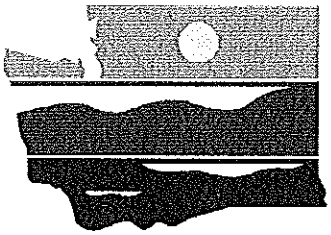

DEPARTMENT OF
ECOLOGY
State of Washington

CONCISE EXPLANATORY STATEMENT

for the Amendments to the

The Model Toxics Control Act (MTCA)
Cleanup Regulation

Chapter 173-340 WAC

APPENDIX B

Comments on the 1999 Proposal

Prepared by:

Washington State Department of Ecology
Toxics Cleanup Program

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February 12, 2001

Publication and Contact Information

This report is available on the Department of Ecology's website at
https://fortress.wa.gov/ecy/publications/SummaryPages/0109043.html

For more information contact:

Toxics Cleanup Program
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Washington State Department of Ecology - www.ecy.wa.gov

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o	Southwest Regional Office, Olympia	360-407-6300
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o	Eastern Regional Office, Spokane	509-329-3400

To request materials in a format for the visually impaired, please call Ecology's Toxic Cleanup Program at 360-407-7170. Persons with impaired hearing may call Washington Relay Service at 711. Persons with speech disability may call TTY at 877-833-6341.

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17	Laurie Valeriano	Washington Toxics Coalition	4649 Sunnyside Ave. North Suite 540E Seattle, WA 98103	E-mail	6
18	James E. Rasmussen Acting Director	Department of Energy Office of Site Services	P.O. Box 550 Richland, WA 99352	E-mail & Attach.	12
19	Michael C. Allen, P.E.	US Navy, Engineering Field Activity Northwest	19917 7th Avenue NE Attn: code 05ER-2 Poulsbo, WA 98370-7570	Letter & Attach.	47
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27	Charles R. Brown	Washington Oil Marketers Assn.	2522 North Proctor St., #7 Tacoma, WA 98406	Letter & Attach.	6
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37	Tim Hamilton Executive Director	Automotive United Trades Organization	608 Columbia SW Olympia, WA 98501	E-mail	2
38	Jim Jakubiak		(360) 573-9515	Fax	5
39	Scott F. Belcher	Beveridge & Diamond, P.C. on behalf of Air Transport Assn of America, Inc.	1350 I Street NW, Suite 700 Washington, D.C. 20005-3311	Fax	7
40	Marcia Newlands	Heller Ehrman White & McAuliffe	701 Fifth Avenue Seattle, WA 98104-7098	Fax	
	Thomas L. Aldrich Site Manager	ASARCO Inc. Tacoma Plant	P.O. Box 1677 Tacoma, WA 98401	Letter	6
41	Greg Wingard Executive Director	Waste Action Project	P.O. Box 4832 Seattle, WA 98104-0832	E-mail & Attach.	7
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43	Peter Hapke Asst. City Attorney	City of Seattle	600 Fourth Ave, 10th Floor Seattle, WA 98104-1877	Letter	4
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46	Andrew M. Kenefick	Heller Ehrman White & McAuliffe on behalf of Rayonier Inc.	701 Fifth Ave, Suite 6100 Seattle, WA 98104-7098	E-mail & Letter	15
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47	Rodger Herbst, Chair Pollution & Health Comm	Washington Environmental Council	rherbst@igc.apc.org	E-mail & Attach.	7
48	Taryn M. McCain Counsel	The Boeing Company Office of General Counsel	P.O. Box 3707, MC 13-08 Seattle, WA 98124-2207	Fax & E-mail	4
49	Grant Nelson Regulatory Coordinator	Assn. Of Washington Business	P.O. Box 685 Olympia, WA 98507-0658	Fax & E-mail	5
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51	R.T. Bremer Environmental Coord.	TOSCO Refining Company	P.O. Box 8 Ferndale, WA 98248	Letter	2
52	Douglas K. Pottratz Env. Compliance Admin.	AVISTA Corporation	P.O. Box 3727 Spokane, WA 99220-3727	Letter	2
53	Joseph A. Valenza Product Manager	Kemper Environmental Storage Tank Program	136 Main Street, Suite 320 Princeton, NJ 08540-5735	Letter	3
54	A. B. Piecka NW Environmental Mgr	Aluminum Company of America	6200 Malaga/Alcoa Hwy Malaga, WA 98828-9728	Letter	4
55	Bill Bellman	Washington Oil Marketers Assn.	3377 Bethel Road SE, Suite 107 Port Orchard, WA 98366-5608	Transcript Page 6	12/14/99 1:30 p.m.
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57	Joseph Rockne	Davis Industries	6425 - 212th Street SW Lynnwood, WA 98036	Transcript Page 13	12/14/99 1:30 p.m.
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DEC 1 5 99

Pettit Oil Company

1546 East J Street • Tacoma, WA 98421-1614
Tel 253/627-6430 • 800/532-3835 • Fax 253/627-3841

December 15, 1999

To: Dawn H.

Mr. Jim Pendowski
Washington State Department of Ecology
Toxics Cleanup Program
PO Box 47600
Olympia, WA 98504-7600

Dear Mr. Pendowski:

I am in receipt of the Dept. of Ecology's proposed Model Toxics Control Act rule amendments.

1 I want to go on the record in opposition to the proposed rule. I am a small business owner who has been and could likely be affected by the Model Toxics Control Act. The proposed rule amendments simply make cleanup costs for my business more expensive and burdensome. Moreover the rule is more complicated, less flexible and fails to consider the numerous comments of businesses like mine that were submitted over the last eleven months addressing your draft rule. I urge you to consider dropping the proposed amendments to the petroleum cleanup standards for benzene, gasoline, and xylene. By doing so you would make the rule more acceptable.

2

3 Allow me to elaborate on the petroleum cleanup standards issue. By your own admission in the rule, these changes are expected to increase the costs of cleanup for businesses like mine. However, your department has no empirical evidence showing that the new cleanup level is necessary. Instead, the department relies on a scientific model that has not been fully scrutinized by more than one independent board. Until you can demonstrate that the current soil cleanup levels are not protective of human health and the environment, by showing actual cases where these constituents have contaminated groundwater, to a degree that violates the drinking water standards, you do not have sufficient justification to modify these cleanup standards.

4 Also, I realize you have attempted to establish an alternative cleanup method in this rule. However, it is so complicated and expensive to undertake the preliminary risk assessment alternative that no small business like ours will be able to use it. This appears to have

Pettit Oil Company

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Tel 253/627-6430 • 800/532-3835 • Fax 253/627-3841

DEC 5

been developed to address the major contaminated sites around the state, rather than the majority of smaller sites that could have used an alternative cleanup method due to their location. This rule, if enacted, will leave my company with no economically reasonable alternative but to use the method A standards.

5 And now, with your proposal to move benzene standards from .5 parts per million to .1 parts per million, and change the gasoline TPH standards, I cannot see how a small site owner could afford to conduct a cleanup. An average simple site cleanup today costs tens of thousands of dollars. By your own admission this rule will increase the cost of cleanups by up to 20%. You try to justify this increase by stating that the costs will be passed on to the consumers. However, that is not the case. The gasoline business is incredibly competitive. A single penny increase in costs can result in a substantial loss of business. Thus any increase in the cost of complying with this law will be carried as a loss to me- not the consumer. It is time for all of you in Olympia to realize the economic difference between small oil businesses and major oil companies.

6 Please, drop the proposed amendments to the petroleum cleanup standards, or simply drop the whole proposed rule and start over! It would be preferable to adopt no rule on alternative cleanup methods than to adopt this rule. You have forgotten that the majority of sites in Washington are small sites, owned by small businesses or individuals, who cannot afford to see the cleanup costs increase. Without this understanding, a natural backlash will occur as a result of the financial misery that these rules will create.

Sincerely,

Norm Sather
CEO
Pettit Oil Company

cc: Charlie Brown, WOMA

Reply 1

DIVINE CORPORATION
DBA
DIVINE'S AUTO CENTERS AND TOWING

CORPORATE OFFICE • 203 W. THIRD AVENUE • SPOKANE, WASHINGTON 99201
PHONE (509) 455-8622 • FAX (509) 455-4327

DEC 17

December 15, 1999

Mr. Jim Pendowski
Washington State Department of Ecology
Toxics Cleanup Program
PO Box 47600
Olympia, WA 98504-7600

Dear Mr. Pendowski:

I am in receipt of the Dept. of Ecology's proposed Model Toxics Control Act rule amendments.

I want to go on the record in opposition to the proposed rule. I am a small business owner who has been and could likely be affected by the Model Toxics Control Act. The proposed rule amendments simply make cleanup costs for y business more expensive and burdensome. Moreover the rule is more complicated, less flexible and fails to consider the numerous comments of businesses like mine that were submitted over the last eleven months addressing your draft rule. I urge you to consider dropping the proposed amendments to the petroleum cleanup standards for benzene, gasoline, and xylene. By doing so you would make the rule more acceptable.

Allow me to elaborate on the petroleum cleanup standards issue. By your own admission in the rule, these changes are expected to increase the cost of cleanup for businesses like mine. However, your department has no empirical evidence showing that the new cleanup level is necessary. Instead, the department relies on a scientific model that has not been fully scrutinized by more than one independent board. Until you can demonstrate that the current soil cleanup levels are not protective of human health and the environment by showing actual cases where groundwater has been contaminated by these constituents to a degree that violates the drinking water standards, you do not have sufficient justification to modify these cleanup standards.

Also, I realize you have attempted to establish an alternative cleanup method in this rule. However, it is so complicated and expensive to undertake the preliminary risk assessment alternatives that no small business like ours will be able to use it. This appears to have been developed to address the major contaminated sites around the state. Rather than the majority of smaller sites that could have used an alternative cleanup method due to their location. This rule, if, enacted, will leave my company with no economically reasonable alternative but to use the method A standards.

And now, with your proposal to move benzene standards from .5 parts per million to .1 parts per million, and change the gasoline TPH standards, I cannot see how a small site owner could afford to conduct a cleanup. An average simple site cleanup costs tens of thousands of dollars. By your own admission this rule will increase the costs of cleanups by up to 20%. You try to justify this increase by stating that the costs will be passed on to the consumers. However, that is not the case. The gasoline business is the scientific model for changing the current standards has not been independently reviewed by any scientific body other than one affiliated with the department on this issue. You should demand that the model be independently reviewed before relying on it to set these new standards.

Ecology still refuses to fully investigate the Lawrence Livermore Lab's study or any other studies that indicate that certain petroleum constituents do not pose a threat to groundwater and therefore should

not be so heavily regulated. In their environmental impact statement, they note the study's existence, but state that it does not apply here. You should demand that they not adopt the benzene and TPH standards until they utilize the testing procedures used in the Livermore Study.

13 In April of 1999, a study by Ecology and the State Department of Health provided an analysis of about 160 contaminated wells throughout Washington. Of those, only five(5) were contaminated by gasoline. It is worthy of note that the cleanup levels for the hazardous substances causing contamination to the other 155 wells have not been changed in the proposed rule. The cleanup level for the petroleum constituents contributing to only 3.2% of the contaminated wells, however, has been singled out for more stringent corrective actions-with the biggest economic impact on small businesses. If there is no justification for changing the cleanup levels for the sources of 97% of the contamination of wells, there can be no justification for imposing a much more stringent cleanup level on the source of only 3.2% of the contamination.

Sincerely,

James Redmon
Divine Corporation

Reply a

RAY F. SNYDER CO., INC.
PETROLEUM PRODUCTS DISTRIBUTOR
672 SEVENTH AVENUE (P.O. BOX 497)
KIRKLAND, WASHINGTON 98083
425-822-8281
FAX 425-827-0920

DEC 2 1 1999

December 16, 1999

Mr. Jim Pendowski
Washington State Department of Ecology
Toxics Cleanup Program
P.O. Box 47600
Olympia, WA 98504-7600

Dear Mr. Pendowski:

I have seen the Department of Ecology's proposed Model Toxics Control Act rule amendments. And I am writing to voice my opposition to the proposed rule.

Ray F. Snyder Co. Inc. is a petroleum distributor that supplies gasoline to over 55 independent gasoline retailers in the King, Pierce, and Snohomish Counties. Each of these retailers either owns or leases their facilities from individuals or family owned companies. This means that the responsibility of cleanup sits squarely on the shoulders of small business owners or individual property owners.

Since the December 22, 1998 upgrade deadline has come and gone, all of our retailers have gone through the necessary hoops to obtain the UST licenses necessary to stay in business. These upgrades included removing old piping and replacing/relining USTs. During these upgrades the soils were remediated using the current guidelines at the time.

14 It's not fair to "move the target" after the asphalt and concrete has covered the upgraded petroleum system. When buyers of these independent gasoline stations look for financing, the banks will refer to the Model Toxics Control Act. Then the stations will be unsalable because the rules have changed.

Let's face it. All of these gasoline sites are dirty. The very minute you put gasoline in the tanks at a virgin site, the soil is at risk for contamination. Even minor spills on the gasoline islands seep through the cracks in the pavement and go into the soil. The best systems in the world are not perfect when it comes to containing petroleum products.

15 We and our customers are not "big oil". None of us have deep enough pockets to live up to the proposed rule changes for benzene, gasoline and xylene.

Finally, you need to understand that there is an intense battle between the "big oil" suppliers and independent marketers. Big oil is employing several marketing initiatives throughout the country that is designed to eliminate and/or control the growth of independent marketers. We don't need help from the Department of Ecology to further the big oil cause.

Ray F. Snyder Co. and our retailers have truly benefited from the DOE field people over the last few years. The Eastgate office folks have been even handed and very helpful in guiding our retailers through the December 22, 1998 deadline. For that, we are greatful.

Sincerely,

Lowell Rottrup

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DENNIS PETROLEUM COMPANY, INC.

December 20, 1999

Mr. Jim Pendowski
Washington State Dept. of Ecology
Toxic Cleanup Program
PO Box 47600
Olympia, WA 98504-7600

Dear Mr. Pendowski:

I have just received the new Dept. of Ecology Model Toxic Control Act Rule Amendment, and I am sorry that I missed the hearings in Seattle so I feel compelled to write you my thoughts.

16 First off, we work in an extremely competitive market place that leaves us no margin of error in any of our decisions we make. The only item of value in our business is the land and facility that we must make our income from, and there is no responsible person that I know in this industry who wants to destroy his retirement by having dirty soil. Therefore, the massive changes in the Model Toxic Control Act can singly destroy our ability to sell our business or land.

17 We have no desire to ever contaminate the water or soil we live on and depend on, but your proposal to move the benzine standard from .5 parts per million to .1 part per million and change the gasoline T.P.H. standard is simply unacceptable to me.

18 I am in the process of cleaning up two sites and have spent so much money to this state and have much more to spend, I still haven't reached the present standard. At your own admission, the rule will increase the cost by 20% and more frustrating than that is we don't know how to get the soil that clean.

19 I believe it is a lot smarter to get all sites cleaned to a standard that can be reached than to have people walk away from sites they know they can't reach the standard no matter how much money they spend. If you put things in prospective, this will simply make more small businessmen go bankrupt and the state of Washington would have to incur the expense.

Reply 4 Page 1 of 2

1125 80th Street SW • Everett, Washington 98203
(425) 353-9701 • Toll Free (800) 562-9882 • Fax (425) 355-1240

20 I want you to know I believe the .05 parts per million (which was in the original draft) was fair, but this new arbitrary change lacks any facts to support or any ability to clean ourselves up to this level. I have worked with many of your field people and have always been impressed with their desire to clean up the problem and keep the impact of the small businessman to a minimum. That is why I was very surprised to read these new rules.

I hope that you will reconsider your position on this issue.

Sincerely,

Paul C. Dennis

PCD:sa

cc: Charlie Brown
Bill Bellman

DEC 2 6

MARSH

December 27, 1999

Mr. Jim Pendowski
Department of Ecology
Toxic Cleanup Program
P.O. Box 47600
Olympia, WA 98504-7600

RE: PROPOSED AMENDMENTS, MTCA CLEANUP REGULATION

Dear Mr. Pendowski:

This letter is in reference to the proposed cleanup levels for petroleum included in the proposed amendments, the increased cost of cleanup that will result from those far more stringent standards, and the impact on liability insurance.

I have been a broker involved with providing pollution liability insurance coverage for petroleum marketers for almost 30 years. During that period, I have represented several different insurance companies. My involvement in the field also includes my appointment by former Governor Booth Gardner, as a member of the Advisory Committee established to provide advice and oversight of the Pollution Liability Insurance Agency and its' programs.

21 I can tell you from first-hand knowledge the tremendous savings that small, family-owned petroleum businesses have experienced because of the PLIA reinsurance program When PLIA's insurance became available in January 1991. My clients saw immediate premium savings of about 60%. Since that time, insurance premiums have continued to go down. The savings in insurance premiums has been the difference for many small, especially rural, businesses in being able to stay open and provide petroleum products to the motoring public, to farm enterprises, emergency services and local governments. Today, I am proud that Washington dealers pay pollution liability insurance rates that are among the lowest in the country. Those low insurance rates and the very existence of many small businesses throughout the state are threatened by the amendments proposed by Ecology to change the cleanup levels for petroleum products!

An MMC Company

21 cont.

It is obvious from reviewing the proposed amendments, that Ecology has not considered the impact of the amendments on insurance costs and availability of the state and federal required insurance coverage.

The proposed cleanup levels for benzene, gasoline, and other petroleum products are far more conservative than those currently in place. The result is the cost of the cleanup of petroleum will increase, more soil will have to be excavated, more bioremediation products must be used, equipment used for treatment must be in place longer at a higher cost, cleanups will take longer and time costs money.

The Small Business Economic Impact Statement includes an estimate by Ecology that the cost of cleanup of contamination from petroleum will increase 20% because of the proposed cleanup levels. PLIA estimates that the increased cost will be at least 38% for soil and more for treatment of groundwater. My money is on PLIA as the estimate of increased cost. I have seen first-hand the accuracy of PLIA's work. The Ecology offers no basis or justification for its' estimate of 20%.

Whether Ecology is correct with its' estimate of a 20% cost increase, or PLIA is correct with its' higher estimate, those are significant cost increases! Who is to pay for those significant increases in costs? The answer is the insurance company providing the pollution liability insurance coverage!

Herein lies the problem Ecology has failed to consider. In order to remain financially solvent, an insurance company must charge the premiums necessary to pay for those costs of resolving claims. . . whether for an automobile accident, a house fire, or a release from an underground petroleum storage tank. If the cost for the cleanup of a potential release from a tank goes up (whether 20% or 38%), the insurance company must charge higher premiums to ensure that funds are sufficient to pay the increased costs involved in resolving claims.

The bottom line is that if these proposed cleanup levels are adopted, the cost of cleanup will increase significantly and the cost of insurance to pay for resolution of claims will go up! I cannot, at this time, give an exact estimate of how much insurance premiums will go up. The companies I deal with are currently reviewing the proposed amendments and are conducting actuarial studies to determine the amount premiums must be increased in

21 cont. order to pay for claims under the proposed cleanup levels. It is quite possible that insurance premiums could be doubled if these cleanup levels are adopted.

An equally serious problem that will likely result from the adoption of stricter cleanup levels is the availability of pollution liability insurance. When PLIA was established in 1989, there was only one insurance company that would provide the coverage in Washington. The other companies either pulled out because of uncertainty over cleanup levels and procedures, or foundered financially and were no longer willing to take on the risk of insuring petroleum storage tanks. Today, PLIA reinsures three companies and other companies are also active in the state. If the cost of cleanup increases significantly, premiums will go up and it is highly likely that insurance companies will take a fresh look at whether it is in their bet interests to try to do business in Washington. It is not in the least bit far-fetched to draw a direct parallel with the current state of individual health care coverage in Washington today - - there simply is none available, except under unusual circumstances.

Perhaps, now you can understand the basis of my previous statement that the proposed cleanup levels threaten low insurance rates and the very existence of many small businesses throughout the state. Low pollution liability insurance premiums have made the difference in many small businesses continuing to sell gas, particularly in rural areas. If the proposed cleanup levels are adopted, the cost of insurance will go up and many of these small operators will have to stop selling gas. If they stop selling gas, most will be completely out of business in a very short time.

22 Why is Ecology proposing these severe cleanup levels? Is there evidence that the current cleanup levels are not correct and do not provide protection of the environment? In my experience, the answer to the second question is that there is no evidence or justification for increasing the cleanup levels. I have discussed the matter with our claims manager. Our insurance companies have about 100 claims throughout the state that have been cleaned up or are currently being cleaned up. We are not aware of any problems with any of the claims. As a matter for fact, in almost every case, Ecology personnel are involved in monitoring the progress of claims. Not once, has one of the Ecology personnel expressed concern that current cleanup levels are not adequate.

23 I urge Ecology to withdraw the proposed benzene, gasoline and TPH cleanup levels for Method A and return to the existing standards. If this is not done, the potential impact on many small businesses will be severe!

Sincerely yours,

Lionel C. Greenwood
Senior Vice President.

Km1

pc: Dan Silver, Deputy Director, DOE

Floyd & Snider Inc.
Strategy and Technical Solutions for Contaminated Properties
83 South King Street Suite 614 Seattle, Washington 98104 206.292.2078 Fax 687.7867

RECEIVED
JAN 0 2000
ECOLOGY

January 3, 2000

Trish Akana
Rules Coordinator
Toxics Cleanup Program
P. O. Box 47600
Olympia, WA 98504-7600

Subject: Comments on Model Toxic Control Act Proposed Rule Making RCE 34.05.320

Dear Ms. Akana:

I am writing in response to the Model Toxic Control Act Proposed Rule Making RCE 34.05.320. As a professional chemist, I have specific concerns regarding how scientific data are being incorporated into the Rule.

24 Several tables are published as part of the Rule that would be more appropriately used as guidance. This would more accurately reflect the way MTCA currently works, using the CLARC II database as guidance, rather than rule. The CLARC II database includes a large number of chemical, physical, and toxicological parameters. This method has specifically been employed to allow Ecology and the regulated community to easily incorporate new scientific values for these parameters, many of which are only poorly studied to date. Instead of constraining these parameters to values at a specific publication date, the current Rule defers to MTCA guidance with default parameters and a mechanism for incorporating new information.

25 The proposed MTCA currently includes table 747-2 that lists Koc values for several chemicals. This table does not reference the source of the values, whereas the CLARC II database contains very clear references for values – a critical component of good science. The absence of references, combined the with rigidity of including the values as part of the Rule, is especially problematic since several of the values in the table seem to differ greatly from published values. For example, Table 747-2 shows that pentachlorophenol has a Koc value of 409. This value is quite different from the EPA's Office of Drinking Water guidance that suggest Koc for pentachlorophenol in sediments between 3000 and 4000. It is also quite different than the Koc (log Koc=4) calculated using in accepted estimation methods (from the Handbook of Chemical Property Estimation Methods, Lyman et al, published by American Chemical Society, Washington D. C., 1990) and the log Kow of 5 given by the EPA Treatability Study Database, Version 6.0.

