases is cumulative in certain respects, and that responsible personnel should coordinate their efforts to avoid duplications and overlaps.

§330.66 --

-- Subparagraph 300.66(b)(3) stipulates that a state must agree to submit an unranked site for priority listing in order to receive funding. Submittal for listing is inappropriate if the site will be remedied by the time the next list is prepared.

-- The provisions of §300.66(b)(4) and 300.66(c) are inconsistent. Item (b)(4) should be stricken or modified by insertion of "to the extent possible." Moreover, 300.66(b)(4) appears to be quite inconsistent with the requirement for future priority listing in 300.66(b)(3).

-- The references to "self contained units" or "self contained components" as discussed in the preamble (47 Fed. Reg. 10975) do not appear to be addressed in the proposed regulatory language.

-- "Planned removal" appears to be a "hybrid" form of response with some "remedial" aspects to it. It is accordingly important to specify that to the extent any private party responses are technically treated as "planned removals," the same principles expressed in §300.67(c) (generally equating determination of the extent of private-financed remedies with fund-financed remedies) will apply. It would be totally inconsistent with EPA's discussion of its enforcement policies at 47 Fed. Reg. 10978 not to include such a provision.

Similarly, rules for determining the appropriate extent of remedy (300.67(f), (g), (h), and (i)) should be followed for planned removal decisions to the extent practicable. Consideration should be given to providing timely action on planned removals, but the decisions still should be orderly. In all events, the criteria for determining the appropriate extent of remedy (300.67(j)) should apply to planned removals which are

"remedial" in nature.

§300.67(c) --

As noted in our opening discussion of general points, we fully support the thrust of this subsection, and strongly believe that the NCP would be legally defective without it. We urge EPA, however, to change the word "cleanup" in lines 6, 12, 14, and 21 to the phrases or words "provide remedial action" (line 6); "remedial" (line 12); and "remedy" (lines 14 and 21).

We assume that the use of the word "clean up" instead of "remedy" was inadvertent, for it would be wholly inconsistent with CERCLA and with the provisions of proposed 300.67(e) through (j) (which are specifically required to be addressed by 300.67(c)) to foreclose the consideration of non-cleanup alternatives (such as alternative water supplies) and or "no-action" alternatives. See CERCLA §101(23), (24), proposed NCP at §300.67(e)-(j).

We also note that an important clause appears to have been dropped from the preamble discussion on this point, and encourage EPA to correct this in the final preamble. The omission can be detected by comparing the proposed regulatory language on the same point. In proposed 300.67(c), EPA requires the lead agency to "evaluate the adequacy of cleanup proposals submitted by responsible parties or determine the level of cleanup to be sought through enforcement efforts" through use of §300.67(e)-(j). (Emphasis added.) In the preamble (47 Fed. Reg. 10978) precisely the same thought is conveyed, except the

language underscored above does not appear. We assume this must have been inadvertent, for the preamble sentence as it now reads has no grammatical integrity.

§§300.67(e) and (f) --

The distinction between "initial remedial measures," "source control" actions, and "off-site" measures, and their respective appropriateness, may not be as clear-cut in many cases as the proposal may lead one to believe. For instance, the factors listed under each may logically overlap substantially. We urge EPA to stress that decision makers not emphasize classifying actions into one of these categories at the expense of taking efficient remedial action. The important point is that all of the factors listed for all of the three "types" of measures should be carefully considered with respect to the particular circumstances of each site to properly apply the criteria of 300.67(g)-(j).

§§300.67(e)(4) --

Consideration should be required as to the condition of the containers. For initial measures, it may well be inappropriate to address fully secure and non-corroding containers.

§300.67(f)(i) --

The second sentence should be rewritten to provide that source control remedial measures may not be appropriate if most substances have migrated.

§300.67(g) --

The examples of appropriate cases for considering the "no action" alternative may erroneously create the implication that some action is appropriate in every case where there is an "appropriate engineering solution" and where action will not create a greater health or environmental danger. The NCP should make clear here that "no action" may also be appropriate where, after assessing the relative risks and the factors in 300.67(e) through (j), there is no action which will "effectively contribute to protection of public health, welfare, or the environment," as required by 300.67(h)(3).

§300.67(i) --

The "detailed analysis of alternatives" is incomplete because it ignores comparative analysis of the performance of the various alternatives.

§300.68 --

Subparagraph 300.68(a) should require that documentation be sufficient to indicate the bases for key decisions made during all phases of a response action. Information on the bases for selection of remedies, projected improvements, and costs of selected options as well as rejected options should be included.

\$300.69(b)(1)(iii) --

To make the first sentence accurate, it should state that once a portion of an aquifer has been contaminated, that portion of the aquifer cannot usually be quickly cleaned.

We believe this is an important point. The public (and decisionmakers) should not be misled into believing that contamination of any portion of an aquifer necessarily presents any real threat to other portions of the aquifer.

\$300.69(b)(1)(iv) --

Sewer relocation is a reasonable remedial option for contaminated water and sewer lines.

\$300.69(b)(2)(i)(A) --

Carbon is only one of a variety of absorbents that may be used in vapor phase systems. We suggest the wording be modified to "Vapor phase absorption." Acceptable absorbent regeneration or disposal is a necessary component of such a system.

\$300.69(b)(2)(ii)(A) --

Rotating biological disks are merely one sub-unit of the general category of conventional biological treatment methods. If there is a desire to include a separate listing of such a sub-unit, preferred wording is "supported growth biological reactors." This would include trickling filters and slow sand filters as well as rotating biological contactors.

Section 300.69(b)(2)(ii)(B)(1)

"Chlorination" should be changed to "chemical oxidation".

* * * * *

We appreciate the opportunity to comment on your proposal. We urge that you make the changes requested above and promulgate the final NCP as soon as possible so that this important program may proceed.

Respectfully submitted,

Geraldine V. Cox, Ph.D.
Vice President
Technical Director