26 Publishing chemical and physical "constants" in the Rule can be problematic due to the variation in the literature regarding such "constants." For example, the Henry's Law constant for vinyl chloride is provided in some sources as a value of 1 and others as a value of 100. It would seem more reasonable to provide acceptable ranges of such values, rather than submit one value that is not referenced.

These ranges would be most prudently provided in guidance documents rather than the Rule, otherwise new scientific data may cause the Rule to lose credibility and become scientifically indefensible.

27 I appreciate that site-specific calculations and models are finally being accepted. This is a positive improvement from the 'rule of thumb' method, using a factor of 100 for the protection of groundwater. However, these calculations lose merit when the Rule insists that unreasonable values must be used for chemical-specific criteria such as Koc.

In closing, I would stress that the Rule is only as useful as it is defensible. When Ecology provides unreasonable values or definitions in the Rule that cannot be held as scientifically defensible, then the entire Rule is weakened. The proposed Rule should be closely scrutinized by Ecology and the environmental community at large, to ensure that it is defensible before it is implemented into law.

Sincerely yours,
Floyd & Snider Inc.

Dr. Jennifer Holmes
Senior Scientist

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JAN 10 2000

January 5, 2000

James J. Pendowski
Washington State Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Re: Proposed MTCA Rule Changes

Dear Mr. Pendowski,

I have recently reviewed the proposed changes the Model Toxics Control Act (MTCA) and have several concerns.

28 Based on my review of the proposed changes, I feel that the revisions fail in their intended purpose which was to create risk-based cleanup standards which would have made cleanups scientifically and economically easier.

29 Second, I feel that the Department's refusal to review available scientific and anecdotal evidence in proposing more stringent Method A cleanup levels was arbitrary and capricious and has resulted in proposed cleanup levels that may be scientifically and economically impossible to implement. Furthermore, I belive that the Department has failed to articulate an intelligible principal upon which to base their proposed standards.

30 Finally, I believe that the Department's attempt to "grandfather" sites which have already undergone cleanups which meet the current Method A levels either does not protect human health at or near those sites or unfairly discriminates against site owners who have not already undergone cleanups by forcing them to meet the new, higher, standards.

31 I. The Risk Based Alternative Cleanup Levels

One of the initial purposes of examining and revising the MTCA was to create a regulatory scheme which would allow entities responsible for cleaning up contaminated sites the option of using "risk assessments" in determining "cleanup up levels." According to one of the Department's fact sheets, "It is intended that these changes [to the cleanup rules regarding risk assessments] will make the business of environmental cleanups fairer, easier to understand, more flexible, less ambiguous and less expensive." With respect to petroleum cleanups this is simply not true.

The Department's fact sheet on petroleum cleanups acknowledge the impossibility of using risk based criteria at a petroleum cleanup. According to that fact sheet, "[m]ost individual petroleum hydrocarbon constituents do not have health risk data available for making risk-based determinations." It can be presumed from this sentence that, at least from the Department's view, a risk based cleanup at such a site would require the development or discovery of health risk data for petroleum hydrocarbons.

32 It is economically impossible and impractical for the majority of petroleum marketers facing cleanups to conduct site specific risk assessments when establishing cleanup levels and cleanup plans. Most petroleum marketers are small, family owned businesses which will lack the resources to conduct a risk analysis. Therefore, they will undoubtedly adopt the Method A levels when conducting cleanups.

33 II. Method A Cleanup Levels and Petroleum Cleanups

The proposed changes to the Method A cleanup levels were arrived at by the Department in an arbitrary and capricious manner without regard to the scientific data that is currently available. Despite repeated requests to do so, the Department has refused to look at and comment on the conclusions reached by the Lawrence Livermore National Laboratory in their study of California's regulatory framework and petroleum cleanups done under that scheme.

According to that study, ". . . fuel hydrocarbons (FHCs)[at their current levels] have limited impacts on human health, the environment, or California's groundwater resources. Furthermore, the costs of cleanup of LUFT FHCs are often inappropriate when compared to the magnitude of the impact on groundwater resources." The Department continues to ignore these scientific findings.

34 In addition to their failure to review the scientific data cited above, the Department has failed to take the opportunity to study or review the more than 8000 sites which have been cleaned up in the past ten years in this state. According to the Department's own Peter Kamet, they have looked at only ONE petroleum contaminated site. (Mr. Kamet made this comment at the public hearing held in Seattle on December 14, 1999.) I cannot understand why the Department would fail to take the opportunity to look at actual sites which have undergone actual cleanups.

35 Finally, the Department's actions in setting and resetting the benzene levels illustrate the arbitrary and capricious nature of their decision making process. In 1998, the Department proposed lowering the acceptable benzene level in soil from .5 parts per million to .02 parts per million. This proposal resulted in many letters and comments which apparently caused the department to revisit their data. On July 6, 1999 the acceptable benzene level was moved back to the original .5 ppm. However, and without any explanation, on July 15, 1999 the standard was again changed; this time to a more stringent .1 parts per million.

36 II. Grandfather clause

Since MTCA's enactment over a decade ago, several thousand sites in Washington state have undergone cleanups which meet the current Method A levels. Those individuals and businesses which have taken the time and spent the money on these cleanups undoubtedly relied on those levels when cleaning up their sites. By changing the Method A levels, the Department is telling the owners of these "cleaned" sites that, while their sites may not longer be "clean," they would not be required to meet the new Method A levels. This sends a terrible message to the regulated community, its neighbors, potential purchasers and lenders.

On the one hand, the Department is saying that the new cleanup levels are necessary in order to be protective of human health and the environment. On the other hand, they are telling some landowners that, since you have cleaned up your site, even though it is not clean enough to meet the new "scientifically supported" level, you do not need to clean your site any further. But what of a potential purchaser? Would the purchaser be required to reopen the cleanup and clean the site up to the new level? What of the local population? Would this site be unhealthy because it does not meet the new standards?

If the new Method A levels are necessary to protect human health and the environment and can be supported by the evidence, then all sites should have to meet these standards.

III. Conclusion

Quite simply, the attempts being made by the Department of Ecology to refine the Model Toxics Control Act lack any practical significance. There has been no evidence that any new standards are necessary to protect human health and the environment. The Department (by its own admission) has failed to create a workable risk-based cleanup regime for petroleum contaminated sites. Finally, by grandfathering sites which have already undergone cleanups, the Department is either telling the neighbors of those sites that may not have been cleaned up to a level which is protective of their health or the Department is telling the regulated community that the new standards are not necessary to protect human health, but you must meet them anyway.

The Department should withdraw its proposed amendments to MTCA and let the regulated community continue in its current cleanup efforts.

Sincerely,

Joseph L. Rockne
Operations Manager
General Counsel

cc: Dan Silver, Department of Ecology

Tom Hemingway, Washington Oil Marketers
Bill Bellman, Washington Oil Marketers
Gerry Ramm, State PMAA Director

Reply 7

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RECEIVED
JAN 1 2000
ECOLOGY

January 11, 2000

Ms. Trish Alicia Akana
TCP Rule Revision
Washington Department of Ecology
P.O. Box 47600
Olympia, WA 98504

Re: Comments on the Proposed MTCA Rule Amendments

Dear Ms. Akana:

On behalf of Tosco Marketing Company, this letter provides general comments regarding the Model Toxics Control Act (MTCA) rule amendments proposed by the Department of Ecology (Ecology) and currently under public review. The Tosco Marketing Company (Tosco) owns or operates approximately 180 current or former gasoline retail sites that are potentially impacted by the proposed amendments.

The November 1999 Ecology fact sheets that accompanied the release of the proposed amendments state: "It is intended that these changes will make the business of environmental cleanups fairer, easier to understand, more flexible, less ambiguous and less expensive. Upon reviewing the proposed amendments, it's not apparent to Tosco how these revisions have met the stated objectives. We believe the proposed amendments are more complex, afford less flexibility and will result in more expensive cleanups than the current rule. The following comments and questions reflect some of Tosco's concerns with these amendments; we request Ecology's consideration and response to these questions:

37 1. The priority of MTCA should be the protection of human health and the environment. Did Ecology undertake any historical evaluation of corrective action completed in the state to determine if the current rule and policies were insufficient for protecting human health or the environment? If so, please provide the specific case examples.

38 2. What is the basis for the selection of a CERCLA screening model (over all other models available) to select the revised Method A cleanup standards? Were any other models tested?

39 3. The remedy selection process described in the proposed amendments is clearly biased toward active remediation as opposed to selecting cleanup actions based on protection of human health and the environment. WAC 173-340-350(9)(e)(ii) states that "[c]leanup actions shall not rely primarily on institutional controls and monitoring where it is technically possible to implement a cleanup action alternative that utilizes a more permanent cleanup action for all or a portion of the site." Why can't a cleanup action based on natural attenuation or institutional controls be judged by the same remedy selection standards, including protectiveness and the long-term effectiveness, used to judge other cleanup actions?

40 4. Ecology states in the November 1999 Ecology fact sheets that the amendments contain a risk-based approach based on the nationally recognized ASTM Risk-Based Corrective Action (RBCA) model. The ASTM RBCA model contains three elements that are largely missing in the proposed amendments: allowance for a reasonable assessment of potential exposure, cleanup levels based on complete exposure pathways, and a tiered-system for setting cleanup levels with significant flexibility at the higher levels. Under the ASTM RBCA process, it is anticipated that cleanup levels at many, if not most, sites will be based on Reasonable Maximum Exposures (RMEs) other than groundwater ingestion. The proposed MTCA amendments contain only a very limited ability to establish cleanup levels based on non-drinking water RMEs. Further, establishing cleanup levels based on non-drinking water utility is technically complex. For example, the establishment of cleanup levels for nonpotable groundwater requires the use of a site-specific risk assessment. By comparison, the ASTM RBCA provides for Tier 1 cleanup levels for both soil and groundwater based on a variety of exposure pathways including ingestion, direct contact, and transport to other media. This results in a system that is more useable for all sites. The three tiered-system for establishing cleanup levels in the proposed amendments is not comparable to the ASTM RBCA process. Why was the ASTM RBCA model not adopted? The Oregon Department of Environmental Quality has recently implemented a straightforward process for RBCA. Was Oregon's RBCA program considered by Ecology? If no, why not? If yes, why did Ecology elect not to model this program?

41 5. WAC 173-340-440(4) states that institutional controls will be applied when hazardous substances remain at the site at concentrations which exceed Method A or B cleanup standards, or the cleanup standard is established using Method C, or conditional points of compliance are established, or the cleanup level is based on an assumption of land use other than residential such as industrial or commercial. How can a cleanup of the average UST site (generally zoned as commercial) be completed without the requirement of a deed restriction? Depending on property ownership or the terms of property transfer, an institutional control such as a deed restriction may not be an acceptable outcome.

Tosco Marketing Company appreciates the opportunity to comment on the proposed amendments. We look forward to Ecology's responses and an opportunity to work with Ecology on revisions to this rule. Please contact me at 206-706-2341 should you have any questions regarding these comments.

Sincerely,

Timothy D. Johnson
Project Manager

Reply 8

Colony Management Services, Inc.

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RECEIVED
JAN 19 2000
ECOLOGY

January 12, 2000

Department of Ecology
Attn: Trish Akana
MTCA Rules Revision
300 Desmond Drive
Lacey, WA 98504-7600

Re: **Proposed Amendments to MTCA Cleanup Regulations**

Dear Ms. Akana:

42 This letter is in reference to the proposed changes to the MTCA Cleanup Regulations and the probable consumer impacts that will result from these changes.

The Colony Group consists of three insurance companies, including Front Royal Insurance Company, Colony Insurance Company and Preferred National Insurance Company. The Colony Group has been writing underground storage tank liability insurance since 1989, and in fact Front Royal Insurance Company was formed specifically to write this coverage. We write UST insurance in Washington with Colony Insurance Company and currently insure over 3,300 underground tanks in your state.

42 cont. To demonstrate the impact of the proposed changes, we must first describe how the current regulations affect our pricing. In determining premiums for this line of business we add the projected costs: corrective action costs, monitoring, legal defense costs, third party bodily injury and property damage losses, underwriting expenses, loss adjustment expenses, and transactional expenses such as agents' commissions.

Corrective action costs represent approximately two-thirds of the total loss costs, and any increase in these costs must result in a direct increase in premiums to our insureds. We believe that the proposed MTCA changes will result in significantly increased costs in several different areas.

43 First, corrective action costs will rise due to the generally stricter cleanup standards for soil and groundwater cleanups. In 1998 (1999 data are not yet available) our per-claim cleanup costs ranged in cost from $45,000 to $445,000, with a mean of $161,000. The Ecology Small Business Impact Statement estimates a 20% increase in cleanup costs, which will result in an average increase of $32,200 for each claim. The Pollution Liability Insurance Agency estimates an increase of 30% for soil cleanups to 58% for groundwater cleanups which will result in an average increase of $48,300 to $93,380 for each claim. Since the majority of our claims involve groundwater, the latter figure appears to be most appropriate.

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44 Second, loss adjustment expenses (LAE), such as the costs of local engineering consultants we use to assist us with the administration of claims, will increase since the cleanups will take much longer to complete. Our average LAE in 1998 was $11,000 per claim, resulting in average increases of $2,200 (at 20% increase) to $6,380 (at 58%) each claim.

45 Third, sites that were previously closed may be subject to re-review by Ecology. Although there is a grandfather clause in the proposed regulations, a provision allows Ecology this authority if they believe that their previous site closure was not adequately protective. This is likely to result in prior claimants suing for additional cleanup of their properties. This presents us with new liabilities that are not quantifiable and for which premiums were not charged, with the result that current and future insureds must pay the additional cleanup costs and expenses from the previously closed claims.

46 Fourth, because cleanups in many cases will take significantly longer than they currently do, third parties whose properties are contaminated may be more likely to sue for the diminution of their property values. This too presents us with liabilities that are not quantifiable.

47 Fifth, the 20% to 58% increases in corrective action costs do not include claims for which corrective action currently is not required, i.e. UST sites having contaminant levels that are currently below MTCA action levels. The proposed cleanup levels will result in an increased number of cleanups and long term monitoring.

48 In summary, although it is not possible to predict the full increase of future (and retroactive) costs associated with the proposed changes, we predict that average claims costs will increase from 30% to 75%, which translates to an average per-claim increase of $48,300 to $120,750. These are sums that must be passed along directly to tank owners and operators in Washington.

Further, all Washington state claims we have handled in the past and are currently handling are subject to the oversight of the Department of Ecology, and we believe that protection of human health and the environment has been and will continue to be achieved with the involvement of Ecology with the current regulations in place.

As such, we highly recommend that the existing cleanup standards for petroleum products be retained.

Sincerely,

Arthur Davis, AU
Assistant Secretary
Environmental Division

reply 9

cc: Dan Silver
Deputy Director
Dept. of Ecology

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SENT this to program, it is the original

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RECEIVED

JAN 13 2000

DEPARTMENT OF ECOLOGY
OFFICE OF DIRECTOR

January 12, 2000

Thomas Fitzsimmons, Director
Washington State Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Re: Comments on the MTCA Proposed Rule Amendments

Dear Mr. Thomas Fitzsimmons:

We appreciate the opportunity to comment on the Proposed Rule Amendments, Model Toxics Control Act (MTCA), Chapter 173-340 WAC. This letter provides recommendations regarding new requirements for the assessment of dermal exposure to contaminants in soil that have been included within the proposed amendments. The areas within the proposed rule amendment that are addressed in this letter include Section 740, Subsection 3 and Section 745, Subsection 5 are also included. These recommendations are derived from the work of a multi-agency, technical team that assisted your agency in the development of a framework used to incorporate dermal-soil exposure into the proposed rule. In addition to the recommendations provided at the end, this letter also includes background on members of the technical team, a response to concerns raised by the MTCA Science Advisory Board, a summary of policy issues and comments on the Draft Environmental Impact Statement.

Background

The conception, development and incorporation of the dermal exposure pathway in the MTCA Proposed Rule Amendments was a collaborative effort of one federal and two state agencies. The technical team was composed of Marc Stifelman and Marcia Bailey (U.S. Environmental Protection Agency, Region X), Rob Duff (Washington State Department of Health) and Craig R. McCormack (Washington State Department of Ecology).

Consideration of current and scientifically defensible technical information was assured by the team's experience with the dermal route of exposure and its efforts to coordinate with the national EPA Dermal Exposure Workgroup and key researchers from the University of Washington. Marcia Bailey has developed guidance for Region X to quantify dermal exposures to organic compounds on RCRA sites[1], and she and Craig McCormack developed the dermal approach for assessing direct contact with petroleum-contaminated

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soil that was incorporated into the MTCA Proposed Rule Amendments. Marc Stifelman has applied methodology for assessing dermal exposure in risk assessments at Superfund sites in Region X in coordination with the national EPA Dermal Workgroup and the University of Washington, Department of Environmental Health. Mr. Duff studied the dermal uptake of soil contaminants during his graduate thesis work under Dr. John Kissel and has applied this experience in various public health assessments at hazardous waste sites.

Dr. Kissel is a professor at the University of Washington who was consulted during the development of the dermal-soil exposure pathway for incorporation into the proposed amendments. Dr. Kissel has conducted extensive research on this topic that includes measurement of percutaneous absorption of contaminants from soil and sediment, field measurements of soil adherence to skin and surveys of behavior that affect soil adherence to skin. His research is cited in various state and federal guidance documents including; Dermal Exposure Assessment: Principles and Applications Interim Report [2], the Exposure Factors Handbook [3], and Risk Assessment Guidance for Superfund Supplemental Guidance for Dermal Risk Assessment (draft in progress). Many of Dr. Kissel's publications are referenced in this memo and included as attachments. [4,5,6,7,8,9,10]

Science Advisory Board Involvement

The Department of Ecology Science Advisory Board (SAB) was presented with the recommendations of the technical team regarding the rationale and scientific justifications for including dermal-soil exposure into MTCA. The SAB identified some technical issues and expressed some concerns regarding assessment of the dermal route. Some of the SAB concerns along with the technical team's responses are given below.

49

1. *Does the quality and sufficiency of technical information used for the development and incorporation of the dermal exposure pathway into the proposed amendments meet Ecology standards?*

As detailed in the attached memos, support documentation for the evaluation and inclusion of the dermal exposure pathway in the proposed amendments meets and exceeds technical standards for peer reviewed guidance, documentation and technical information. [11,12,13] Guidance on how to incorporate the dermal exposure pathway into risk assessments has been available from U.S. EPA since 1992.[2] In recognition of the additional information which has become available on this subject since then, EPA's Superfund program is about to release supplemental guidance for risk assessment based on dermal contact with contaminated soil and water. Many state agencies and EPA regional offices regularly include dermal exposure in risk assessments.[14,15] The RCRA program at EPA published guidance two years ago that incorporates dermal exposure into cleanup level calculations.[1]

50

2. *Are the uncertainties associated with the information for evaluating the dermal exposure pathway so large as to preclude the inclusion of the dermal exposure pathway in the proposed amendments?*

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Regulatory decisions have been and will continue to be made despite uncertainties in the technical information base used by federal and state agencies. An uncertainty can result in either an overestimate or an underestimate of risk, but inclusion of scientifically sound methods to estimate risks from dermal absorption should reduce the overall uncertainty of a risk assessment. When an uncertainty is caused by a knowledge gap, policy requires default assumptions intended to be protective of human health.

Exposure from direct contact to contaminants in soil occurs via both the oral and dermal routes. Uncertainties exist when evaluating either of these routes and are associated with both the *exposure* and *toxicity* components of the health risk assessment process. Important uncertainties associated with the dermal-soil pathway include chemical-specific measures of absorption, measures of soil adherence and lack of toxicity data specific to the dermal route. The following is a discussion of specific types of uncertainties associated with dermal-soil exposure contact and their potential ramifications.

⇨ Chemical-specific dermal absorption fractions

Current methods used to quantify dermal exposure to soil require an estimate of the fraction of the available dose absorbed through the skin. Chemical-specific absorption fractions (ABS) are generated from *in vivo* and *in vitro* experiments often performed over a 24-hour exposure period. Use of 24-hour ABS values will likely overestimate dermal absorption from soil since most "real world" exposure durations are expected to be less than 24 hours. A field study demonstrated that soil adhering to the skin of groundskeepers returns to baseline prior to the start of each workday.[9] This finding is supported by a recent telephone survey indicating that approximately 95% of respondents reported washing their hands right away following yard work or gardening activities.[6]

Considering this discrepancy, adjustment of the ABS value to reflect the difference between *assumed* and *experimental* exposure durations should be considered. Recent presentations by Dr. Kissel suggest that a linear extrapolation of the ABS value could be used in concert with a soil adherence *rate* that would make use of recent data compiled on behavioral impacts affecting soil adherence to skin.[16,17] Such an approach would address the fact that the soil adherence and ABS parameters vary with time. However, the small amount of kinetic data available indicates that dermal absorption of contaminants from soil is not linear. The uncertainty introduced by assuming a linear ABS curve could be dealt with using a distributional assumption for this parameter. Ideally, soil adherence should also be expressed as a distribution to account for the variability of this parameter with respect to differing behavior and activities.

As a conservative approach, the technical team recommends that default soil cleanup levels use 24-hour ABS values without adjustment. However, use of sub-24-hour ABS values or linear extrapolation of the ABS value should be considered under a modified Method B or Method C assessment.

⇨ Soil adherence

Quantitative estimates of dermal absorption of chemicals from soil assume that all of the soil adhered to the skin is in contact with the skin. If a thick layer of soil adheres to the

52 cont. skin, then only the thin layer of soil in contact with the skin would transfer contaminants directly to the skin. Soil particles that are overlaid on other soil particles would have a reduced potential to transfer chemicals through the skin. The amount of soil per area of skin (soil loading) that achieves complete coverage without layering is referred to as a monolayer. The average soil loading assumption of 0.2 mg/cm^2 proposed in this rule revision is well below monolayer and is assumed to be evenly dispersed over the exposed skin area. Therefore, layering is not an issue under these assumptions.

It should be noted that ABS values derived from experiments using a soil loading in excess of monolayer will underestimate *percent* dermal uptake.[5] Since many of the ABS values published in the literature were obtained using near monolayer loadings, corrections to the ABS with respect to this issue are often not necessary. However, corrections to the ABS value should be considered when monolayer coverage is significantly exceeded. Any corrections to the ABS must consider that monolayer coverage is a function of both soil loading and particle size.

53 ⇨ **Toxicity as a function of exposure route**

In addition to the uncertainties associated with *exposure*, there are uncertainties associated with the *toxicity* of dermal route exposures. The vast majority of toxicity data originates from studies utilizing the oral (ingestion) route. Route-to-route extrapolation from toxicological studies based on ingestion brings additional uncertainty into the dermal risk equations. Oral exposure involves gastro-intestinal absorption followed by the potential for first-pass liver metabolism prior to entering the bloodstream. Compounds absorbed through the skin will avoid any first-pass liver metabolism. While biotransformation may also occur in the skin, the enzyme systems of the liver have an increased ability to alter the ultimate structure of the chemical. Since biotransformation can increase or decrease the toxicity of the original chemical, uncertainties associated with oral-to-dermal extrapolation of toxicity data could result in underestimates or overestimates of risk. In addition, the lack of toxicity data regarding the skin as a target organ following dermal exposure carries uncertainty that could underestimate of risk.

54 **Policy Issues**

The December 1996 Report by the Policy Advisory Committee (PAC) to the Department of Ecology recommended that the dermal exposure pathway be included in cleanup level calculations under certain constraints.[18] The PAC recommended that the dermal route be considered only for soil and only for modified Method B or C approaches when "proposed changes to the standard [Method B or Method C] equations or default values would result in soil cleanup levels that are high enough that dermal contact could become a significant potential exposure pathway". This is the current language used in the proposed amendments. It is useful to note that this restriction did not apply to rule amendments involving total petroleum hydrocarbons (TPH). Development of TPH cleanup methods was left to the TPH Project Oversight Group (POG). The POG derived equations for use in calculating risks from direct contact with TPH-contaminated soil that incorporated both ingestion and dermal contact. This methodology was incorporated into the rule amendments as the default manner in which to evaluate the direct contact pathway for soil

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in Methods B and C, whether standard or modified. It is an approach that the technical team endorses.

54 cont.

The technical team recognizes that the decision to constrain the dermal exposure pathway, for contaminants other than TPH, is within the administrative and managerial prerogative of Ecology. The technical team articulated its opposition to the PAC's recommended constraints on the inclusion of the dermal pathway in the previously mentioned March 26, 1999 memo (attached).[13] A major concern expressed in that memo is that no criteria are provided to help determine when dermal contact becomes "a significant potential exposure pathway".

There are a number of factors that can affect the relative significance of dermal contact with contaminated soil. Contaminants with relatively high ABS values (e.g. PCP, PAHs, PCBs) will generally have the largest *percent* impacts on cleanup levels although corrections for gastrointestinal absorption efficiency will also be a determining factor (e.g. cadmium). It is also useful to note that meaningful reductions of current soil cleanup values are dependent upon the absolute, not just the percent, decrease. For example, a reduction in the Method B cleanup level for pyrene (ABS = 0.13) from 2400 to 1816 ppm is more meaningful than a reduction of 1.6 to 1.2 ppm for PCBs (ABS = 0.14). In addition, the overall impact of the dermal route on soil cleanup levels is magnified under the Method C versus Method B approach as demonstrated in spreadsheets provided to the SAB by the technical team. This discrepancy is due to the lower soil ingestion rate assumed under Method C resulting in a relatively higher dermal contribution to overall risk.

Examination of the various factors that will determine the impact of the dermal route on soil cleanup level reveals that there is no single criterion that allows for a determination of "significance." For that reason, the technical team recommended that the dermal pathway always be included in the calculation of soil cleanup levels, whether for standard or modified Methods B and C.

55

Comments on Draft Environmental Impact Statement

Page 34, Dermal Exposure Pathway:

1. The first statement in this section of the draft EIS read as follows:

> The proposed rule amendment requires evaluation of the dermal pathway whenever a site-specific risk assessment results in dermal becoming a potentially significant exposure pathway.

The exact language of the proposed amendments reads as follows (WAC 173-340-740(3)(c)(iii) and 745(5)(c)(iv)):

> For hazardous substances other than petroleum mixtures, dermal contact with the soil shall be evaluated whenever the proposed changes to the standard [Method B or Method C] equations or default values would result in soil cleanup levels that are high enough that dermal contact could become a significant potential exposure pathway.

Replies to page 5 of 10

55 cont.

The EIS language should be amended to straightforwardly acknowledge that the proposed amendment language does not explain what constitutes a "significant potential exposure pathway," and that, therefore, it is not clear what circumstances might trigger the requirement to evaluate dermal exposure to soil in addition to ingestion.

56

2. The second and third sentences in this section of the draft EIS read as follows:

> This is because dermal absorption (absorption of contaminants through the skin) can be an important exposure pathway (Zartarian, 1998 and DOH, 1997.) As can be seen in Table 3.2.c, inclusion of the dermal pathway in the direct contact soil calculation, using the default assumptions in the proposed rule amendments, has only a minor effect on soil concentrations for unrestricted land use.

There is no reference of "DOH, 1997" in the references. It appears this reference may be the one listed as "Health Consultation: Sternoff Metals Corporation" on page 96 of the draft EIS.[19] This reference should be corrected and placed in a correct alphabetic manner in the list of references. Table 3.2.c cannot be presented or otherwise alluded to as a comprehensive presentation of how inclusion of dermal contact with contaminated soil would affect cleanup levels, since only a selection of chemicals are included in the table. It would be acceptable to state that the inclusion of dermal contact has more impact on cleanup levels derived for direct contact under section 745, since the default assumption of incidental soil ingestion is 25% of that under section 740, rendering dermal contact of more relative importance.

57

3. The second-to last sentence in this section of the draft EIS reads as follows:

> It should be noted that for most of these chemicals, the soil cleanup level would be controlled by the leaching pathway, not direct contact, so most sites would not be affected by this change.

First, it is not clear what is meant by the term "these chemicals." Is the statement limited to the chemicals listed in Table 3.2.c of the draft EIS? This should be clarified. Even so, it is not possible to state with any assurance that the leaching pathway would be the risk driver for any group of chemicals. This discussion pertains only to site-specific risk assessments (i.e., Modified Methods B and C), and therefore, the leaching pathway may be considerably less important, or even discounted, depending on the site. For example, cleanup levels for soil at a site in the desert where ground water is hundreds of feet below ground surface may be more important for direct contact with soil than as a source to ground water, if the use of partitioning models or other allowed demonstrations so indicates. Likewise, cleanup levels for soil at a site where ground water is not potable and does not immediately discharge to surface water may be controlled by direct contact, not leaching to ground water. This statement should be amended to state correctly that dermal contact, like incidental soil ingestion, will not affect soil cleanup levels when the leaching pathway requires a lower cleanup level than does direct contact with the soil.

reply to page 001 10

Recommendations

58 Currently, MTCA requires evaluation of the oral route only with respect to the soil exposure pathway. Although the proposed rule revision includes an algorithm for evaluating dermal exposure to contaminants in soil, it is required only when modifying Method B or Method C approaches. No changes are proposed to the default values contained in the MTCA Cleanup Levels and Risk Calculations (CLARC II) tables. In addition, the language in the proposed rule amendments is vague as to when dermal contact with soil must be assessed using modified Methods B or C.

59 1. Assessment of oral *and dermal* exposure to contaminants in soil should be required as the *default* method for determining soil cleanup levels. We can find no rationale where oral exposure (i.e. incidental ingestion of soil) could occur independent of skin contact.

   - ➪ CLARC II default soil cleanup levels could be readily updated to include the dermal route using the equations provided in the proposed rule amendment.
   - ➪ Such an approach will better ensure state-wide consistency for the cleanup of MTCA sites, simplify the derivation of cleanup levels and better protect human health from risks associated with contact with contaminated soil.
   - ➪ CLARC II default values should be revised for those contaminants for which peer-reviewed ABS values are available.

60 2. Assessment of dermal exposure to contaminants in soil should be required under all modified Method B and C scenarios.

   - ➪ The current language requires some, undefined level of significance before the dermal route is considered under a modified Method B or C approach. At a minimum, this level of significance needs to be defined.
   - ➪ It is important to note that this level of significance may differ between Method B and Method C approaches for the same contaminant.

61 3. The language in the Draft Environmental Impact Statement should be modified according to the comments provided above under the section "Comments on the Draft Environmental Impact Statement".

Reply to Page 7-10

Marcia Bailey — U.S. Environmental Protection Agency

Robert Duff — Washington State Department of Health

Marc Stifelman — U.S. Environmental Protection Agency

No attachments
cc: Trish Akana, Ecology, with all attachments
MTCA Ecology Scientific Advisory Board

Reply to

Dermal References For The Public Record

[1] U.S. Environmental Protection Agency Region 10. Interim Final Guidance: Developing Risk-Based Cleanup Levels At Resource Conservation and Recovery Act Sites in Region 10. 1998, EPA 910/R-98-001.

[2] U.S. EPA Office of Research and Development. Dermal Exposure Assessment: Principles and Applications Interim Report. 1992, EPA/600/8-91/011B.

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[5] Duff, R.M. and J.C. Kissel, Effect of soil loading on dermal absorption efficiency from contaminated soils. J Toxicol Environ Health, 1996. 48(1): p. 93-106.

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[8] Kissel, J.C., K.Y. Richter, and R.A. Fenske, Factors affecting soil adherence to skin in hand-press trials. Bull Environ Contam Toxicol, 1996. 56(5): p. 722-8.

[9] Kissel, J.C., K.Y. Richter, and R.A. Fenske, Field measurement of dermal soil loading attributable to various activities: implications for exposure assessment. Risk Anal, 1996. 16(1): p. 115-25.

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[11] Memorandum April 29, 1998. From Craig McCormack To Carol Kraege. Subject: Responses to Comments on The Dermal Exposure Pathway - Proposed MTCA Rule Revisions.

[12] Memorandum January 25, 1999. From Craig McCormack, Robert Duff, Marcia Bailey, and Marc Stifelman To MTCA Scientific Advisory Board. Subject: Response to SAB Request during the November 03, 1998 Meeting Regarding the Dermal Route of Exposure to Contaminants in Soil.

[13] Memorandum March 26,1999. From Craig McCormack, Robert Duff, Marcia Bailey, and Marc Stifelman To Pete Kmet. Subject: Questions and Answers Regarding the Dermal Exposure Pathway.

[14] U.S. Environmental Protection Agency Region 3. Region 3 Technical Guidance Manual Risk Assessment: Assessing Dermal Exposure from Soil. 1995, EPA/903-K-95-003.

[15] Commonwealth of Massachusetts, Department of Environmental Protection. Massachusetts Contingency Plan, 310 CMR 40.0000. January 13, 1995.

[16] Kissel J. and Fenske R. Explicit Consideration of Time-Dependent Dermal Absorption in Estimation of Pesticide Dose to Agricultural Reentry Workers. ISEA Annual Meeting,1998.

[17] Kissel J, J Shirai, T Garlock and E. Wong. Application of Soil Contact Rates to Dermal Pathway Exposure Assessment. Annual Meeting of the SRA, Phoenix, AZ, December 1998.

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WASHINGTON OIL MARKETERS ASSOCIATION
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BILL BELLMAN
Executive Director
woma@ix.netcom.com

January 12, 2000

Mr Jim Pendowski
Washington State Department of Ecology
Toxic Cleanup Program
P.O. Box 47600
Olympia, Washington 98504-7600

Dear Mr. Pendowski;

I am writing regarding the rule revisions being proposed to the Model Toxic Control Act. I am opposed to the rule changes especially the changes to the Method A cleanup levels.

I attended workshops and two of the recently held hearings on the proposed rule. After all that, there are still unanswered questions. Some of these questions are as follows:

62. 1. Has a review of some of the thousands of sites that have been cleaned up under the current standards, been made and from that a determination that existing standards are not protecting the groundwater in Washington?

63 2. What caused the scientific advisory board to make a decision on July 15,1999, that a benzene level of .1 was the level that would protect groundwater? The level had previously been dropped to .02. On July 6, 1999 we were informed that the level was returned to .5 as that number was determined to be protective. On July 15th, it was dropped to .1.

64 3. What will the increase in cost be to small business for Method B site assessment in pre-cleanup, evaluating, and testing? It appears the changes may force many small business operators to Method B instead of Method A.

The increase in cost to the small business operator could be substantial. Because of the
65 tougher method A standards, he must now look at Method B. After doing a site assessment, he may find himself having to still meet the method A standards. Where, previously, he went right to method A, he now has the additional cost of trying to find a more reasonable cleanup level.

66 Because of what appears to be confusion within the department of ecology regarding what method A cleanup levels should be, it seems reasonable to ask for the model, which all this is based on, be submitted to an independent review.

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67 The Livermore report out of California should be reevaluated by the Department of Ecology. It is quite clear in its findings. It's report dated October 16, 1995, on Recommendations to Improve The Cleanup Process for California's Leaking Underground Fuel Tanks, indicated less restrictive cleanup standards may be appropriate when applying risk-based corrective action to leaking underground storage tank decision making.

I look forward to your review of these comments and ask that petroleum cleanup levels be left where they are until an independent review of the model can be done. The Livermore report, and actual cleanups in Washington, should be indication enough that the direction you are going is in error.

Sincerely;

Bill Bellman
Executive Director

RICHARD F. WOLF
9076 HOLMAN ROAD N.W.
SEATTLE, WASHINGTON 98117
(206) 782-4930

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January 11, 2000

Mr. Jim Pendowski
Washington State Department of Ecology
Toxics Cleanup Program
P.O. Box 40600
Olympia, WA 98504-0600

RE: MTCA Rule Changes

Dear Mr. Pendowski:

68 As a registered Site Assessor, I have been involved in the cleanup of hydrocarbon contamination at many underground storage tank (UST) sites in the State of Washington. Most of these sites have had some release of petroleum products that have contaminated the soil around or under the USTs. In most cases the hydrocarbon contaminated soil has been excavated, treated and used as backfill at the site. The Method A cleanup level was achieved at these sites. However if Ecology changes the current benzene standard from .5 parts per million to .01 parts per million, or if the TPH-G standard changes form 100 ppm to 30 ppm, then some of these sites may not meet the new cleanup level. This could significantly impact financially the property owner. This change could require drilling and testing sites that previously achieved cleanup standards. Even prior property transactions could be affected. Existing and prior property owners, banks, insurance companies, schools, and governments that owned former contaminated sites could be at financial risk in order to comply with the proposed change in the benzene standard ot TPH-G standard If drilling is necessary to determine if existing sites that were previously contaminated and cleaned meet the new standard, there is additional risk that new contamination of the soil could occur as the result of drilling through the petroleum product dispenser lines or the storage tanks that have been re-installed. Also it may be possible that drilling for monitoring wells to verify that a site meets the new standard could extend through a layer of impervious strata, and thus allow hydrocarbons that may exist to contaminate the groundwater.

Please do not change the Method A benzene standard from .5 parts per million to .01 parts per million or change TPH-G from 100 ppm to 30 ppm.

Very truly yours,

Richard Wolf

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Page 1 of 1

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DUWAMISH COALITION

TPH PROJECT OVERSIGHT GROUP

Washington State Department of Ecology, Port of Seattle, King County, Cities of Seattle and Tukwila, U.S. EPA Region 10 and the Duwamish Coalition

January 12, 2000

Thomas Fitzsimmons, Director
Washington State Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Dear Mr. Fitzsimmons,

We are pleased to transmit our consensus comments on the Department of Ecology's November 1999 proposed amendments to the Model Toxics Control Act (MTCA) cleanup regulation. For the past three years we have been working as the Project Oversight Group (POG) to manage the Duwamish Coalition's Brownfields/Total Petroleum Hydrocarbon (TPH) Project. This letter reflects a consensus among the Project Oversight Group representatives from the Port of Seattle, King County, the cities of Seattle and Tukwila and the U.S. Environmental Protection Agency. It is consistent with and builds on work done over the last three years in cooperation with Ecology through its POG membership and department participation.

Our original consensus recommendations for the TPH portions of the rule (transmitted September 21, 1999) are repeated in Attachment I, followed by a discussion of the manner in which Ecology responded to them in the November 1999 proposed amendments. Attachment II contains POG comments and recommendations on "new issues," that is, changes made to the proposed amendments since the draft December 1998 proposed amendments were published. Because many changes were made, we encourage Ecology to consider incorporating the POG's comments and recommendations in Attachment II into the final amendments. The issues addressed in Attachment II are particularly important, inasmuch as this represents the first opportunity for the POG to provide written comments on many of them. We are also providing comments on the Draft Environmental Impact Statement and the Small Business Economic Impact Statement.

Attach. Name	Description
Attachment I	Identification and discussion of issues presented by the TPH Project Oversight Group (POG) to the Department of Ecology based on the December 1998 draft proposed amendments (September 21, 1999 transmittal of recommendations).
Attachment II	NEW ISSUES: TPH Project Oversight Group (POG) consensus comments to the language in the proposed amendments to MTCA, dated November 1999. These comments are in addition to those the POG submitted to Ecology based on the draft proposed MTCA amendments, which were published in December 1998 and are addressed in Attachment I.
Exhibit A	Exhibit A to Attachment II. Proposed reorganization and modification of Section 747 language.
Exhibit B	Exhibit B to Attachment II. Memo on proposed MTCA ground water cleanup levels for diesel range organics, heavy oil and mineral oil.
Attachment III	Cover letter dated September 21, 1999, transmitting the POG's Consensus Recommendation to Ecology for the Draft MTCA Rule and List of Contributors.
Attachment IV	Comments on the Draft Environmental Impact Statement for the MTCA proposed rule amendments.
Attachment V	Comments on the Small Business Economic Impact Statement.

69 During the last three years, we have conducted a thorough scientific and policy review of TPH issues related to site evaluations, regulatory frameworks, toxicology, analytical methods, fate and transport, and cleanup levels and policies. This work was conducted in a manner consistent with the Memorandum of Agreement under which the POG was formed. We continue to believe implementation of our recommendations will put Washington at the nation's forefront of facilitating TPH cleanups by providing a flexible, scientifically advanced regulatory framework that will protect the environment and human health through tiered risk evaluations.

70 Cost considerations will be a major factor whether or not small businesses are able to implement the new rule on a large scale. We strongly encourage Ecology to pursue resources to produce written guidance for the application of the new TPH cleanup program develop model remedies for TPH-contaminated sites, establish area-wide cleanup standards, and fund technical assistance for small businesses. All of these will be critical to cleaning up the very large number of Brownfields in our state held by small property owners.

Thank you for the opportunity to work with Ecology and to provide our comments and recommendations on the proposed amendments to MTCA.

Sincerely,

Elizabeth Leavitt,
Environmental Manager,
Aviation Division,
Port of Seattle

Thomas Newlon,
Senior General Counsel,
Port of Seattle

Marcia Bailey, D. Env.
Environmental Scientist,
Region 10, U.S. EPA
(Technical Adviser to POG)

Michael Alvine,
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Lucy Auster,
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Ben Wolters,
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City of Tukwila

cc:

Gary Locke, Governor,
State of Washington

Ron Sims, Executive,
King Co. Council Members,
King County

Paul Schell, Mayor,
City Council Members,
City of Seattle

Steve Mullet, Mayor,
City Council Members,
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Mic Dinsmore,
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James Sims, Director,
Pollution Liability
Insurance Agency
State of Washington

Christine Gregoire,
Attorney General,
State of Washington

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Administrator,
Region 10,
U.S. EPA

Trish Akana,
Rules Coordinator,
Toxics Cleanup Program
Department of Ecology

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ATTACHMENT I

Evaluation of Responses to the TPH Project Oversight Group Consensus Recommendations of September 21, 1999 on the December 1998 Draft Proposed Amendments to MTCA

The identification and discussion of issues presented by the TPH Project Oversight Group (POG) to the Department of Ecology based on the December 1998 draft proposed amendments to MTCA are presented below. Following each issue is boxed text constituting the POG's new comments, based on how Ecology has addressed each of the issues in the final proposed amendments, dated November 1999. Note: The page numbers cited in this document should be referenced to the December 1998 draft proposed MTCA amendments. However, please note that page numbers in boxed text refer to page numbers in the November 1999 proposed amendments published in the Adobe® format (.pdf) file available on Ecology's web site. They do NOT represent page numbers as represented in the November 1999 Washington State Register.

1269

1. Issue: Page 29, Section 360(5): Commercial gas station scenario remediation.

Comment: The formula here is inconsistent with POG decisions and the TPH tiered/fractionated approach. The equation is incorrect: dermal is not incorporated and there is not a single RfD for petroleum, as the formula requires. The POG recommends removing this equation and referencing equations 740-3 and 745-3, as an example of a way to calculate remediation levels. The conditions, expectations and exposure parameters for the commercial gas station scenario should remain in this section but be placed into narrative form.

Issue 1 Resolved.

1270

2. Issue: Page 34, 173-340-370(1)(g) Cleanup alternatives. The draft language excludes natural attenuation.

Comment: The POG recommends changing the wording of (1)(g) as follows:

> The department expects that natural attenuation of hazardous substances may be appropriate at sites where...
> (iii) There is evidence that natural attenuation process is occurring and will continue to occur at a reasonable rate at the site; and
> (iv) Appropriate monitoring requirements are adopted to ensure that the natural attenuation process is taking place and that human health and the environment are protected.

Issue 2 Resolved/New Language Under Review
The POG has provided recommendations regarding natural attenuation in New Issues, Attachment II, Issue 4.

1271

3. Issue: Page 72. 173-340-700 (8). What is the process for setting cleanup standards and selecting remedies for petroleum contaminated sites? [AKA: "the

TPH Overview"]

7/ cont.

Comment: The POG has revised these paragraphs. The proposed TPH Overview language is provided below. The POG expects that the approaches to determining TPH cleanup levels described in the overview will be applicable to the determination of remediation levels and that reference to this will be incorporated into 173-340-360.

WAC 173-340-700 Overview of cleanup standards.

* * *

(8) What is the process for setting cleanup levels for petroleum contaminated sites? This chapter provides for the establishment of cleanup levels at sites where there has been a release of total petroleum hydrocarbons (TPH) and hazardous substances associated with a release of TPH.

(a) The potential impact of TPH on terrestrial ecological receptors must be evaluated under WAC 173-340-7490 through 173-340-7494. (b) It is necessary to analyze for and evaluate certain carcinogenic and non-carcinogenic hazardous substances that may be associated with a release of TPH. These are identified in Table 830-1. In cases where the cleanup level for one or more of these associated hazardous substances is exceeded but the TPH cleanup level is not, the cleanup level shall be based on the associated hazardous substance.

(i) Method A. Method A may be used to establish cleanup levels for TPH and associated hazardous substances at qualifying sites (see WAC 173-340-704). At these sites, the presence, location and concentration of TPH may be established by using the NWTPH method described under Method 7 (see WAC 173-340-830(3)(vii)). The NWTPH method is a simplified, and relatively inexpensive, analytical method for evaluating TPH. Method A cleanup levels have been determined for three common petroleum mixtures: gasoline range organics (GRO), diesel range organics (DRO), and electrical insulating mineral oil, as well as many hazardous substances that may be associated with the TPH. A site owner may decide to use Method A for some substances or media and Method B or C for others, depending upon site conditions and qualifications.

(ii) Method B and Method C tiered approach. This chapter provides for a three-tiered approach for establishing Method B and Method C cleanup levels at sites that involve a release of TPH. These tiers are not required to be approached sequentially (that is, the process may be started at any tier). The tiered process allows one to calculate different cleanup levels for TPH and associated hazardous substances using progressively more complex and site specific information, depending upon the site owner's needs and preferences, and also allows for basing the cleanup levels on the presence or absence of completed exposure pathways, determined as part of the conceptual site model. In establishing a TPH cleanup level using the tiered process, it is still necessary to comply with other applicable requirements and procedures under WAC 173-340-700 through 173-340-750.

(A) Conceptual site model. A conceptual site model must be developed as a first step for determining cleanup levels in any of the Method B and Method C tiers for TPH. The nature of the contamination, potentially contaminated media, actual and potential exposure pathways, potential receptors, and current and future land and resource uses are defined in this process.

(B) General description of the three tiers.

(I) Tier 1 consists of the standard Method B and Method C formulas and requirements under WAC 173-340-720 through 173-340-750 for each applicable pathway identified by the conceptual site model, including specific requirements set forth in those sections for petroleum mixtures.

(II) Tier 2 consists of the site-specific use of modified Method B and Method C formulas and requirements under WAC 173-340-720 through 173-340-750 for each applicable exposure pathway identified by the conceptual site model; inclusion and development of additional, site-specific exposure pathways or land uses not addressed in Method A or Tier 1; and exclusion of incomplete exposure pathways from Method A or Tier 1.

(III) Tier 3 consists of the site-specific use of standard or modified Method B and Method C formulas and requirements for each applicable exposure pathway identified by the conceptual site model and the use of new scientific information to establish a cleanup level as provided under WAC 173-340-702(14). It is considered a more complex evaluation in terms of technical sophistication

(such as the use of new fate and transport models), data needs, cost and time.

(IV) A single tier may be used for all exposure pathways or more than one tier may be used when there are multiple exposure pathways.

(C) Fractionated approach. Method B and Method C cleanup levels for TPH are determined using the fractionated analytical approach for petroleum as described under Method 7 (see WAC 173-340-830(3)(vii)). This approach divides the TPH mixture into equivalent carbon numbers. Use of the fractionated approach requires testing or knowledge to define product composition as described under subsection (8)(b)(ii)(D) of this section ("Determination of product composition"). For direct contact with contaminated media, cleanup levels are calculated using reference doses which have been determined by the department for each fraction. Cleanup levels can also be calculated based on the measured or predicted ability of the fractions to migrate from one medium to other media. The most conservative of the calculated cleanup levels are to be used, depending on the results of the conceptual site model.

(D) Determination of product composition. Product composition may be determined by analyzing each sample in accordance with the VPH/EPH method described under Method 7 (see WAC 173-340-830(3)(vii)). Alternatively, product composition may be determined by one of the following methods:

(I) Correlation. Where WTPH or NWTPH methods described in Method 7 are used to collect and analyze the presence, location and concentration of TPH, knowledge of the fraction-specific composition of the petroleum released at the site may be based on analysis and correlation of a portion of the site samples with both the VPH/EPH and WTPH/NWTPH methods.

(II) Retrofitting. Where WTPH or NWTPH methods were used to collect and analyze the presence, location and concentration of TPH prior to the effective date of this provision, knowledge of the fraction-specific composition of the petroleum released at the site may be based on the fraction-specific composition assumptions used by the department to calculate Method A cleanup levels, which the department shall publish in guidance. If the identity of the petroleum product released at the site is not known, or is a mixture of products, retrofitting under this provision shall be based on the composition that yields the lowest TPH cleanup level.

71 cont.

Issue 3 Partially Resolved: The POG has two recommendations for clarification purposes: 1) Add the following italicized language in the first sentence of (8)(b)(ii): "This chapter provides for a three tiered approach for establishing Method B and Method C cleanup levels *and remediation levels* at sites that involve a release of TPH." 2) Add the following italicized language in the last sentence of (8)(b)(ii)(D)(II): "If the identity of the petroleum product released at the site is not known, or is a mixture of products, retrofitting under this provision shall be based on the composition *of the product identification match* that yields the lowest TPH cleanup level." The purpose of the latter recommendation is to make it clear that when a small part of the GRO range is present in samples from a release that analytical results demonstrate clearly to be a diesel-range product, one is not obligated to retrofit the release to gasoline-range products.

1271

4. Issue: Page 85, 173-340-708(9) and equation 730-1: Surface Water Cleanup Levels.

The POG is concerned about the validity of Equation 730-1. It is not used by the EPA or any other government entity to derive surface water cleanup levels for the protection of human health. Proposed language in Section 708(9) sets the stage to use the equation on a more regular basis at MTCA sites. It is the POG's opinion that it is not sufficient to rely on bioconcentration factors alone for determining surface water cleanup levels for petroleum, indicator substances, or other substances intended to be protective of human health via fish ingestion. First, it is commonly understood that chemical-specific

1271 bioconcentration factors, bioaccumulation factors and biota-sediment accumulation factors are all important for predicting concentrations in fish. Which factor should be used depends upon the log Kow of the specific chemical (or fraction, in the case of petroleum). The reader can be directed to appropriate EPA guidance for assistance in making these determinations. Second, other sources of information (empirical or other literature) should be available to a site owner to calculate alternative surface water cleanup levels if it is evident that bioconcentration factors are not appropriate for a specific chemical of concern. The POG recommends that the last sentence in (9)(a) be deleted and replaced with the following:

> "When 1) it has been determined that a bioconcentration factor is appropriate for a specific chemical, and 2) no such bioconcentration factor is available; appropriate EPA guidance, literature and/or empirical information may be used for the derivation of the bioconcentration factor."

Issue 4 Partially Resolved.
The POG's recommended language was included in the proposed rule. The POG continues to recommend that Ecology incorporate BAFs and BSAFs as appropriate on a chemical-specific basis, into its approach for calculating surface water cleanup levels. The POG also concurs with the MTCA Science Advisory Board that the fish consumption rate should be revisited by Ecology, as it is likely not protective for certain subpopulations. Comments on new language which has been added to the surface water cleanup section are provided in Issue 16, Attachment II.

1272 **5. Issue: Pages 96 and 98, Section 720(5)(b)(ii)(C) and 720(6)(b)(ii)(C): This section states the following: "When calculating cleanup levels for petroleum mixtures using this method, it must also be demonstrated that biological degradation of the calculated petroleum concentration would not result in exceedances of the maximum contaminant levels in chapter 246-290 WAC, such as iron and manganese. This demonstration can be made with site monitoring data or by modeling approved by the department.**

We recommend changing the language to the following:

> "When calculating cleanup levels for petroleum mixtures using this method, biological degradation of the calculated petroleum concentration shall not result in exceedances of the maximum contaminant levels in chapter 246-290 WAC, such as iron and manganese."

Issue 5 Resolved.

72 **6. Issue: Page 97, 173-340-720(5)(b)(iii): Non-aqueous phase liquid limitation: "Physical observations or the solubility limit for the hazardous substance may be used to determine compliance with this requirement."**

Comment: The POG believes it is necessary to clarify what is meant by "physical

72 cont

observations" and how this applies to the groundwater cleanup level. It is therefore recommended that the title and first two sentences of (iii) be replaced with the following:

> (iii) Free product limitation. The groundwater cleanup level shall not result in a concentration that would result in an accumulation of free product in or on ground water. Physical observations (measurable product layer) or the solubility limit for the hazardous substance may be used to demonstrate compliance with this requirement.

Issue 6 Partially Resolved:
The language is still worded as follows: "Physical observations, such as the lack of a film, sheen, or discoloration of the ground water or lack of sludge or emulsion in the ground water, may be used to determine compliance with this requirement...". The POG recommends that language be added to indicate that the presence of such conditions does not necessarily imply non-compliance, but that the potential for free product must be examined further to determine whether it is present. In addition, Ecology should include language that requires that samples which are used to demonstrate the lack of free product must be obtained from wells that are screened at appropriate vertical locations, i.e., likely to intercept NAPL, if present. Please see Attachment II, Issue 15, for additional comment on the new language incorporated by Ecology into this subsection.

1273

7. Issue: Page 99, Section 720 Ground Water Cleanup Standards (7)(ix) Cleanup levels for groundwater flowing into nearby surface water. The language reads:

> **"Sites where ground water is flowing into nearby surface water and that do not qualify for use of surface water cleanup levels under this provision must use as the ground water cleanup level, the more stringent of cleanup levels based on drinking water beneficial use...and the surface water cleanup levels derived under WAC 173-340-730."**

Comment: The POG would like to confirm Ecology's intention with regard to TPH in this section. The POG anticipates that the Method A groundwater cleanup standards for TPH would be applicable for satisfaction of this requirement, insomuch as surface water standards for TPH have not yet been developed. It is the POG's intent to continue using the Method A TPH ground water cleanup level when TPH is flowing into surface water until an appropriate surface water cleanup level can be developed. The POG has no expectation at this time to derive TPH surface cleanup levels using Equation 730-1.

Issue 7 Partially Resolved.
The POG has offered comments in Attachment II, New Issues, Issue 16, regarding newly proposed language on TPH surface water cleanup levels

1274

8. Issue: Page 113, Section 740(1) (first column, middle of page). This language discusses the depth at which a cleanup level must be met for different exposure pathways (ingestion, dermal, eco, leaching and vapor).

1274 cont.

Comment: The POG believes that this section impacts TPH and recommends that the following language changes be made: A site is considered to have met the soil cleanup levels for the ingestion, dermal and ecological exposures when the concentration is met throughout the upper 15 feet of soil at the site. This represents the depth of soil that could be excavated and distributed at the soil surface as a result of development activities and at which human or environmental receptors could come into direct contact with the soil. For leaching or vapor exposure, the cleanup level applies throughout the unsaturated zone.

Issue 8 Resolved.

1275

9. Issue: Page 116, 173-340-740(4)(b)(iii))(C). Petroleum mixtures.

Comment: The words "for ingestion" should be eliminated since the equation for petroleum mixtures includes ingestion and dermal routes of exposure to soil.

Issue 9 Resolved.

1276

10. Issue: Page 116, equation 740-3 and page 128, equation 745-3. Petroleum soil cleanup level. Multiple comments.

Comments:
(A) The equations contain an "exposure" term which was used in order to shorten them. The POG believes that the equations should be provided in full in order to be both understandable and usable, just as non-petroleum equations are. We understand that there was insufficient room in the column format of MTCA to do this, so it is suggested that all of the petroleum-specific equations be placed in a single table, which would allow enough space to write them out in full, including explanations as needed. For example:

$$\text{Conc. in soil (mg/kg)} = \frac{THI}{\{E1 \times 3(Fi/RfD_o)\} + \{E2 \times 3(Fi/RfD_d)\}}$$

where
E1=The exposure term for ingestion: $\frac{AB1 \times SIR \times FOC}{ABW \times UCF2}$

E2=The exposure term for dermal: $\frac{SA \times AF \times ABS}{1E+6 \times ABW}$

The exposure terms could be included either in the equation itself or following it.
Note: the exposure term for the residential soil equation cites industrial exposure factors.

Issue Resolved

73

(B) Equations 740-3 and 740-5 (soils) define the term "n" as the "number of hazardous substances and petroleum fractions (unitless)". This could be construed as including fuel additives or contaminants such as PCBs and VOCs into the overall hazard index. Equations 720-3 (groundwater) identifies "n" as "number of petroleum components". This is confusing,

73 cont

as the term "petroleum components" has not been defined. The POG recommends that all of the petroleum equations should identify "n" as:

> "The number of petroleum fractions present plus the number of volatile petroleum components present (see Table 830-1)"

Issue Partially Resolved:
The POG suggests that the definition of the term "n" in Equations 720-3 and 740-3 include the word "noncarcinogenic" prior to "volatile hazardous substances."

74

(C) Equations 740-3 and 745-3 (soil) define F(i) in terms of "percent mass fraction" while Equations 750-3 (air) and 720-(3) define it as "fraction by weight." The definitions should be appropriate to the medium. We suggest that Ecology confirm the terminology used.

Issue Not Resolved:
The term F(i) is defined as "concentration of TPH component (i) divided by the concentration of TPH (unitless) for Equation 720-3 and as "fraction (by weight) of petroleum component (i) (unitless)" for Equation 740-3. The POG recommends that the definitions be consistent, and that the definition for Equation 740-3 be used.

1277

11. Issue: Pages 117 and 118, Section 740(4)(b)(v)(C) and (D). Portions of the language pertaining to soil vapors for petroleum sites are unclear and should be modified. In addition, the POG is of the understanding that this vapor language would be placed in 740(e) ("Additional Protection").

Comment: the following language changes are recommended and need to be reflected in a flowchart (see attached). Some of the deleted language pertains to remediation, which the POG believes is better addressed in other sections (i.e. Part III). Language is also added to emphasize the development and use of a conceptual site model. It is also important to clarify which methods are required and which are options for demonstrating cleanup levels are protective; relative to ambient and/or indoor air.

(v) Method A petroleum sites:

~~(I)~~ Sites which have cleaned up to Method A soil levels at ~~a~~ the point of compliance throughout the site are presumed to have addressed the indoor air pathway.

~~(II) Sites using Method A soil cleanup levels, but establishing higher soil remediation levels will need to protect the ambient air and indoor air pathways if soil remediation levels are high enough that ambient air or indoor air concentrations could exceed the air standards in WAC 173-340-750.~~

(D) Method B petroleum sites.

(I) A conceptual site model that considers the air pathway will be developed to determine how soil cleanup levels will be evaluated. The conceptual site model will consider present and future potential land uses and exposure to ambient and/or indoor air as appropriate.

(II) Soil cleanup levels for Method B petroleum sites must be protective for the air pathway when:

~~(a)(I) For gasoline range organics~~ TPH mixtures in soils contain~~ing TPH~~ greater than 8% volatiles by weight,: Ssoil cleanup levels shall be determined on a site-specific basis that are protective of the indoor and ambient air as deemed applicable under the conceptual site model.

(bII) For TPH ~~diesel range organics or~~ mixtures in soils containing TPH less than or equal to 8% volatiles by weight, soil cleanup ~~standards~~ levels ~~to~~ protective of the indoor air ~~pathway~~ shall be developed when soil concentrations are greater than 10,000 mg/kg TPH within 1.0 foot of the floor or wall of the structure, bottom slab of the structure or conduit that could facilitate transport to the structure.

Soil containing less than 8% volatiles by weight and not exceeding TPH concentrations of 10,000 mg/kg within 1.0 foot of the floor or wall of a structure does not require further evaluation of the air pathway or remediation to be protective of the air pathway.

~~(III) Air concentrations within a building exceed the concentrations in WAC 173-340-750.~~

(IIIV) ~~Instead of establishing~~ ~~soil.~~ Soil cleanup levels may be evaluated as being protective of the air pathway using any of ~~to address the indoor air pathway or ambient air pathway~~, the following methods ~~may be used to demonstrate compliance with this requirement~~:

- Measurements of the soil vapor concentrations, using methods approved by the department, demonstrating vapors in the soil between the source and receptor(s) do not exceed indoor air or ambient air cleanup levels established under WAC 173-340-750 at point(s) of exposure identified by the conceptual site model;
- Measurement of ambient air concentrations and/or indoor air vapor concen-trations throughout buildings, using methods approved by the department, demonstrating ~~indoor air~~ air does not exceed ~~indoor air~~ cleanup levels established under WAC 173-340-750 at point(s) of exposure identified by the conceptual site model, provided such measurements are conducted using methods approved by the department. Such measurements must be representative of current and future site conditions when vapors are likely to enter and accumulate in structures; e.g., when heating systems are operating, during periods of falling barometric pressure or rising water table conditions. Measurement of ambient air may be excluded if it can be shown that indoor air is the most protective point of exposure.
- ~~Measurements of the ambient air concentrations, using methods approved by the department, demonstrating ambient air does not exceed appropriate air cleanup levels established under WAC 173-340-750.~~
- ~~Using an active vapor extraction system with off gas capture or treatment, e.g., granular activated carbon or thermal treatment of off gas. The system shall be operated (including use of pulse pumping techniques) until soil vapor concentrations no longer exceed air cleanup levels established under WAC 173-340-750 or as long as effective reductions in soil vapor concentrations or volume are occurring.~~
- Using modeling methods approved by the department to demonstrate the air cleanup levels established under WAC 173-340-750 will not be exceeded at point(s) of exposure defined by the conceptual site model. When this method is used, the department may require soil vapor and/or air monitoring to be conducted to verify the calculations and compliance with air cleanup levels.

Other methods as approved by the department.

1277 cont.

Issue 11 Partially Resolved.

Some of the POG-recommended language was incorporated, including reference to the conceptual site model. However, significant new language has been added since the December

1277 cont.

1998 draft proposed amendments, and comments on the new language are provided in Attachment II, New Issues, Issues 24 and 25.

1278

12. Issue: Page 129, 173-340-745(5)(b)(iv)(D). Petroleum Mixtures.

Comment: This section should be removed in its entirety, because it implies that the dermal pathway is to be calculated separately for petroleum mixtures. Equation 745-3 incorporates the dermal and ingestion routes for petroleum.

Issue 12 Resolved.

1279

13. Issue: Page 133-135, Section 747 (4) and (5): Four-Phase Partitioning Model.

Comment: The bulk of the detail describing the four-phase partitioning model should be deleted and retained for guidance. It should be replaced with: "Use of the four-phase partitioning model is authorized. See Ecology guidance for applicability." The section should retain a description of the necessary parameters together with appropriate default values and set of rules for how default values can be modified.

Issue 13 Resolved:
The bulk of detail describing the four-phase model is still in the body of the rule language. Ecology has consulted with the AG's Office and has concluded that the details regarding the model should be presented as part of the rule. The POG recognizes this need and withdraws the comment. Additional comments on Section 747 are provided in New Issues, Attachment II, Issue 26 and Exhibit A.

1280

14. Issue: Page 133, Section 747 (4)(b). The text prohibits the use of the four-phase model for soil that contains fuels that have been enhanced with alcohol.

Comment: According to a 1993 EPA study (Brusseau, 1993) obtained by the POG:

> The concentration of co-solvent required to produce substantial enhancement solubility and reduction in sorption are relatively large (% level) for many solutes of interest. Thus, it has been difficult to envision scenarios wherein co-solvency could be important. The use of oxygenated and alternative fuels, however, has presented cases where co-solvency could be very important. For example, the presence of the co-solvent in alternatives fuels (e.g., 50% methanol, 50% gasoline) could enhance the transport of the gasoline constituents contained in the fuel, thus increasing the potential for groundwater contamination resulting from a spill. In any case, the effect would probably be limited to the region near the spill (i.e., the near-field domain).

The POG believes there should be precautions and guidance in addressing amended fuels, but that a blanket prohibition on the use of partitioning equations in these cases is unnecessarily restrictive. The language should be changed as follows:

> Use of the four-phase model may only be used on a case-by-case basis for soil containing fuels that have been enhanced with alcohol. It must be demonstrated that the effects of co-solvency have been adequately considered and, where necessary,

1280 cont.

taken into account in applying the model as specified in guidance. Use of the model for enhanced fuels without considering the potential effects of co-solvency and increased groundwater contamination is prohibited.

Issue 14 Resolved:
This comment has been resolved. However, since the 4-phase model can be used for chemicals or mixtures other than TPH mixtures and this text only applies to TPH (fuels), it should be moved to a subsection within 747 specific to TPH approaches (See New Issues, Attachment II, Issue 26 and Exhibit A).

75

15. Page 133, Section 747(3), Ecology currently excludes TCLP and SPLP for TPH although the POG intended that TCLP or SPLP could be used.

It was the POG's intent to be able to use TCLP or SPLP tests in a weight of evidence approach. In other words, if other site-specific information exists that will corroborate leaching data, we think it is appropriate to use it. We believe that the narrative in section 747 allows this. However, the table entitled "Deriving soil concentrations for ground water protection" (WAC 173-340-747) is less clear in that it appears that leach tests are only available for metals. We would like either the leach test box or the empirical demonstration box to be modified so that it is obvious that leach tests for TPH can be conducted.

Issue 15 Partially Resolved.
It is our understanding that Ecology intends to allow TCLP and SPLP tests in empirical demonstrations. However, the language in the proposed rule is somewhat contradictory in this matter. In 173-340-747(3)(b)(iii) (leaching tests under standard Method B), leaching tests are allowed for TPH using "methods approved by the department." In 173-340-747(4)(d)(i)(empirical demonstrations under modified Method B), leaching tests are allowed as part of empirical demonstrations, but without restrictions regarding department approval of methods. The POG suggests that there be consistency between these two sections, and further suggests that department approval of test methods not be required for the use of TCLP or SPLP leaching tests for TPH. Such a requirement could potentially discourage persons conducting voluntary clean-ups from conducting leach tests which could provide important information regarding the soil-to-groundwater pathway.

1281

16. Issue: Page 137, 173-340-747 (9). What is Residual Saturation:

Comment: This section still does not meet the POG's intent and can be misleading. Section 9 should be changed as indicated below. We have also revised the residual saturation flow chart (attached)

(9) What is residual saturation and how is it used to determine whether non-aqueous phase liquid (NAPL) concentrations are protective of ground water?

(a) Residual saturation. When petroleum hydrocarbons are released to the soil, the predominant direction of flow is vertical with migration as non-aqueous phase liquid (NAPL). During this process, some of the NAPL will be left behind in the soil pores or void spaces due to capillary forces. The amount of NAPL that is left behind in the soil pores is called residual saturation. This term is used to describe the volumetric content of the petroleum hydrocarbons that

remain in the soil pores subsequent to free-gravity drainage.

At volumetric contents above residual saturation, the NAPL will continue to migrate. If this occurs, the NAPL may eventually migrate into ground water, provided a sufficient volume of NAPL is released.

(b) How residual saturation is used to demonstrate that non-aqueous phase liquids (NAPL) have not impacted ground water.

(i) Residual saturation screening levels. If the proposed soil petroleum mixture cleanup level at the site exceeds the table 747-2 values, it may be assumed that there is a potential for gravity drainage of NAPL from soil into ground water. The table 747-2 values may be used as soil cleanup levels that will not result in ground water contamination due to free drainage of NAPL. If the proposed soil cleanup level (based on other pathways) is below the appropriate screening level, then residual saturation is not a concern and the cleanup level is acceptable.

Table 747-1: Soil Residual Saturation TPH Screening Levels (1).

Fuel	Screening Level (mg/kg)
Weathered Gasoline	1,000
Middle Distillates (e.g., Diesel, No 2. Fuel Oil)	2,000
Heavy Fuel Oils (e.g., No 6. Fuel Oil)	2,000
Mineral Oil	4,000
Unknown Composition or Type	1,000

(1) [footnote] these screening levels are for coarse sand and gravelly soils. Screening levels for other soil types will be included in guidance. These screening levels presume that there are no preferential pathways for NAPL to flow downward to groundwater. If such pathways exist, residual saturation cannot be used as a method for setting soil cleanup levels.

(ii) Development of alternate cleanup levels to prevent NAPL formation. Soil cleanup levels higher than the table 747-2 values may be demonstrated as being appropriate on a site-specific basis using one or more of the following demonstrations.

A) Site-specific measurements of residual saturation. A site-specific measurement of residual saturation shall be based on methods approved by the department. Soil TPH concentrations measured at the site that are less than the site-specific measurement derived under this section shall be considered to have met this criterion.

(B) Buffer zone demonstration. A demonstration (WAC 173-340-747(8)) may be used to show that soil concentrations measured at the site that exceed residual saturation will not result in ground water contamination above the cleanup levels established in WAC 173-340-720. This demonstration may include a measurement or calculation of the attenuating capacity of noncontaminated soil between the non-aqueous phase liquid-contaminated soil and the ground water table.

(C) Representative ground water monitoring. Demonstration of the absence of NAPL on underlying groundwater may be used to demonstrate that soil concentrations measured at the site will not result in the future formation of NAPL on the groundwater. This demonstration must

include evidence, to the degree required by the department, that the released NAPL has had sufficient time to migrate to groundwater and that no layers of saturated hydrocarbons exist that are continuing to move downward and that have a potential to impact ground water.

1281 cont.

Issue 16 Partially Resolved.
Most of the POG's comments on this issue were incorporated, and the POG considers this issue to be resolved. The POG rescinds its recommendation to change "soil concentrations" to "soil cleanup levels," inasmuch as the revised language explains the term "soil concentrations" as a (legally) necessary distinction from "soil cleanup levels" or "remediation levels." See additional comments on this issue in Attachment II, Issue 26, and in Exhibit A.

76

17. Issue: Page 138-145, Section 7490-7494. Terrestrial ecological evaluation. Ease of understanding of the section to POG.

(A) The POG appreciates and endorses the incorporation of a pilot project to test a tiered approach to the evaluation of risk to terrestrial receptors at cleanup sites. We encourage Ecology to retain language in the "Note to Reviewers" section which explains how the pilot rule will be implemented, and the fact that a report will be published and public comment will be solicited before rules regarding terrestrial ecological risk assessment will be finalized. The pilot rule will give Ecology and PLPs ample time to test the current structure of the rule on their sites and propose modifications and clarification as problems arise.

Issue 17(A) Partially Resolved.
The Pilot Program was completed, and Ecology published a report on it dated November 1999. Therefore, it was not necessary to retain the "Note to Reviewers" in this section. The POG notes that no sites involved entered tier 3 of the terrestrial ecological evaluation and recommends that Ecology expand the pilot project to include at least one Tier 3 site. This would probably require that the site be specifically selected, rather than randomly selected, as was done with the sites included in the pilot project report. In addition, the report does not include a large, unpaved industrial site with more than four acres of TPH-contaminated soil. Such a site would be useful in demonstrating whether such sites, common in the Duwamish corridor, could be eligible for an exclusion from the terrestrial evaluation requirements.

77

(B) Although the POG endorses the concept of a tiered process for ecological evaluations, we had envisioned that the terrestrial ecological tiered process would mirror the POG tiered concept (700(8)). The TPH tiers move from Tier 1 to 3 as a site evaluation becomes progressively more complex and site-specific. In TPH Tier 1, cleanup levels are derived using default, conservative equations. The site owner gains more flexibility as increasingly higher tiers are entered. In contrast, in the terrestrial ecological evaluation, it appears that the eco Tiers 1 and 2 do not increase in site-specificity as the site conditions become more complex. Eco tiers 1 and 2 appear to mix contamination conditions, site settings and physical conditions. We believe it would make more sense if Table 7, which is currently in the second tier, is moved to Tier 1 (like a Method A Table or CLARC). Using Table 7 in tier 1 would constitute a significant off-ramp, in that chemicals not on the list would be automatically excluded from an ecological evaluation. If Tier 1 levels were exceeded, all of the questions asked in current Tiers 1 and 2, including Table 6, could be incorporated into a more comprehensive Tier 2 in order to document an exclusion or a need to move to Tier 3, a site-specific assessment.

77 cont.

Issue 17(B) Not Resolved:
This comment was not addressed and the POG requests Ecology's reconsideration of this issue.

1282

(C) The POG met with Nigel Blakley on May 13, 1998 to discuss TPH and its role in the eco terrestrial evaluation process. Dr. Blakley elected to keep current Method A TPH concentrations of 100 mg/kg and 200 mg/kg for GRO and DRO (Table 7) respectively due to the absence of scientific information to raise the TPH cleanup levels for terrestrial effects. The POG expressed its concern that the pilot rule was and is still currently written to include these TPH concentrations at both industrial and sensitive habitat sites. At the meeting, Nigel agreed that he was more concerned about this concentration in sensitive habitats and expected that the off ramp questions would exclude industrial areas like the Duwamish corridor. The POG would like to propose that this section be revised so that the 200 mg/kg concentration is not applicable in industrial areas like the Duwamish. We anticipate that Method A soil cleanup levels (Tables 740-1 and 745-1) would be sufficiently protective of wildlife in industrial areas.

Issue 17(C) Partially Resolved.
The POG finds the petroleum cleanup levels for commercial/industrial sites included in Tables 749-2 and 749-3 to be reasonable and acceptable, although it also recognizes that they reflect values that are within ranges, as opposed to precise values, and that it may be able to refine the cleanup levels as additional scientific information becomes available.

1283

18. Issue: Page 147, Equation 750-3, Equation to calculate air cleanup levels for petroleum mixtures.

Comment: The POG recommends deleting Equation 750-3 because no analytical method exists for TPH fractions at this time. Even though it may be easy to develop a method, it would still take some time to both test the new method and apply it to some pilot sites. Deleting the equation does not prevent a user from calculating a petroleum air cleanup level if a method is developed in the future. The equation could be incorporated into TPH guidance for this purpose.

Issue 18 Resolved/New Language Under Review.
Equation 750-3 was deleted, as recommended by the POG. New language was added (173-340-750(3)(b)(ii)(C)) addressing requirements for determining air cleanup levels for petroleum mixtures. The POG has provided comments on the new language in Attachment II, Issues 27 and 28.

78

19. Issue: Method A Tables 720-1, 740-1, and 745-1. The draft MTCA tables include CULS for mineral oil with PCBs.

Comment: The POG recommended that electrical insulating mineral oil cleanup levels not be provided in Method A Tables if PCBs were present in the mineral oil, due to the complexities introduced by the presence of PCBs. The POG stands with its original recommendation, i.e., that electrical insulating mineral oil containing PCBs be evaluated separately from any other chemical or chemical mixture on the Method A tables, and that it is inappropriate to have Method A cleanup levels for electrical insulating mineral oil which contains PCBs.

NOTE: It appears that the electrical insulating mineral oil plus PCB Method A cleanup levels were derived by Ecology by accounting for the reference dose for Aroclor 1254, with the intention of not allowing the hazard index for the mixture of mineral oil and PCBs to exceed 1.0. (The cancer effects of PCBs are controlled by a separate PCB CUL in the tables.)

78 cont.

This approach might be logical if 1) the mineral oil CULs were based on direct contact with the contaminated media; and 2) the non-cancer effects of PCBs were similar to those of the chemical constituents in mineral oil. For the two soil CUL tables, 740-1 and 745-1, neither of those criteria is true. The mineral oil CULs for soils are based on residual saturation concentrations in soil, to protect groundwater. For the Method A groundwater table, 720-1, the mineral oil CUL is based on direct contact toxicity (i.e., as drinking water), but the non-cancer effects of PCBs and mineral oil hydrocarbons should not be considered as additive since they are based on different modes of toxicity. That is standard risk assessment practice.

Issue 19 Partially Resolved.
Ecology did discontinue its earlier assumptions regarding the additivity of the noncancer hazards of PCBs and mineral oil constituents, as recommended. The POG also recommended, and continues to recommend, that Method A cleanup levels should not be provided for electrical insulating mineral oil cleanup levels containing PCBs. The assumption (found in footnotes to Method A tables and to Table 830-1) that releases of mineral oil containing less than 50 ppm PCBs, based on "recent testing" of the mineral oil, would not exceed the Method A cleanup levels for PCBs in either soil or groundwater, apparently is an untested theory. The POG does not agree that such a demonstration should, on its own, constitute an exemption from testing groundwater or soil contaminated with mineral oil for PCBs. The POG strongly urges Ecology to sever the issues of PCBs and TPH in environmental media, in order to ensure protection of human health and the environment, and to maintain the integrity and credibility of the department's overall approach to evaluating TPH releases.

1284

20. Issue: Table 720-1, Method A groundwater: Ecology has proposed a CUL for xylenes based on aesthetic properties, which is lower than the MCL.

Comment: The POG did not recommend for or against this, as the consensus was that we were taking no stand on CULs based on aesthetic considerations. Any notes or footnotes attributing this value to a POG recommendation should be deleted. [Note: the POG did recommend the use of EPA's Consumer Acceptance and Health Advisory level for MTBE, which considers both aesthetic and health implications because it was not scientifically practicable to establish a single health-based concentration, based on existing studies.]

Issue 20 Resolved.
This issue was resolved, inasmuch as Ecology deleted an indication that the POG had recommended the groundwater cleanup level for xylenes. However, the proposed language gives a new reason for the cleanup level. Previously, aesthetic considerations were cited; currently, a need to not exceed the TPH cleanup levels is given as the justification for the total xylenes cleanup level. This was not a POG recommendation.

79

21. Issue: Tables 720-1, 740-1, 745-1, and 830-1. Inclusion of TPH hazardous substances that may be associated with petroleum mixtures

Comment: As recommended by the POG, the TPH indicators MTBE, naphthalene, ethylene dibromide and ethylene dichloride were included in Table 830-1. Method A tables include values for all of these except ethylene dichloride. The POG recommends that Method A numbers for this chemical be included.

Issue 21 Not Resolved.

79 cont.

The POG continues to recommend that all hazardous substances on Table 830-1 be included in Method A tables, adjusted as appropriate for natural background and/or PQLs. MTBE and naphthalene have been removed from Method A soil tables since the December 1998 draft proposed amendments, and EDC still is not included. In addition to the inconvenience of not having Method A cleanup levels provided for some of the Table 830-1 hazardous substances, the POG is concerned that Method A may not be available to owners who have TPH sites also contaminated with any of the hazardous substances on Table 830-1 for which Method A cleanup levels are not provided. The language at 173-340-704(1)(b) (Use of Method A) states that Method A may be used at "[s]ites where numerical standards are available in this chapter or applicable state and federal laws for all indicator hazardous substances in the media for which the Method A cleanup level is being used." A site where, for example, soil is contaminated with gasoline range organics and MTBE would be ineligible to use Method A, since not ALL the indicator hazardous substances in the soil have numerical standards in Chapter 173-340 or in applicable state or federal laws.

1285

22. Issue: Tables 740-1 and 745-1, Method A soil cleanup levels, carcinogenic PAHs.

Comment: Footnotes "o" on each table indicate that the cPAH cleanup levels were based on benzo(a)pyrene and protection of ground water for drinking water use, using the procedures described in WAC 173-349-747(2), and adjusted for the practical quantitation limit for soil. It is not clear to the POG whether the partitioning characteristics of benzo(a)pyrene were used to represent the potential migration of all the cPAHs, including ones which more readily migrate, or if so, whether Ecology determined that this would be protective. In addition, it is noted that the footnote would be more informational if it indicated the calculated value, before the adjustment for the PQL. The POG would like the opportunity to review the soil cPAH calculations before we concur with the cPAH Method A soil cleanup levels.

Issue 22 Not Resolved.
This issue has changed, in that the soil cleanup level for cPAHs in Table 740-1 is now based on direct contact in the proposed amendments.. Extensive comments on the manner in which cPAH cleanup levels were derived for Tables 720-1, 740-1 and 745-1 are in New Issues, Attachment II, Issue 31.

1286

23. Issue: Table 720-1, Method A groundwater cleanup level, carcinogenic PAHs.

Comment: Footnote "r" indicates that the cleanup level, based on the equation for direct contact (drinking water), "is a total value for all carcinogenic PAHs." It does not indicate whether the cancer potency factor was based on benzo(a)pyrene, or something else. It is recommended that this footnote be amended to clarify this. It is also recommended that, for informational purposes, the calculated value before adjustment for the PQL be given. The POG would like the opportunity to review the groundwater cPAH calculations before we concur with the cPAH Method A groundwater cleanup levels.

Issue 23 Partially Resolved:
The cleanup level for cPAHs in ground water is now based on ingestion alone, with no adjustment for the PQL. The POG requested and received information from Ecology regarding its method of calculating this cleanup level. POG comments on the manner in which Ecology derived the cPAH cleanup levels for ground water and soil are included in New Issues, Attachment II, Issue 31.

1287

24. Issue: Tables 740-1 and 745-1: Proposed Method A soil cleanup levels for BTEX compounds based on 3- phase partitioning models are much lower than the existing MTCA Method A soil CULs. In addition, cleanup levels for benzene and naphthalene may create unreasonable expectations for cleanup.

Comment: Use of the 3-phase partitioning approach has caused Method A soil cleanup levels for petroleum constituents to go down in the following manner: Benzene (0.5 mg/kg to 0.02 mg/kg; Toluene (40 mg/kg to 6.3 mg/kg); Ethylbenzene (20 mg/kg to 5.3 mg/kg); Xylenes (20 mg/kg to 8.4 mg/kg); naphthalene (none in Method A to 3.1 mg/kg). While the POG endorses the use of the 3-phase partitioning approach for MTCA, it is widely held that the 3-phase partitioning model overestimates migration through media for chemical mixtures such as petroleum, particularly with the conservative default parameters recommended in 747(2). According to Hun Seak Park (PLIA), the naphthalene and benzene proposed CULs will be impracticable to achieve. In order to avoid undue hardship to site owners who prefer to use Method A exclusively, some members of the POG have recommended that Ecology retain the current Method A numbers for BTEX. However, to prove that current MTCA BTEX soil CULs are not causing groundwater contamination, the POG recommended that Ecology review old site reports for evidence in either direction. If such a demonstration can be made to Ecology's satisfaction and if the assumption of adequate protectiveness appears to be correct, the POG would then recommend that the existing Method A cleanup levels for BTEX be retained. Since there are no existing Method A soil cleanup levels for naphthalene, and the proposed levels are very low, the POG anticipates that site owners with significant soil naphthalene levels would need to utilize options other than Method A soil cleanup levels to achieve compliance with MTCA.

Issue 24 Partially Resolved.
Ecology changed a number of the parameters and assumptions related to the derivation of these soil cleanup levels. The POG's revised comments on Method A soil cleanup levels are included in Attachment II, Issue 29, items 1 and 2.

1288

25. Issue: Table 830-1, Required Testing for Petroleum Releases.

RESERVED: The POG continues to work with Floyd & Snider and Ecology in developing changes to this table. We believe that if Ecology agrees to accept the final work product on this task (with POG concurrence), a revised Table 830-1 can be submitted that will be more helpful to all involved.

The POG recommends that 1- methylnaphthalene and 2-methylnaphthalene be evaluated as having the same inhalation toxicity as naphthalene, due to their structural and activity similarities. Because the oral toxicities of naphthalene and pyrene are so similar, the POG recommends the inclusion of naphthalene, 1-methylnaphthalene and 2-methylnaphthalene in the VPH or EPH fractionated analysis (as opposed to being quantified as an individual fraction for calculation of a cleanup level for dermal and/or ingestion exposures. However, the naphthalenes should be evaluated as a unique fraction, if equation 730-3 (POG recommended removal – see Issue 18) is retained in the proposed rule, due to their significantly higher toxicity via inhalation.

Issue 25 Partially Resolved.
POG comments on the current version of Table 830-1 are provided in Issue 32, Attachment II.

80

26. Issue: 747 Flowchart [Deriving Soil Concentrations for Ground Water Protection]: Although Ecology has agreed that leach tests may be applicable to TPH contaminants in soil (and leach testing may be done as part of an empirical demonstration), the flowchart appears to expressly prohibit leach tests for all contaminants except metals. This could cause confusion for site managers.

Comment: Add the following footnote to the words "Metals Only" contained in the box under "Leach Tests": " Leach Tests for TPH and/or associated indicator hazardous substances may be performed on a site-specific basis as part of an empirical demonstration."

Comment Rescinded:
Ecology has indicated that flow charts cannot be considered part of the rulemaking. POG recommends the use of flowcharts in guidance documents.

1289

27. **Issue: Page 84, Section 173-340-708(7)(d)(e) and (f); Reference doses and reference concentrations:**

The POG recommends that provisional values developed by EPA's National Center for Environmental Assessment be included with HEAST and IRIS values. EPA intends to phase out HEAST and replace it with publicly available provisional values. Many are already available through EPA's regional offices. In addition, a number of the POG's decisions regarding the selections of fractions and their associated toxicity values for TPH evaluation were made with NCEA assistance.

Issue 27 Resolved.

Attachment II
New Issues

The following are TPH Project Oversight Group (POG) consensus comments to the language in the proposed amendments to MTCA, dated November 1999. These comments are in addition to those the POG submitted to Ecology based on the draft proposed MTCA amendments, which were published in December 1998. The POG's evaluation of the Department of Ecology's responses to the POG's earlier comments is presented in Attachment I.

The pages referenced in Attachment II reflect page numbers in the November 1999 Proposed Amendments, available as an Adobe® format (pdf) file on Ecology's web page. They do not reflect page numbers in the version published in the Washington State Register, Issue 99-32, Publication No. ECY 99-606.

81

Issue 1A
200, Page 10, Definitions, Aromatic hydrocarbons

The proposed definition of aromatic hydrocarbons is

> ...organic compounds that are characterized by one or more benzene rings.

It is suggested that the definition be changed to the following:

...relatively stable cyclic organic compounds containing a delocalized electronic structure. For purposes of evaluating TPH using the fractionation approach, aromatic compounds include alkyl-substituted compounds such as toluene or 2-methylnaphthalene, but do not include compounds with substitutions by other elements, such as 1,4-dichlorobenzene.

The proposed definition of aliphatic hydrocarbons is:

...organic compounds that are characterized by a straight, branched, or cyclic arrangement of carbon atoms.

It is suggested that this be changed to the following:

...Organic compounds primarily composed of carbon and hydrogen, including alkanes, alkenes, alkynes and cyclic organic compounds (such as cyclohexane) which do not contain delocalized electronic structures. For purposes of evaluation of TPH using the fractionation approach, aliphatics include alkyl-substituted compounds (such as 2-methyl pentane) but do not include compounds with substitutions by other elements (such as cis-1,2-dichloroethene).

82

Issue 1B
200, Page 12, Definitions, Direct contact

82 sent.

The existing definition of direct contact is

...exposure to hazardous substances through ingestion or dermal contact.

It is suggested that this be changed from "ingestion or dermal contact" to "ingestion and/or dermal contact," since ingestion and dermal contact both must be evaluated for TPH-contaminated soil in the proposed changes to MTCA. Dermal contact must be evaluated for other substances under specified circumstances.

83

Issue 2
200, page 13, Definitions, Equivalent carbon number

The proposed definition is:

> ...a value assigned to a component of a petroleum mixture, empirically derived from the boiling point of the component normalized to the boiling point of n-alkanes or the retention time of n-alkanes in a boiling point gas chromatography column.

The POG recommends substituting the word "fractions" for "components," as "components" implies that hazardous substances that may be associated with TPH are assigned EC numbers. The term "EC fractions" is consistent with the manner in which equations for determining TPH cleanup levels are presented in sections 720 and 740.

84

Issue 3
200, Page 17, Definitions, Natural biodegradation

It would be preferable to refer to "human intervention" rather than to "man's intervention" in this definition.

85

Issue 4
200, page 17, Definitions, Natural Attenuation

The definition includes the statement that "natural attenuation is not an active measure."

The POG concurs with an explanation of natural attenuation given in a USEPA policy document ("Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites," June 9, 1997), which states that monitored natural attenuation is not a "no action" or "walk-away" solution, but that it may be "an alternative means of remediation that may be appropriate for a limited set of site circumstances." Source control is considered to be a crucial component of remedial actions which must be taken before monitored natural attenuation can be included as part of the final remedy.

The POG recommends that the definition be entitled "Monitored natural attenuation" and that the statement "[N]atural attenuation is not an active remedial measure" be deleted from the definition. The POG views natural attenuation as an important option in remediating certain TPH-contaminated sites, such as those in the Duwamish corridor and other Brownfields areas in the state.

86 **Issue 5**
350(12)(d), page 47, Input parameters

This paragraph directs the reader to 173-340-708(10) for "input parameters" that may be modified for establishing remediation levels. The term "input parameters" is not used in 173-340-350(12)(d); rather, the term "exposure parameters" is used. "Input parameters" also is not defined in the definitions section of the rule. The POG suggests replacing the term "input parameters" with "exposure parameters" for consistency and clarity.

87 **Issue 6**
370(6), page 59, Expectations for cleanup action alternatives

This states that, for facilities adjacent to a surface water body, Ecology "expects that dilution will rarely be the sole method for demonstrating compliance with cleanup standards." This appears to conflict with page 179, 173-340-730(6)(b), which states: "Where hazardous substances are released to the surface water as a result of ground water flows, no mixing zone shall be allowed to demonstrate compliance with surface water cleanup levels." The latter is not new language, except that the term "mixing zone" previously was "dilution zone." On page 166, 720(9)(d)(i)(C), which deals with points of compliance for sites abutting surface water, it is stated: "Use of a mixing zone under WAC 173-201A-1to demonstrate compliance with surface water cleanup levels shall not be allowed." Again, "mixing" is a new term, having been substituted for the previous word "dilution."

It is not clear to the POG whether the use of the term "dilution" in the first cited passage means the same as "mixing zone" or something different. This is particularly confusing since the use of "mixing zone" has been substituted for the prior use of "dilution zone" in the second two cited passages. The POG recommends that the meaning of the language in 173-340-370(6) be clarified, in particular as to whether it does or does not conflict with the language in 173-340-720 and -730, cited above.

88 **Issue 7**
440(4)(d), page 74, Institutional Controls

This now reads:

> The cleanup level is based on the assumption of land use other than residential, such as industrial or commercial.

For clarification of Ecology's intentions, the POG recommends that the sentence be modified as follows:

> The cleanup level is based on any exposure parameters other than residential.

89 **Issue 8**
450(6)(a)(ii), page 81, Releases from Underground Storage Tanks

89 cont.

This requires that a remedial investigation and feasibility study be conducted when "[F]ree product is found". The POG recommends substituting the following language: [when] "[F]ree product removal is not achieved according to (4)(a)."

90

Issue 9
700(5)(b), page 115, Method B Universal Method

This states that Method B is the "universal method" and can be used "at all sites." There should be a clarification that, for substances for which Method B cleanup levels cannot be calculated, but for which cleanup levels are available in Method A tables, that the Method A cleanup levels are to be used. Examples of chemicals for which Method B cleanup levels cannot be calculated are MTBE in ground water and lead in any medium. There should be a similar provision in 173-340-700(5)(c), which discusses Method C.

91

Issue 10
700(8)(b)(ii), page 121, Method B and Method C tiered approach

The first sentence reads as follows:

> This chapter provides for a three-tiered approach for establishing Method B and Method C cleanup levels at sites that involve a release of TPH.

It is recommended that this sentence be revised as follows (changes in italics):

> This chapter provides for a three-tiered approach for establishing Method B and Method C tiered cleanup levels *and remediation levels* at sites that involve a release of TPH."

This will clarify that the TPH tiered approach may be used to calculate cleanup and remediation levels.

92

Issue 11
700(8)(b)(ii)(B)(II) and (III), pp 122, Specific procedures for setting cleanup levels at petroleum contaminated sites

The POG believes that the following sentence, which is present in both subsections, does not add benefit to the discussion of procedures for establishing cleanup levels, and instead could add confusion; and therefore recommends its deletion:

> Consideration of current and future site uses may be considered in establishing remediation levels.

93

Issue 12
702(16)(b), page 126, Criteria for quality of information

This paragraph states, in part, the following:

93 cont.

> When deciding whether to approve or require modifications to the default methods or factors specified in this chapter for establishing cleanup levels and remediation levels or when deciding whether to approve or require alternative or additional methods or factors, the department shall consider information submitted by all interested persons and the quality of that information. When evaluating the quality of the information the department shall consider the quality of the information the department shall consider the following factors, as appropriate for the type of information submitted: (i) Whether the information is based on a theory or technique that has widespread acceptance within the relevant scientific community; etc.

It appears that the first two uses of the term "factors" should actually refer to the term "exposure parameters," a defined term in this chapter. The third, generic use of "factors" in this paragraph is appropriate. It is recommended that the first two references to "factors" be changed to "exposure parameters."

94

Issue 13
708(3)(d), page 135, Reasonable maximum exposure

(a) It appears that the word "scenarios" was intended to be placed after the term "potential future site exposure" in the second sentence, but was left out. If this is the case, it is recommended that the word "scenarios" be inserted at that location.

(b) It is difficult to distinguish between land use and the exposure assumptions associated with a specific land use in this paragraph. It suggests that one cannot use Method A or B for land uses other than residential and industrial. The following sentences from this paragraph are an example:

> Land uses other than residential and industrial, such as agricultural, recreational, and commercial, shall not be used as the basis for a reasonable maximum exposure scenario for the purpose of establishing a cleanup level. However, these land uses may be used as the basis for an alternate reasonable maximum exposure scenario for the purpose of developing a remediation level.

The POG recommends that this language be deleted from the paragraph as unnecessary and potentially confusing to the reader.

95

Issue 14
708(7)(f), page 138, Reference doses

The EPA document which should be cited for development of reference doses is: "Reference Dose (RfD): Description and Use in Health Risk Assessments: Background Document 1A, March 15, 1993." It is available on the Internet at <http://www.epa/gov/iris/rfd.htm>.

96

Issue 15
720(4)(b)(iii), page 158, and 720(5)(b)(iii), page 161, Free product limitation

This free product limitation language applies only to ground water cleanups under Methods B and C, as written. The POG recommends that it also apply to ground water cleanups under Method A. [Note: Additional comments pertaining to this language are included in Attachment I, Issue 16.]

97

Issue 16
730, pages 172-181, Surface water cleanup standards for TPH

Ecology has added considerable TPH-specific language that was not recommended by the POG. The POG recommended that, since there are no federal or state surface water criteria specific to TPH, and there are no bioconcentration factors for TPH fractions that would allow for a calculation of a surface water cleanup level, that the ground water cleanup levels for TPH in Table 720-1 (Method A) be the default cleanup level for TPH in surface water for the protection of human health.

The POG offers the following specific comments on the new TPH language in section 730:

1. Add a new paragraph, (iv), under 730(2)(b) (Method A), which reads: "For TPH, a concentration that does not exceed the TPH cleanup levels provided in Table 720-1."

2. Delete 730(3)(b)(iii)(C) and 730(4)(b)(iii)(C). It is not possible to use Equation 720-1 for TPH since bioconcentration factors for the fractions are unavailable, and it is unnecessary to have a separate subsection for hazardous substances that may be associated with the TPH, because they are covered in 730(3)(b)(iii)(A) and (B) and 730(4)(b)(iii)(A) and (B) (surface water cleanup levels for noncarcinogens and carcinogens). The POG also is concerned that the inclusion of this equation for petroleum could be construed to infer that the cleanup level calculated using it (assuming appropriate fraction-specific BCFs are developed in the future) would be protective of human health and the environment. In fact, ecological receptors are more at risk from the presence of petroleum in surface waters than are humans. The POG encourages Ecology to concentrate its efforts to address petroleum and surface water on ecological receptors.

98

Issue 17
730(b)(v), page 176, Free product limitation

The free product limitation language written by Ecology for ground water cleanup levels has been incorporated into surface water cleanup levels. The POG is concerned that among other things, allowing the use of TPH solubility limits for complying with the free product limitation, instead of just physical observations of sludges, emulsions or sheens, could undermine, or give the impression of undermining, the federal and state prohibitions on petroleum releases to surface water, which rely specifically on those physical observations. The POG recommends that the following changes be made:

1. Change "petroleum products" to "TPH" or "petroleum hydrocarbons" to comport with the definitions in the rule.

98 cont.

2. Delete the word "discoloration" in the second sentence, as it is an inappropriate criterion for a surface water standard.

3. The third sentence reads: "The solubility limit for the hazardous substance may also be used to determine compliance with this requirement." Petroleum should be excluded from this provision, as the solubility limits of petroleum mixtures in the environment are difficult to estimate accurately, and it is possible that using solubility limits to demonstrate the lack of free petroleum product could result in a violation of the state and federal prohibitions concerning petroleum releases to surface water.

4. The limitation on free product should be applicable to cleanups conducted pursuant to Method A in addition to Methods B and C.

99

Issue 18
730(6)(b), page 179, Point of compliance

The reader is directed to 173-340-720(10)(d) for requirements regarding sites where contaminated ground water flows into surface water. That subsection deals with statistical procedures. It appears that the reference should be to 173-340-720(9), which deals with points of compliance.

100

Issue 19
740(2)(d)(2), page 184, Method A soil cleanup levels

Language should be included to state that sites which have cleaned up to Method A soil levels throughout the site are presumed to have addressed soil vapors. Such language was included in the December 1998 draft proposed amendments but appears to have been eliminated.

101

Issue 20
740(3)(b)(iii)(B), page 188, and 745(5)(b)(iii)(B) page 207

These subsections deal with soil cleanup levels under Methods B and C for carcinogens; therefore, the words "other than petroleum" should be deleted. Cleanup levels for carcinogenic substances associated with a petroleum mixture must be determined using the appropriate equations provided in these sections.

102

Issue 21
740(3)(c)(iii), page 192, Modified Method B soil cleanup levels, Dermal contact

The last sentence in this paragraph states:

> When conducting this evaluation the following equations and default exposure assumptions shall be used.

102 cont. It is recommended that the words "or chemical-specific" be added after "default," because the conditions of Equation 740-4 allow for the use of chemical-specific or default dermal absorption fraction values.

103 **Issue 22**
740(3)(b)(iii)(C), page 190, and 745(5)(b)(iii)(C), page 209:

The POG participated in the development of the soil cleanup equations for petroleum presented in these subsections, and endorses the inclusion of dermal contact with ingestion in the calculation of cleanup levels for direct contact with soil, for both standard and modified Methods B and C.

104 **Issue 23**
740(3)(c)(iv)(B), page 194, Modified Method B soil cleanup levels and 745(5)(b)(iv)(B), page 210, Method C industrial soil cleanup levels

An additional bullet item is recommended, as follows, in addition to the others, which delineate when soil cleanup levels can be assumed to be protective of air pathways, as follows:

> The conceptual site model indicates that vapors cannot reach receptors.

105 **Issue 24**
740(3)(c)(iv), page 194, and 745(5)(b)(iv), page 210, Soil vapors for Methods B and C

New language proposed by Ecology for soil vapors incorporated some of the recommendations contained in the POG consensus letter of September 21, 1999. However, important portions were omitted, including the following:

1. The requirement to evaluate soil vapors when TPH containing less than 8% volatiles by weight is present in soil at levels exceeding 10,000 mg/kg and which meet certain building proximity stipulations was retained from the December 1998 draft proposed amendments. However, there now is no language explaining that, in the presence of more than 8% volatiles, soil cleanup levels will be determined on a site-specific basis. It is recommended that language addressing sites where TPH in soil exceeds 8% volatiles by weight be specifically included in the rule. [Note: It is recommended that the term "petroleum distillates" in these subsections be replaced with the term "total petroleum hydrocarbons." "Petroleum distillates" is not a defined term in the rule.]

106 2. The POG believes that in most cases where an indoor air pathway is being assessed, that assessment would be protective of ambient air quality. Therefore, the language originally proposed by the POG (excluding the requirement to measure ambient air where indoor air is shown to be the more protective point of exposure) should be included.

107 The POG offers the following additional comments regarding the proposed language on soil vapors:

107 cont.

3. The words "other than total petroleum hydrocarbons" should be inserted in parentheses after the words "When the soil cleanup level for a volatile hazardous substance is based on protection of ground water..." in the second bullet items on pages 194 and 210. This is suggested because the first bullet item is specific to the conditions under which soil vapors must be evaluated at TPH-contaminated sites.

108

4. Requirements to evaluate soil vapors should be limited to those sites (and corresponding conceptual site models) where potential vapor exposure pathway(s) are identified and the soil cleanup levels are high enough that indoor air or ambient air concentrations could pose a significant exposure. The current language does not consider whether or not actual pathways are identified, triggering an evaluation based solely on the soil cleanup level.

109

5. Measurement of the soil vapor concentrations: The wording should be changed as follows, for clarification purposes: "... using methods approved by the department, demonstrating vapors in the soil between the source and the point of compliance ~~building~~ would not result in the exceedance of ~~exceed~~ air cleanup levels at the point of compliance established under WAC 173-340-750."

110

6. The POG recommends that (740)(3)(c)(iv) and (745)(5)(b)(iv) stipulate which soil exposure parameters may be changed which could result in "soil cleanup levels that are high enough that indoor air or ambient air could become a significant potential exposure pathway." It appears that only air-filled porosity, dilution factor, inhalation correction factor, soil GI absorption and inhalation absorption are exposure parameters which are allowed to be altered that could significantly impact soil CULs. Other parameters would be allowed only for the determination of remediation levels. It is recommended that this be made clear in the rule language.

111

Issue 25
740(3)(c)(iv)(A), second bullet item, page 194, and 745(5)(b)(iv)(A), second bullet item, page 210, Soil vapors for Methods B and C

The reference to site-specific risk assessment for nonpotable ground water under 173-340-720(8) does not appear to be appropriate to the subject matter. The POG suggests that this should reference 720(7).

112

Issue 26
747, pages 215-226, Deriving Method B soil concentrations for ground water protection

The POG has developed suggested changes in the arrangement of how 747 is presented as well as certain specific changes in the requirements and allowances contained in the section. These are presented as Exhibit A, Recommended Language for Section 747. Following is an itemization of the major changes suggested, as they are reflected in Exhibit A:

1. Re-title Section to indicate it is applicable to both Method B and Method C. There is no reason to exclude the 4-phase model from the Standard Methods (B and C). Modify the available options under Standard and Modified methods so both the 3-phase and 4-phase models are available under each. The logical approach is to allow both models under Standard Methods B and C – used with default parameter values. Site-specific parameter

112 cont values would then be allowed under Modified Methods B and C. Reorganize the text to reflect this overall approach.

113 2. Where necessary, edit the descriptions of the models and variable definitions to make sure the reader understands they are not limited solely to TPH mixtures. The text should be clear that 4-phase models are applicable only when a substance or substances are present which have the potential to form NAPL. As written, no distinction is made between 3-phase and 4-phase models in terms of applicability (except that the 4-phase model is limited to the modified method). The description of procedures for the use of the 4-phase model should not be specific only to petroleum hydrocarbons, as it is currently presented in the proposed rule. It should be usable for sites with all manner of potentially NAPL-forming substances. The explanation of elements of the various equations in 747 should be consistent in referring to "each chemical or EC fraction, for TPH" instead of references to "NAPL components" which are confusing as to meaning.

114 3. The description of the 3-phase model implies that it can be used for petroleum hydrocarbons. However, as Equation 747-1 is presented, there is no methodology for using TPH fractions. It is suggested that the following language be incorporated after Equation 747-1 "For TPH mixtures using the TPH fraction approach, the three-phase partitioning model should be applied such that the resulting concentrations of individual fractions and associated noncarcinogenic volatile hazardous substances (see Table 830-1) in ground water do not exceed a hazard index of 1.0 Fraction-specific soil organic carbon-water partitioning coefficients and Henry's law constants, as provided in Table 747-3, must be used." A TPH-specific equation could also be provided.

115 4. Except for Table 747-2, the subsection on residual saturation should be applicable to all potentially NAPL-forming chemicals.

116 5. Under Modified Method B/C: Provide a list of parameters common to both the 3- and 4-phase model, with discussions of how the parameter may be derived (this is done now, but it appears in two places, once under the 3-phase model description, and once under the 4-phase description and there is some lack of consistency). A separate list can follow for parameters specific to an individual model. Be sure the user can readily understand which parameters are considered "hydrogeologic parameters".

117 6. The text should warn the potential user that mixtures containing chemicals with widely different solubilities may not be appropriate for the fate and transport models, and that serious errors may occur with such use.

118 7. The use of Modified Methods B and C for TPH should stipulate that site-specific EC fraction data must be used as inputs to models, i.e., that retrofitting of data or assumptions of product compositions is not permissible. Correlation should be allowed, however.

119 8. Move the prohibition of NAPL to the front of the section, so it is readily apparent and so that it does not need to be repeated in subsections.

120 9. Check the numbering of the equations and tables. Tables referred to as 747-3 and 747-4 in the text and appearing at the end of the rule are numbered as Tables 747-1 and 747-2.

120 cont.

Equations numbered 747-2 and 747-4 are present, but no equation numbered 747-3, although it is referred to in the text (apparently as mistaken references to 747-2).

121

10. The allowance for empirical demonstrations at 747(4)(d)(I)(A) should specifically include direct measurement of ground water flow rate (Qa), if such data are available.

122

11. Table 747-2 (footnote). The footnote indicates the screening levels are "for coarse sand and gravelly soils only." This would seem to imply that it could not be used for silts, clays, fine sands etc. This needs to be changed to indicate that it simply is instructional as to what assumptions were made in deriving the screening levels.

123

12. 1Language at 747(3)(b)(iii) describing Leaching Tests: Subsection (iii) should be changed to say that if leaching tests using methods other than those prescribed in (i)(A) and (B) are used, they shall be based on methods approved by the department. As written, all methods must be approved by the department.

124

13. The subsection on residual saturation should be changed to apply to hazardous substances that can potentially form NAPL, in addition to TPH, with the exception of Table 747-2, which is specific to TPH. Suggested language for this change is included in Exhibit A.

125

Issue 27
750(2)(b)(ii), page 241, Method A air cleanup levels

This states the following:

> For a hazardous substance deemed an indicator hazardous substance under WAC 173-340-708(2) and for which there is no value in applicable state and federal laws, a concentration that does not exceed the natural background or the practical quantitation limit, subject to the limitations in this section.

This would appear to require that owners of properties where a TPH release to soil has occurred, must measure air concentrations under all circumstances, in order to make a demonstration that soil concentrations have not caused exceedances of TPH in air greater than natural background or PQLs. The POG recommends that this requirement be deleted. It is understood that it is the same language included for Method A ground water, surface water and soil cleanup requirements; however, the POG suggests that the requirement to sample air should require a different threshold than for other media.

126

Issue 28
750(3)(b)(ii)(C), page 242, Method B air cleanup levels for petroleum mixtures, and
750(4)(b)(ii)(C), page 244, Standard Method C air cleanup levels for petroleum mixtures

These paragraphs require that air cleanup levels for petroleum be calculated using Equation 750-1, adjusting it to account for petroleum fractions and associated volatile hazardous substances. The POG recommends that these paragraphs be deleted unless reliable sampling and analysis methods exist for evaluating TPH in air. Section 830 (Analytic procedures, 173-

126 cont.

340-830(3)(f), analytical methods for TPH in air), states that methods will be selected on a "case-by-case basis," implying that no standard analytical procedures exist or have been identified or developed. If Ecology later determines that reliable sampling and analysis procedures exist for evaluating TPH in air, Equation 750-1 could readily be adapted for use with TPH fractions and associated volatile hazardous substances, if and when such methods become available. Retaining these paragraphs when such methods are unavailable would serve to confuse the owner as to how to comply with MTCA regulations.

127

Issue 29
Table 720-1, Method A Cleanup Levels for Ground Water

1. The POG does not endorse the proposed ground water cleanup levels for Diesel-Range Organics (DROs), Heavy Oils and Mineral Oil, because it believes that Ecology's proposed cleanup levels are not based on SAB- or POG-recommended methods of using a four-phase partitioning model to obtain Method A ground water cleanup levels. This subject is discussed at length in Exhibit B to this attachment.

128

2. A footnote should be added for TPH that references 173-340-720(4)(b)(iii), the paragraph covering free product limitations for petroleum releases using Methods B and C, as it also should be applicable to Method A TPH ground water cleanups. It also should be included in 720(3), Method A cleanup levels for drinking water aquifers flowing into nearby surface water.

129

3. Footnote x (Total Petroleum Hydrocarbons) indicates that the Method A ground water cleanup values are based on mid-range estimates of the composites of the various petroleum products. The user is directed to Method B or C for products with significantly different compositions. This information is valuable only if the user is directed to a location where the product compositions appropriate to the Method A values is provided. Otherwise, the user would have no way of knowing whether the Method A TPH ground water numbers are appropriate for a particular site. The POG suggests that this information be provided in a table in the rule.

130

4. The POG disagrees with the fourth bullet item in Footnote x, which does not require analysis of ground water contaminated with mineral oil if "it can be documented that the oil released was recently tested and found to contain less than 50 ppm total PCBs." Details concerning the POG's disagreement with this are given in Attachment I, Issues 19 and 25.

131

Issue 30
Table 740-1, Method A Soil Cleanup Levels for Unrestricted Land Uses; and Table 745-1, Method A Soil Cleanup Levels for Industrial Properties

1. Footnote c indicates that the cleanup level in the tables is appropriate only for benzene contained in weathered gasoline releases. A Method A soil cleanup number is needed for non-weathered gasoline spills as well as for weathered gasoline. The POG evaluated this matter and determined that the use of the same 3-phase model used by Ecology for determining the cleanup level for benzene in weathered gasoline would result in the same cleanup level for benzene in fresh gasoline. This is apparently because benzene is the risk driver in both cases. The POG recommends that Footnote c be amended to delete the word

131 cont. "weathered" prior to "gasoline" and to delete the second sentence stating that the value may not be protective of ground water for fresh gasoline. However, the POG recommends that there be an added statement directing owners of sites where there have been releases of benzene as a "pure" or commercial-grade product (i.e., not as part of a TPH mixture) to Section 747 for the determination of soil benzene cleanup levels protective of ground water.

132 2. The POG agrees that soil cleanup levels for ethylbenzene, toluene, and xylenes were calculated correctly for pure products (not mixtures). It is not clear whether the soil cleanup levels for xylenes are based on a risk-based number (or the MCL) in ground water, or on the ground water cleanup level for xylenes given in Table 720-1. Footnote t in Tables 740-1 and 745-1 states that they are "based on protection of ground water for drinking water use..." The POG recommends that Ecology indicate in footnote t precisely what ground water concentration the cleanup levels for xylenes in soil is based on.

133 3. The POG disagrees with item (3) in Footnote q for Total Petroleum Hydrocarbons, allowing for the assumption that PCBs which might be associated with mineral oil would not exceed PCB soil cleanup levels if "it can be documented that the oil released was recently tested and found to contain less than 50 ppm total PCBs." This item is discussed in detail in Attachment I, Issue 19.

134 4. The identification of footnotes associated with specific chemicals in Table 745-1 is in some cases inconsistent with the actual footnotes following the tables. For example, toluene is given footnote r in the table, but footnote r describes 1,1,1 trichloroethane. Toluene is described in footnote p. These inconsistencies should be corrected in the final rule amendments.

135 **Issue 31**
Tables 720-1, 740-1 and 745-1: Derivation of media cleanup levels for carcinogenic PAHs (cPAHs). [Note: this comment was developed with the assistance of Dr. Damon Delistraty, a Department of Ecology toxicologist in the Eastern Regional Office.]

Footnote r in Table 720-1 and Footnote m in Tables 740-1 and 745-1 explain that the cleanup levels were derived based on the cancer potency factor for benzo(a)pyrene (B(a)P) and the assumption that 7 cPAHs "are present in the sample." Discussion with Ecology representatives revealed that the cleanup levels were based on a multiplication of the Method-B derived cleanup level of B(a)P by a factor of 7. This effectively allows for a risk of 7E-6 in Method A, while the Method B cleanup levels reflect maximum cancer risks of 1E-6. In addition, the cancer potency of B(a)P was assumed to represent all of the other six cPAHs; and the mobility of B(a)P through soil was assumed to represent the other cPAHs as well.

The POG has concluded that the cPAH cleanup levels in Method A tables were derived incorrectly. Ecology has proposed in ((708)(8)(e)) to allow for the use of toxicological equivalence factors (TEFs) for the assessment of the cancer potency of cPAHs relative to B(a)P, using the TEFs published by CalEPA. The language in 708 does not limit the use of the TEF approach to Methods B and C (nor should it). Therefore, it should be available to users of Method A tables.

135 cont.

The POG is confident that a single cPAH cleanup number can be given in the three tables, representing the relative toxicity and mobility of the various cPAHs, while offering the owner the opportunity to evaluate his/her analytical data in a manner which is more likely to result in effective cleanup levels in soil and ground water which reflect the actual contamination at the site. This is not unlike the method proposed for TPH fractions, in which fraction-specific toxicities and (for soil cleanup levels) fraction-specific transport characteristics are accounted for to derive overall cleanup levels. Methodologies for achieving the above for ground water and soil are offered below.

136

Ground water : The Method A cleanup level for ground water should be 0.012 ug/L B(a)P toxic equivalents (TEQ), based upon the calculation of a Method B ground water cleanup level based on B(a)P alone. This corresponds to a 1E-6 excess individual lifetime cancer risk. Because of the TEF approach to evaluating the cPAHs, they are considered an "individual" contaminant, as opposed to multiple contaminants; and therefore the maximum acceptable risk of 1E-6 is appropriate and is compliant with MTCA policy. The owner should be free to assume that all cPAHs present have TEFs of 1.0, i.e., that they are as potent as B(a)P; but if that TEQ exceeds 0.012 ug/L, the owner has the option of making use of the TEF approach to determine if the TEQ calculated in that fashion exceeds 0.012 ug/L. In that case, the site-specific TEQ would be the sum of the products of the concentration of each cPAH present in the sample and its corresponding TEF. Since none of the other cPAHs has a potency as high as that of B(a)P, the effective cleanup level (in terms of total ug/L of cPAHs) will be higher than 0.012 ug/L, but the B(a)P TEQ of 0.012 ug/L will be preserved, as will the maximum acceptable excess cancer risk level of 1E-6 for an individual carcinogen, i.e., B(a)P, in this case.

137

Soil : The situation for soils is more complicated because of the soil to ground water leaching pathway, in addition to direct contact (i.e., incidental ingestion). According to Ecology, leaching pathway cleanup levels have been developed for 6 of the 7 cPAHs, using the 3-phase model. The cleanup levels and the CalEPA TEFs are given below:

CPAH	Leaching CUL, mg/kg	CalEPA TEF
Benzo(a)anthracene	0.086	0.1
Benzo(b)fluoranthene	0.43	0.1
Benzo(k)fluoranthene	0.21	0.1
Benzo(a)pyrene	0.23	1.0
Chrysene	0.10	0.01
Dibenzo(a,h)anthracene	0.43	0.4
Indeno(1,2,3-cd)pyrene	Insufficient information	0.1

Using the above, leaching equivalent factors (LEFs) could be derived by ratios, again with B(a)P as the reference compound (to be consistent with TEFs). These would be derived, for example, by dividing the leaching cleanup level for B(a)P by the leaching cleanup level for benzo(a)anthracene to calculate an LEF of 2.7 for benzo(a)anthracene. Next, a composite index for toxicity and leaching would be calculated by multiplying the LEF by the chemical-specific TEF, or 2.7 x 0.1 for benzo(a)anthracene, for an effective "toxicity leaching equivalence factor" or "TLEF" of 0.27. [Note: this is not a standard term but is suggested to help explain this

137 cont.

methodology.] No TLEF can be calculated for indeno(1,2,3-cd)pyrene because a leaching cleanup level has not been derived.

Because Ecology has determined that direct contact is the risk driver, and therefore the basis, for unrestricted soils, the cleanup level for cPAHs would be 0.14 mg/kg B(a)P TEQ, based on the Method B calculation for the ingestion of soil contaminated with B(a)P. For industrial soils, Ecology has determined that leaching is the risk driver. Therefore the Method A cleanup level would be 0.23 mg/kg B(a)P TLEQ.

In order to allow for the derivation of ground water and soil cleanup levels of cPAHs as equivalent to B(a)P, tables giving TEFs (for ground water and unrestricted soils) and TLEFs (for industrial soil) would need to be provided for the user. In addition, a default TLEF for indeno(1,2,3-cd)pyrene would need to be established by Ecology.

The POG recommends that Ecology adopt the above methodologies for establishing Method A ground water and soil cleanup levels based on B(a)P, while allowing for the owner to assess site data more reflective of Ecology's approach to toxicity and leaching. It is recognized that, in certain cases, the PQL could exceed the calculated CUL in soil and/or ground water, in which case, the PQL would be the effective CUL.

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Issue 32
Table 830-1, Required Testing for Petroleum Releases

The POG concurs with the current version of Table 830-1, with the following exceptions:

1. The inclusion of PCBs with mineral oil, as discussed in Issue 19, Attachment I.

2. Footnote (8) should be added to the cells for Naphthalenes/Gasoline Range Organics, Naphthalenes/Diesel Range Organics and Naphthalenes/Heavy Oils.

3. In footnote (12)(b), change "when the inhalation exposure pathway may be required" to "when the inhalation exposure pathway is evaluated" for clarification purposes.

4. In footnote (12)(c), delete the first sentence if footnote (8) is added to the Naphthalenes/Diesel Range Organics cell, as recommended in item 3), above.

5. Include naphthalenes with "Volatile Petroleum Components" instead of with "Semivolatile Petroleum Components," because they are defined as volatiles for the purposes of evaluating petroleum in MTCA sections 740, 745 and 750.

6. Footnote (8) should be deleted from the cell for PCBs/Heavy Oils and substituted with a new footnote which requires PCB testing only of heavy oils known to have been historically manufactured using PCBs or historically used in processes/activities known to include PCBs. Examples include transformers, railroad transformers, mining motors, hydraulic systems, heat transfer systems, electromagnets, compressors, capacitors, switches, and miscellaneous electrical devices.

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7. Change the title of the row that currently reads "TPH Analytical Methods for Use with Method A cleanup Levels" to "TPH Analytical Methods for Total TPH." Change the title of the row that currently reads "TPH Analytical Methods for Use with Methods B or C (TPH "fractions") to "TPH Analytical Methods for Use with TPH Fractions."These recommended changes are to increase the clarity of the analytical applicabilities.

8. Delete footnote (10) from the cell representing GRO and Volatile Fuel Additives and Blending Compounds, and add an "X" to the cell. Ecology's own research has demonstrated that these hazardous substances are found in this state, and geographic location of a release is not sufficient for prediction purposes. Therefore, these should be standard analytes when gasoline has been released. (If analyses over time show there is little or no reason for concern, this requirement could be amended/deleted.)

9. Amend footnote (10) language to make clear that it applies to DRO releases only.

10. Add the following language to the note "Use of Table 830-1" immediately under the table: "An 'X' signifies that the analytical requirement applies to both ground water and soil samples, when those are media of concern at a site."

Attachments: Exhibit A – Proposed Reorganization and Modification of Section 747 Language.
Exhibit B – Memorandum delineating a POG-recommended method for calculating Method A ground water cleanup levels for Diesel Range Organics and Mineral Oils.

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Attachment II, Exhibit A

Proposed Reorganization and Modification of Section 747 Language

Discussions of specific aspects of section 747.are offered in Attachment II, Issue 25.

WAC 173-340-747 Deriving Method B and Method C soil concentrations for ground water protection. (1) **Purpose.** The purpose of this section is to establish methods for determining soil concentrations that will not cause contamination of ground water at levels that exceed the ground water cleanup level under WAC 173-340-720. Concentrations established under this section are used in WAC 173-340-740(3)(b)(ii) and (3)(c)(ii)(A) and 173-340-745 (5)(b)(ii) and (5)(c)(ii)(A), as part of establishing soil cleanup levels. For the purposes of this section, "soil concentration" means the concentration in the soil that will not exceed the ground water cleanup level determined in WAC 173-340-720.

(2) **General.** Soil concentrations may be derived by using one of four methods: standard Method B or C or modified Method B or C. Soil concentrations derived under this section must not result in the accumulation of NAPL on or in ground water. The methodologies specified in subsection (5) of this section shall be used to determine if this criterion is met.

(a) Standard **Method B or C.** Standard Method B or C consists of three optional approaches: the use of a three-phase or four-phase partitioning model using specified default input parameter values; or leaching tests.

(b) **Modified Method B or C.** Modified Method B or C consists of four optional approaches that rely on site-specific measurements. Three-phase or four-phase partitioning models may be used with site-specific input parameter values, derived in compliance with this section. A third modified Method B or C approach relies on fate and transport models. A fourth modified Method B or C approach relies on an empirical demonstration.

(3) **Standard Method B or C**

(a) Three-**phase partitioning model.** The three-phase partitioning model is an equation that may be used to calculate both unsaturated and saturated zone soil concentrations. The three-phase partitioning model may be used to derive soil concentrations for all hazardous substances including petroleum hydrocarbons. The model is based on assumptions intended to be protective under most circumstances and conditions.

Protective soil concentration for both unsaturated and saturated zone soils may be derived by using Equation 747-1 and the specified default input parameter values.

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Note from the POG: Equation 747-1 should be altered (or a separate equation given) so that it is clear how it is to be used with petroleum fractions. In addition, language should be used that describes how to use it for petroleum, such as the following:

For TPH mixtures using the TPH fraction approach, the three-phase partitioning model should be applied such that the resulting concentrations of individual fractions and associated non-carcinogenic volatile hazardous substances (see Table 830-1) in ground water do not exceed a hazard index of 1.0 Fraction-specific soil organic carbon-water partitioning coefficients and Henry's law constants, as provided in Table 747-3, must be used.

[Equation 747-1]

$$C_s = C_w DF\left[K_d + \frac{(\theta_w + \theta_a H_{cc})}{\rho_b}\right]$$

Where:

C_s = Soil cleanup level (mg/kg)
C_w = Ground water cleanup level from WAC 173-340-720 (mg/L)
DF = Dilution factor default values: 20 for unsaturated zone soil; 1 for saturated zone soil)
K_d= Distribution coefficient for soil-water equilibrium (L/kg)
θ_w =Volumetric water content default values: 0.3 volume water per total volume for unsaturated zone soil; 0.43 for saturated zone soil)
θ_a = Volumetric air content default values: 0.13 volume air per total volume for unsaturated zone soil; zero for saturated zone soil).
H_{cc} = Henry's law constant (Dimensionless: chemical specific)
ρ_b = Dry soil bulk density (default value: 1.5 kg/L)

(i) **Distribution coefficient (K_d).** One of two methods shall be used to derive K_d for Equation 747-1. For organic chemicals, the K_d for individual nonionic hydrophobic organic chemicals shall be derived using Equation 747-2.

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Note from the POG: It should be clarified that the Kd = Koc*foc relationship is not strictly applicable for ionizing organics, such as pentachlorophenol which dissociates to a more mobile form (pentachlorophenate) at a relatively neutral pH compared with nonionic organic chemicals. This is particularly important if Ecology intends to limit the use of the 3-phase model to nonionic hydrophobic organic chemicals.

[Equation 747-2]

$$K_d = K_{oc} f_{oc}$$

Where,

K_{oc} = Soil organic carbon-water partitioning coefficient (L/kg). The K_{oc} values listed in Table 747-4 may be used to calculate default K_d values. The K_{oc} values listed in Table 747-3 are to be used for petroleum hydrocarbons.
f_{oc} = Mass fraction of natural organic carbon (Default Value: 0.001 g soil organic /g soil)

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Note from the POG: Tables 747-3 and –4 are mislabeled as Tables 747-1 and 747–2.

For metals, K_d values shall be those indicated in Table 747-1.

Table 747-1: Metals Distribution Coefficients (K_d).

Compound	K_d (L/kg)
As	29
Cd	6.7
Total Cr	1,000
Cr (+6)	19
Cu	22
Hg	52
Ni	65
Pb	10,000
Se	5
Zn	62

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Note from the POG: It should be made clear that, for inorganic chemicals not listed here, literature values may be used.

(ii) **Henry's law constant.** For petroleum fractions, Table 747-3 shall be used to determine Henry's law constant for Equation 747-1. For individual organic chemicals, literature values may be used.

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Note from the POG: It should be made clear that Henry's law constants do not have a significant impact on the calculation of soil cleanup levels for inorganic chemicals of concern.

(b) **Four-phase partitioning model.** The four-phase partitioning model is a numerical method that may be used as part of the standard or modified approach in WAC 173-340-740(3)(b)(ii) and (3)(c)(ii)(A) and 173-340-745 (5)(b)(ii) and (5)(c)(ii)(A) to predict ground water concentrations that are based on multiple hazardous substances present in four phases including NAPL in soil. The resulting soil concentration must comply with free product limitations set forth in 720(4)(b)(iii). The four-phase partitioning model may be used to derive soil concentrations for all hazardous substances including petroleum hydrocarbons.

In order to determine that a soil concentration is protective of ground water quality, the predicted ground water concentration from the four-phase model must be compared to the ground water cleanup levels specified in WAC 173-340-720. If the predicted ground water

concentration is less than the cleanup level specified in WAC 173-340-720, then the soil concentration measured at the site is considered to be protective of ground water. If the predicted ground water concentration is greater than the cleanup level, then the four-phase model cannot be used to directly derive a soil concentration, but may be useful in development of a remediation level.

(i) Conservation **of volume equation.** The four-phase partitioning model conserves volume in the system. The conservation of volume equation that shall be used in the model is:

Equation 747-3:

$$n = \theta_w + \theta_a + \theta_{NAPL}$$

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Note: Amendment version of equation is written as n = n = θ_w + θ_a + θ_{NAPL}. Ecology should delete one of the "n ="

where,

n = Total soil porosity default value: 0.43 volume void per total volume (unitless)
θ_w = Volumetric water content (Default Values: 0.3 volume water per total volume for unsaturated zone soil; 0.43 for saturated zone soil)
θ_a = Volumetric air content (Default Values: calculated value for unsaturated zone soil; zero for saturated zone soil).
θ_{NAPL} = Volumetric NAPL content (volume NAPL per total soil volume)

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NOTE: The POG understands that the default values in Equation 747-4 may be changed by Ecology in consultation with the SAB, prior to the finalization of the rule amendments.

The total soil porosity and volumetric water content are assumed to be fixed values. The volumetric air and NAPL contents vary within the system depending upon the amount of NAPL formed after equilibration.

(ii) **Four-phase partitioning equation.** The following four-phase partitioning equation shall be used for each component:

[Equation 747-4]

$$C_T^i = \frac{x_i S_i}{\rho_b}\left[\theta_w + K_{OC}^i f_{OC} \rho_b + H_{cc}^i \theta_a + \frac{GFW_i}{S_i} \rho_{NAPL} \theta_{NAPL}\right]$$

where,

C_T^i = Total soil concentration of each chemical or EC fraction measured (mg/kg)
x_i = Mole fraction of each chemical or EC fraction in NAPL mixture after equilibration (dimensionless)
S_i = Aqueous solubility for each chemical or EC fraction (mg/L: See Table 747-3 for each EC fraction)
ρ_b = Dry soil bulk density (Default Value: 1.5 kg/L)
K'_{oc}= Soil organic carbon-water partitioning coefficient for each chemical or EC fraction (L/kg: See Table 747-3 for each EC fraction)
f_{oc} = Mass fraction of natural organic carbon (Default Value: 0.001 g soil organic /g soil)
H'_{oc}= Henry's law constant for each chemical or EC fraction (Dimensionless: See Table 747-3 for each EC fraction)
GFW_i = Gram formula weight, or molecular weight of each chemical or EC fraction (mg/mol: See Table 747-3 for each EC fraction)
ρ_{NAPL} = Molar density of NAPL mixture (mol/L: See Equation 747-5)

(iii) **NAPL molar density.** The molar density of the NAPL mixture can be expressed as a weighted average of the components by calculating density of the NAPL mixture and then dividing by the gram formula weight of the NAPL mixture such that:

[Equation 747-5]

$$\rho_{NAPL} = \frac{\left[\sum x_i GFW_i \Big/ \left(\sum x_i GFW_i / \rho_i\right)\right]}{\sum x_i GFW_i}$$

$$= \frac{1}{\sum \left(x_i GFW_i / \rho_i\right)}$$

where,

ρ_i = Density of each chemical or EC fraction (mg/L: See Table 747-3 for each EC fraction)

Equation 747-5 is based on the assumption that the equilibrated NAPL is an ideal mixture.

(iv) **General procedures for using the four-phase partitioning model.** The 4-phase partitioning model uses an iterative process to simultaneously solve for multiple equations: one equation corresponding to each EC fraction or hazardous substance present and each containing three unknown variables. The unknown variables are mole fractions (x_i) in the NAPL mixture for each chemical or EC fraction, volumetric content of air in soil (θ_a) and NAPL (θ_{NAPL}). In order to predict a ground water concentration, the equilibrated mole fraction of each chemical or EC

fraction present as NAPL must be known. The predicted ground water concentration is obtained by multiplying the water solubility of each EC fraction and other hazardous substances by its equilibrated mole fraction and then dividing by the dilution factor.

To use the four-phase model for Standard Methods B or C, the following six steps shall be completed:

(A) Step 1: Measure soil concentrations of hazardous substances. For petroleum hydrocarbons, have samples analyzed for the EC fractions (see Table 830-1 in WAC 173-340-830 and Table 747-3).

(B) Step 2: Determine physical/chemical data. For each chemical (and for petroleum hydrocarbons, each of the 13 EC fractions), determine the appropriate Henry's Law Constant, water solubility, soil organic carbon-water partitioning coefficient (Koc) (available at Table 747-4) and molecular weight values (using the values in Table 747-3 for all of these physical and chemical data for petroleum EC fractions);

(C) Step 3: Determine site hydrogeologic parameters. Default values for dry soil bulk density, volumetric water content, and mass fraction of natural organic carbon from Equation 747-4 are to be used. A value of zero shall be used for the soil volumetric air content in saturated zone soil.

(D) Step 4: Predict a soil pore water concentration. The series of equations (Equation 747-4) with "N" components, along with Equation 747-3 and the condition that $\sum x_i = 1$ provide a total of "N+2" independent equations that describe partitioning and volume conservation in a soil sample. Given the measurements and physical/chemical values listed in Table 747-3, there are "N+2" unknowns. These unknowns are "N" number of mole fractions (x_i) in the NAPL mixture for each component and volumetric contents of air (θ_a) and NAPL (θ_{NAPL}). An equal number of unknowns and independent equations guarantee a unique solution. A unique set of solutions for x_i is obtained by solving a series of mass balance equations simultaneously. Once x_i is computed with the iteration or other numerical techniques, the soil pore water concentration at soil source can be estimated by multiplying the water solubility of each component by the its equilibrated mole fraction (for petroleum hydrocarbons, a summation of the predicted soil pore water concentration of each component is the TPH value.

(E) Step 5: Compute the ground water concentration with a dilution factor. Divide the soil pore water concentration predicted from Step 4 for each chemical or EC fraction by a default dilution factor of 20 to account for the dilution that occurs once the substance enters ground water. Sum the individual EC fractions to obtain a predicted ground water TPH concentration.

(F) Step 6: Compare the predicted ground water concentration to the ground water cleanup level specified in WAC 173-340-720.

(c) **Leaching tests.**

(i) If leaching tests are used for certain metals, one of the following two standard leaching tests shall be used:

(A) EPA Method 1312, Synthetic Precipitation Leaching Procedure (SPLP). Fluid #3 (pH = 5.0), representing acid rain in the western United States, shall be used when conducting this test. This test should not be used for metals that are more soluble at low pH when significant biological degradation is occurring, as this test may underestimate concentrations in this situation.

(B) EPA Method 1311, Toxicity Characteristic Leaching Procedure (TCLP). Fluid #1 (pH = 4.93), representing organic acids generated by biological degradation processes, shall be used when conducting this test. This test should not be used for metals that are more soluble under alkaline conditions.

(ii) Criteria for metals. A soil metals concentration derived using the methods in this subsection shall meet the following criteria:

(A) For cadmium, lead and zinc, the leaching test concentration shall be less than ten (10) times the Method B ground water cleanup level specified in WAC 173-340-720.

(B) For arsenic, total chromium, hexavalent chromium, copper, mercury, nickel and selenium, the leaching test concentration shall be less than the Method B ground water cleanup level specified in WAC 173-340-720.

(iii) For all other hazardous substances, including TPH, leaching tests may also be used as part of an empirical demonstration under subsection (4)(d) of this section. If a leaching test is used for an empirical demonstration, it shall be based on methods approved by the department.

(4) **Modified Method B or C.**

(a) **Modified Partitioning Models.** Modified Method B or C soil cleanup levels protective of ground water may be calculated using the three- or four-phase partitioning models described for Standard Method B or C with site-specific measurements or calculated input parameters derived as follows:

(i) **Modified three-phase partitioning model.** As part of the modified approach, site specific information may be used in Equation 747-1. The parameters that may be substituted into the three-phase partitioning model are the distribution coefficient, soil bulk density, soil organic carbon content, soil volumetric water content, soil air content and dilution factor. Procedures for deriving each one of these parameters are provided below.

(A) **Distribution coefficient (Kd).** Three methods may be used to determine a site-specific distribution coefficient:

(I) **Soil fraction of organic carbon.** Site-specific measurements of soil organic carbon may be made to derive distribution coefficients for non-ionic hydrophobic organics using Equation 747-2. Soil organic carbon measurements shall be based on uncontaminated soil below the root zone (i.e. soil greater than one meter in depth) that is representative of the site conditions or in areas through which contaminants are likely to partition into different phases.

(II) **Field site data.** Measurements of the total soil concentration and the soil pore water concentration (unsaturated zone) or the total soil concentration and the ground water concentration (saturated zone) may be used to derive a distribution coefficient. Such measurements shall be taken from the same depth and location. Hazardous substances that are present in the soil as NAPL shall not be used to derive a distribution coefficient.

(III) **Laboratory batch tests.** A site-specific distribution coefficient may be derived by using batch equilibrium tests to measure hazardous substance adsorption and desorption rates. If a batch leaching test is used, measures shall be taken to prevent biodegradation and volatilization before and during leach testing.

(B) **Soil bulk density.** ASTM Method 2049 or other methods approved by the department may be used to measure soil bulk density values.

(C) **Soil organic carbon content.** The laboratory protocols for measuring total organic carbon in the Puget Sound Estuary Program (March, 1986) may be used. Other methods may also be used if approved by the department. These methods require that all soil inorganic carbon be completely dissolved before the test.

(D) **Soil volumetric water content.** ASTM Method 2216 or other methods approved by the department shall be used to measure soil volumetric water content values.

(E) **Soil air content.** An estimate of the soil air content shall be determined by calculating the soil porosity and subtracting that amount occupied by water.

(F) **Dilution factor.** The following three methods for calculating the site-specific dilution factor shall be used:

(I) **Default value.** A dilution factor of twenty (20) may be used for the unsaturated zone.

(II) **Equation for site-specific dilution factor.** A site-specific dilution factor for the unsaturated zone shall be calculated using the following equation:

[Equation 747-6]

$$DF = \frac{Q_P + Q_a}{Q_P}$$

where,

DF = Dilution factor

Q_a = Ground water flow (m^3/year)

Q_P = Volume of water infiltrating (m^3/year)

[Equation 747-7] $$Q_a = KAI$$

[Equation 747-8] $$Q_P = LWInf$$

where,

K = Hydraulic conductivity (m/year)

A = Aquifer mixing zone (m^2). The aquifer mixing zone thickness shall not exceed 5 meters in depth and shall be equal to a unit width of 1 m.

I = Gradient (m/m)

L = estimated length of contaminant source area parallel to ground water flow (m)

W = unit width of contaminant source area (1 m)

Inf = infiltration (m/yr).

For sites west of the Cascade Mountains, the default annual infiltration value shall be 70 percent of the average annual precipitation amount. For sites east of the Cascade Mountains, the default annual infiltration value shall be lower than 30 percent of the average annual precipitation. If a site-specific measurement or estimate of infiltration is made, it must comply with the provisions of (c) of this subsection.

(III) **Use of fate/transport models.** Any fate/transport models may be used, as described in (b) of this subsection, to estimate the dilution/attenuation factor with the natural biodegradation, abiotic degradation, advection, diffusion, sorption, volatilization, partitioning and dispersion that occur as hazardous substances migrate from soil into ground water.

(ii) Modified **four-phase partitioning model.** Site-specific measurements of the distribution coefficient, soil bulk density, soil organic carbon content, soil volumetric water content, and dilution factor may be used in conjunction with the standard four-phase partitioning model to derived a Modified Method B or C soil cleanup level: The methods for deriving the values for input parameters are the same as for the modified three-phase partitioning model, as described at 173-340-747(4)(a)(i).

(b) **Fate and transport models.** Other fate / transport models may be used to derive soil concentrations for all types of hazardous substances including petroleum hydrocarbons.

(i) **Input parameters.** No particular fate / transport model is required under this chapter. Any fate / transport model used may include the following fate and transport mechanisms, but not limited to:

(A) Natural biodegradation and abiotic degradation. A site-specific measurement or estimates of hazardous substance degradation rates.

(B) Dispersion. Site-specific measurements or literature estimates of the dispersion that occurs as hazardous substances migrate from soil into ground water.

(C) Decaying source. Fate/ transport algorithms that account for biological and chemical decay over time.

(D) Infiltration. If an estimate of infiltration is used, it shall be based on site conditions without surface caps (e.g., pavement) or other structures that would control or impede infiltration. The presence of a cover or cap may be considered when evaluating the protectiveness of a remedy under WAC 173-340-350 and 173-340-360.

(ii) Documentation **required for fate / transport models.** The criteria in WAC 173-340-702 (14), (15) and (16) shall be used to evaluate the appropriateness of proposed model assumptions.

(iii) **Criteria for deriving soil concentrations.** Soil concentrations derived under this subsection shall meet the following criteria:

(A) The measured soil concentration must be less than or equal to the soil concentration predicted by the model; and

(B) For nonaqueous phase liquids (NAPL), the soil concentration must not result in the accumulation of NAPL on or in ground water. The methodologies specified in subsection (5) of this section shall be used to determine if this criterion is met.

(c) **Empirical demonstration.**

(i) **Purpose.** An empirical demonstration is:

(A) The use of site-specific measurements to determine model input parameters such as ~~bio~~degradation rates, infiltration rates, mixing zone thickness, flow volume, or the distribution coefficient for different contaminants; or

(B) The use of site-specific soil and ground water measurements to develop correlations between soil contaminant levels and ground water impacts. Leaching tests may also be used as part of an empirical demonstration.

(ii) Requirements. Empirical demonstrations shall demonstrate that steady state conditions have been achieved. Specifically, it must be demonstrated that a sufficient amount of time has elapsed for migration of hazardous substances from soil into ground water to occur and that the physical characteristics of the site (e.g. the depth to ground water, infiltration, etc.) are representative of future site conditions. Empirical demonstrations may be used to derive a soil cleanup level for all types of hazardous substances and shall be based on methods approved by the department. The criteria in WAC 173-340-702 (14), (15) and (16) shall be used to evaluate the appropriateness of the empirical demonstration.

(iii) **Criteria for deriving soil concentrations.** Soil concentrations derived under this subsection shall meet the following criteria:

(A) The measured soil concentration must be less than or equal to the soil cleanup level predicted by the empirical demonstration;

(B) Ground water concentrations must be less than the cleanup levels specified in WAC 173-340-720; and it is demonstrated that this condition will continue into the future; and

(C) For NAPL-forming hazardous substances including petroleum, the soil concentration must not result in the accumulation of NAPL on or in ground water. The methodologies specified in subsection (5) of this section shall be used to determine if this criterion is met.

(5) **Residual saturation.**

(a) Purpose. When NAPL is released to the soil, the predominant direction of flow is vertical due to gravity. During this process, some of the NAPL will be left behind in the soil pores or void spaces due to capillary forces. The amount of NAPL that is left behind in the soil pores is called residual saturation. This term is used to describe the volumetric content of the NAPL-forming contaminant that remains in the soil pores after free-gravity drainage.

At volumetric contents above residual saturation, the NAPL will continue to migrate. If this occurs, the NAPL may eventually migrate into ground water, provided a sufficient volume of NAPL is released.

(b) **Application.**

(i) **Residual saturation screening levels for petroleum.** If the proposed soil petroleum concentrations derived under subsections (3) and (4) of this section exceed the Table 747-2 values, it may be assumed that there is a potential for gravity drainage of NAPL from soil into ground water. Table 747-2 values may be used as soil concentrations that will not result in ground water contamination due to free drainage of NAPL. If the proposed soil cleanup level (based on other pathways) is below the appropriate screening level then residual saturation is not a concern and the cleanup level is acceptable.

Table 747-2: Soil Residual Saturation TPH Screening Levels

Fuel	Screening Level (mg/kg)
Weathered Gasoline	1,000
Middle Distillates (e.g. Diesel, No 2. Fuel Oil)	2,000
Heavy Fuel Oils (e.g. No 6. Fuel Oil)	2,000
Mineral Oil	4,000
Unknown Composition or Type	1,000

Table 747-2 screening levels are based on coarse sand and gravelly soils. Higher concentrations may be appropriate for less porous soils, as approved by the department. Any screening levels presume that there are no preferential pathways for NAPL to flow downward to ground water. If such pathways exist, residual saturation cannot be used as a method for setting soil concentrations under this section.

(ii) **Other NAPL-forming hazardous substances.** The need to evaluate residual saturation for other NAPL-forming contaminants not listed in Table 747-2 will be considered by the department on a case-by-case basis.

(iii) **Development of alternate soil concentrations to prevent NAPL formation.** Soil TPH concentrations higher than the Table 747-2 values or concentrations of NAPL-forming hazardous substances not listed on Table 747-2 may be demonstrated as being appropriate on a site-specific basis, using one or more of the following demonstrations:

(A) **Site-specific measurements of residual saturation.** A site-specific measurement of residual saturation may be used to derive a soil concentration for TPH mixtures or for NAPL-forming contaminants other than TPH mixtures. Site-specific measurements of residual saturation shall be based on methods approved by the department. It may be assumed that gravity drainage of NAPL from soil into ground water will not occur if the soil contaminant concentrations at the site are less than the site-specific measurement of residual saturation.

(B) **Other demonstrations.** An empirical demonstration (subsection (4)(d) of this section) or other methods may be used to show that contaminant concentrations measured at the site that exceed residual saturation will not result in ground water contamination above the cleanup levels established in WAC 173-340-720. Other methods may include, but shall not be limited to, ground water monitoring showing the absence of NAPL on underlying ground water, or a measurement or calculation using site-specific data of the attenuating capacity of clean soil between the NAPL-contaminated soil and the ground water table. Site-specific demonstrations or calculations must include evidence, to the degree required by the department, that the released NAPL has had sufficient time to migrate to ground water and that no NAPL is continuing to move downward.

(6) **Alcohol-enhanced fuels.** For soil containing petroleum-based fuels that have been enhanced with alcohol, partitioning models may be used on a case-by-case basis. It shall be demonstrated that the effects of cosolvency have been adequately considered and, where necessary, taken into account when applying the model. Use of a model for enhanced fuels without considering the effects of cosolvency and increased ground water contamination is prohibited.

(7) **Verification ground water monitoring.** The department may, on a case-by-case basis, require that ground water monitoring be performed to confirm that soil concentrations are protective of ground water.

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To: Brownfields/TPH Project Oversight Group
From: Warren Hansen – Onsite Enterprises
Re: Proposed MTCA ground water cleanup levels for diesel range organics, heavy oil and mineral oil.

Introduction

This memo puts forth an alternate manner in which Method A ground water cleanup levels may be derived for diesel and heavy oil (both based on diesel-range organics or DROs) and mineral oil. The method used to derive the cleanup levels contained in the proposed amendments to MTCA regulations, 500 ug/L for DROs and 1,000 ug/L for mineral oil, does not take into account the solubility limits (absolute dissolved concentration) predicted by the four-phase model for pore water moving to groundwater (the Method A conceptual model) and disregards the standard methodology for evaluating the leaching pathway set forth in Section 747 of the proposed rule amendments. Rather, the proposed cleanup levels make use of limited data from two-phase (product/water) partitioning laboratory experiments to derive the percent of each equivalent carbon fraction contained in the dissolved phase of ingestible ground water. Those relative percentages are then used to estimate a TPH concentration at an equivalent Hazard Index of 1.0. For DROs and mineral oil, these concentrations exceed the dissolved concentration that can occur in groundwater under the accepted conceptual model. This method over-estimates the toxicity as it assumes the relative percentage of TPH fractions is entirely controlled by product solubility in the aqueous phase. Furthermore, use of two laboratory fuel/water partitioning experiments to estimate the relative concentrations of TPH fractions in groundwater is non-representative and disregards the accepted conceptual model, as these experiments were based on two-phase (not four-phase) experiments.

Methodology as included in proposed MTCA amendments

The four-phase model described in Section 747 predicts that the concentration of DRO dissolved in ground water under the Method A conceptual site model assumptions and TPH-saturated soil conditions is 107 ug/L. The composition of the dissolved DRO fractions at 107 ug/L represents a hazard index (HI) of 0.22. Up to this point, there is no disagreement on the assumptions and the use of the 4-phase model. However, to estimate the ground water concentration representing the balance of the allowable HI (i.e., 1.0 minus 0.22, or 0.78), Ecology essentially assumed that the composition of the fractions in the additional (remaining) DRO is the same as that of the solubilized fractions. This results in an additional ground water concentration of 379 ug/L, for a total of 486 ug/L, (rounded up to 500 ug/L, the proposed cleanup level).

Recommended Methodology

The recommended method put forth here is a hybrid between the solubility and whole-product approaches to estimating the composition of DROs and mineral oil in ground water. This method posits that the equivalent carbon fractions comprising the additional DRO are better represented in the accepted Method A conceptual site model (leaching from the vadose zone to groundwater) as undissolved components moving into the groundwater. Remaining TPH (that is, the balance of the TPH comprising the remaining hazard index) is best represented by the same relative equivalent carbon fraction concentrations contained in the original (parent) product. For diesel, the concentration corresponding to the remaining HI of 0.78 is 546 ug/L, resulting in a more scientifically justifiable DRO ground water cleanup level of 107 + 546 = 653 ug/L (which can be rounded up to 700 ug/L or down to 650 ug/L, as a matter of policy).

147 cont.

For Mineral Oil, Ecology's approach to deriving the currently-proposed cleanup level of 1,000 ug/L is similar to that used for diesel. In the May 18, 1999 memo From Steve Robb to the MTCA Science Advisory Board, the allowable (dissolved) mineral oil concentration in ground water (using the same method describe for DRO's above) at a hazard index of 1.0 and saturated soil conditions is 465 ug/L (Note: Ecology later relied on two-phase partitioning experiments to propose a CUL of 1,000 ug/L). Use of the method recommended herein results in a cleanup level of approximately 1,500 ug/L for mineral oil.

DIESEL-RANGE ORGANICS	GROUND WATER CONCENTRATION, ug/L, Ecology Method	GROUND WATER CONCENTRATION, ug/L, Recommended Method	CORRESPONDING HAZARD INDEX, unitless
Maximum dissolved , from 4-phase model	107	107	0.22
Remaining allowable concentration- assumes chemically similar to whole product	--	546	0.78
Remaining allowable concentration – assumes chemically similar to solubilized fractions	379	--	0.78
TOTAL	486*	653	Ecology Method: 1.0 Optional Method: 1.0

* Value based on original diesel fraction estimates by Ecology. Ecology subsequently decided to base the 500 ug/L cleanup level in the recently Proposed Amendments (November 1999) on the results of 2-phase partitioning experiments (Memo from P. Kmet to MTCA Science Advisory Board, December 20, 1999).

MINERAL OIL	GROUND WATER CONCENTRATION, ug/L, Ecology Method	GROUND WATER CONCENTRATION, ug/L, Recommended Method	CORRESPONDING HAZARD INDEX, unitless
Maximum dissolved , from 4-phase model	18	18	0.04
Remaining allowable concentration- assumes chemically similar to whole product	--	1440	0.96
Remaining allowable concentration – assumes chemically similar to solubilized fractions	447	--	0.96
TOTAL	465*	1458	Ecology Method: 1.0 Optional Method: 1.0

* Value based on original mineral oil fraction estimates by Ecology. Ecology subsequently decided to propose an alternate cleanup level of 1000 ug/L in the recently Proposed Amendments (November 1999), based on soluble fractions laboratory test data provided by Puget Sound Energy (P. Kmet, ibid).

Cleanup levels using the compositions of diesel fuel and mineral oil employed by Ecology and Puget Sound Energy in their partitioning experiments (P. Kmet, ibid, Table 1) were also calculated using the proposed method. For Diesel fuel, the HI was exceeded by the soluble fractions, and this was attributed to the detected concentrations of BTEX in the samples. According to calculations by the Pollution Liability Insurance Agency (PLIA) if benzene is present, that compound would then control or

"drive" the cleanup. In such cases, the corresponding TPH cleanup level for groundwater (assuming benzene is addressed separately) could be over 700 ug/L. Table 830-1 of the Proposed Amendments requires testing for benzene in groundwater when diesel contamination is suspected. Again, Ecology's proposed DRO cleanup level is overly conservative.

147 cont.

Summary

The recommended approach to calculating ground water cleanup levels for DROs and mineral oil presented in this memo is more scientifically justifiable than the method used for the proposed MTCA amendments, because it adheres to the leaching conceptual site model recommended to Ecology by the Science Advisory Board. The use of two-phase (product/groundwater) partitioning is not scientifically justifiable and results in overly conservative cleanup levels, as it in effect presumes the presence of NAPL on the water table. Yet the Proposed Amendments prohibit groundwater petroleum cleanup levels from exceeding a "concentration that would result in free product being present in or on the ground water" (WAC 173-340-720(4)(b)(iii)). The method A cleanup levels for diesel-range organics and mineral oil using the recommended method would be 700 (or 650) and 1,500 ug/L, respectively. Because of the much higher solubility of gasoline range organics, the optional method presented here is not recommended for calculating ground water cleanup levels for that petroleum category. I suggest the POG consider recommending this approach for DROs and mineral oil in its next round of recommendations to Ecology.

ATTACHMENT III – January 12, 2000

DUWAMISH COALITION

TPH PROJECT OVERSIGHT GROUP

Washington State Department of Ecology, Port of Seattle, King County, Cities of Seattle and Tukwila, U.S. EPA Region 10 and the Duwamish Coalition

September 21, 1999

Thomas Fitzsimmons, Director
Washington State Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Dear Mr. Fitzsimmons,

We are pleased to transmit our consensus recommendation for your Department's December 14, 1998 draft of proposed changes to the Model Toxics Control Act (MTCA) regulations. This letter reflects our consensus as of April of this year. We delayed this transmittal in hopes that the Ecology members of our group would be able to sign this letter. This proved not to be possible, despite their valuable contributions. Attached to this cover letter are our consensus recommendation and a list of project contributors. Under separate cover, we previously sent to Ecology staff a volume of technical documents that form the basis of our consensus recommendation.

For the past three years we have been working as the Project Oversight Group (POG) to manage the Duwamish Coalition's Brownfields/Total Petroleum Hydrocarbon (TPH) Project. During this time, we have conducted a thorough scientific and policy review of issues related to site evaluations, regulatory frameworks, toxicology, analytical methods, fate and transport, and cleanup levels and policies. We have worked closely with Ecology personnel in making recommendations for the incorporation of new TPH standards into the proposed rule changes. We believe these recommendations will put Washington at the nation's forefront of facilitating cleanups by providing a flexible, scientifically advanced regulatory framework that will protect the environment and human health through tiered risk evaluations.

The December 14 discussion draft rule represents the most recent product of a year-long interaction between Ecology staff and the POG. During this time, several draft rules were produced by Ecology and then modified based on POG recommendations. There are many parts of the December 14 draft that the POG supports, but which we are not commenting on in this current transmittal. We commend Ecology staff for their commitment to high standards during this process.

The technical volume documents the POG's recommendations already incorporated in the December 14 draft rule.

Governor Gary Locke initiated the Brownfields/TPH Project when he was King County Executive and co-chaired the Duwamish Coalition. The Duwamish Coalition was a partnership of local, state and federal agencies; businesses; citizens; environmental organizations; and tribes. The Coalition met regularly for three years and involved over 250 people. Its mission was to "Preserve and reclaim industrial land for the purpose of expanding the industrial job base, and protecting and enhancing the natural environment." We believe this project makes a significant contribution toward that mission. This body of work may have even gained importance due to the listing of the Chinook salmon under the Endangered Species Act. It is our hope and expectation that our consensus recommendation will be a useful building block for state and regional efforts to restore salmon runs.

The TPH Project has been funded by the EPA, Ecology, the Port of Seattle, the cities of Seattle and Tukwila, and King County. Staff participation by the Department of Ecology has included 17 individuals plus staff from the Pollution Liability Insurance Agency and the Attorney General's Office. The cities of Seattle and Tukwila, along with the Port of Seattle and King County provided additional core staff to the POG, while EPA provided very valuable assistance through a technical adviser. Project funding has totaled nearly $800,000 and the value of contributed staff time exceeds $1 million.

We wish to acknowledge the work of the National TPH Criteria Working Group that laid the scientific foundation for our project, and that of the Massachusetts Department of Environmental Protection. We have actively coordinated our efforts with the state MTCA Policy Advisory Committee, Ecology's Science Advisory Board and other groups. Among our contributions is the early and meaningful involvement of diverse groups of citizens and businesses, environmental groups and tribes through the POG's extensive public involvement efforts.

In addition to the core POG members who have signed this letter, we have included a list of the numerous individuals who made valuable contributions to our work. A project this broad in scope and technical in nature could not have been accomplished without the support of many individuals, and we are grateful for their assistance. We want to express a special acknowledgment to Foster Wheeler Environmental Corporation, and Floyd & Snider Inc. which provided essential services under contract to the POG. We would also like to single out three technical advisers to the POG, without whose technical expertise and dedication this project would have foundered. They are Linn Gould, Erda Environmental Services Inc.; Warren Hansen, Onsite Enterprises Inc.; and Marcia Bailey, EPA. We are most grateful for their patience, competence, hard work and perseverance.

Finally, we wish to thank you, Mr. Fitzsimmons, as well as Ecology's previous director, Mary Riveland, for creating and supporting the unique partnership that allowed this important work to reach its conclusion. Ecology representatives who worked as an integral part of the POG team contributed invaluable technical expertise and knowledge of departmental policies and procedures. The public has been well served by their work. We acknowledge that additional analysis of these recommendations by Ecology may lead the department to adopt final policies, standards or procedures that differ from our consensus recommendation. We look forward to working with you in the process of finalizing the rule, and plan to make additional comments when the rule is published. If you have any questions concerning our recommendation, please contact Elizabeth Leavitt, Environmental Manager, Aviation Division at the Port of Seattle. Ms. Leavitt has been the technical issues manager for the POG, and she can be reached at (206) 433-7203.

Sincerely,

Elizabeth Leavitt,
Environmental Manager,
Aviation Division,
Port of Seattle

Thomas Newlon,
Senior General Counsel,
Port of Seattle

Marcia Bailey, D. Env.
Environmental Scientist,
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U.S. Dept. of the Navy

cc: Gary Locke, Governor,
State of Washington

Ron Sims, Executive,
King Co. Council Members,
King County

Paul Schell, Mayor,
City Council Members,
City of Seattle

John W. Rants, Mayor,
City Council Members
City of Tukwila

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Mic Dinsmore,
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Port of Seattle

James Sims, Director,
Pollut. Liab. Ins. Agency,
State of Washington

Christine Gregoire,
Attorney General,
State of Washington

Charles Clarke,
Administrator, Region 10,
U.S. EPA

ATTACHMENT 2

List of Contributors to the Brownfields/TPH Project

(The following list of individuals contributed to the project through peer review, critique, technical suggestions and consulting services. Their inclusion here does not necessarily indicate agreement with the POG's recommendations.)

Local Government Contributors:

1. Jack Pace, Planning Manager, City of Tukwila
2. Vernon Umetsu, Associate Planner, City of Tukwila
3. Michael Alvine, Sr. Legislative Analyst, Metropolitan King County Council
4. Lucy Auster, Sr. Dev. Spec., Office of Regional Policy and Planning King County
5. Ray Moser, Chief, Office of Regional Policy and Planning, King County
6. Judy Riley, Manager, Design and Const., Metro Transit, King County
7. Ben Wolters, Sr. Com. Dev. Spec., Office of Economic Development, City of Seattle
8. Thomas Boydell, Principal, Seneca Consulting Group/representing the City of Seattle (formerly with City of Seattle)
9. Chuck Depew, Deputy Director, Office of Econ. Dev. City of Seattle
10. Sharon Metcalf, Assistant City Attorney, City of Seattle
11. Bennie Barnes, State Intergovernmental Relations Coordinator, City of Seattle
12. Steve Johnson, Federal Relations Coordinator, City of Seattle
13. Elizabeth Leavitt, Environmental Manager, Aviation Division, Port of Seattle
14. Thomas Newlon, Senior General Counsel, Port of Seattle

Washington State Dept. of Ecology and Other State Agency Contributors:

1. *Curtis Dahlgren, Supervisor, Toxics Cleanup Program, Dept. of Ecology
2. *Steve Robb, Environmental Specialist, Toxics Cleanup Prog., Dept. of Ecology
3. *Craig R. McCormack, Pharm. D., Environmental Specialist, Dept. of Ecology
4. *Glynis Carrosino, Project Manager, Toxics Cleanup Prog., Dept. of Ecology
5. Mary E. Burg, (former) Manager, Toxics Cleanup Program. Dept. of Ecology
6. Carol Kraege, (former) Supervisor, Toxics Cleanup Program, Dept. of Ecology
7. Robert Carrell, Senior Chemist, Manchester Laboratories, Dept. of Ecology
8. Daniel Cargill, Supervisor, Independent Cleanup Program, Dept. of Ecology
9. Teresa Michelson, (former) Env. Specialist, Toxics Cleanup Prog., Dept. of Ecology
10. Nigel Blakley, Environmental Engineer, Toxics Cleanup Prog., Dept. of Ecology
11. Barbara Huether, Env. Specialist, Toxics Cleanup Prog., Dept. of Ecology
12. Lynn Coleman, Environmental Engineer, Toxics Cleanup Prog., Dept. of Ecology
13. Peter Kmet, Environmental Engineer, Toxics Cleanup Prog., Dept. of Ecology
14. Charles San Juan, Hydrogeologist, Toxics Cleanup Prog., Dept. of Ecology
15. James Pendowski, Supervisor, Toxics Cleanup Program, Dept. of Ecology
16. Nicholas Garcia, Economist, Rules Unit, Dept. of Ecology
17. Jan Swanberg, Contract Officer, Budget and Finance Unit, Dept. of Ecology
18. Kathy Gerla, Assistant Attorney General, State of Washington
19. Hun Seak Park, P.E., Senior Civil and Environmental Engineer, Pollution Liability Insurance Agency, State of the Washington

* TPH Project Oversight Group member

List of Contributors to the Brownfields/TPH Project (Attachment 2 cont.)

Federal Agency Contributors:

1. Marcia Bailey, D. Env., Environmental Scientist, U.S. EPA Region 10, Technical Adviser to POG
2. Lori Cohen, Brownfields Coordinator, Region 10, U.S. EPA
3. Steve McNeeley, OUST National Director, U.S. EPA
4. Steven Saepoff, P.E., R.E.M., Engineering Field Activities, U.S. Navy, Poulsbo
5. Nancy Demond, Bonneville Power Administration
6. Deb Malin, Bonneville Power Administration

Other Private Contributors:

1. Michael Gillett, Gillett Law Offices
2. Jeff Goold, Chair, WSPA Environmental Task Force/Texaco
3. Gary Gunderson, former Chair, WSPA Environmental Task Force/UNOCAL
4. Karen Synoweik, PIRI representative/Chevron Oil
5. Ishwar Murarka, Ph. D., Electric Power Research Institute
6. Joseph Johnson, Pollution Prevention Specialist, The Boeing Company
7. Robbi Ettinger, Research Engineer, Shell Development Company, Inc.

Environmental Consulting Contributors:

1. Linn Gould, Principal, Erda Environmental Inc., Technical Adviser to POG
2. Warren Hansen, President, Onsite Enterprises Inc. Technical Adviser to POG
3. Marjorie Norman, Ph. D., Project Director, Foster Wheeler Environmental Corporation, Consultant to POG
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6. Kim Prestbo, Environmental Scientist, Foster Wheeler Environmental Corporation, Consultant to POG
7. Teri Floyd, Ph. D., Principal, Floyd & Snider, Inc., Consultant to POG
8. Jennifer Holmes, Ph. D., Senior Scientist, Floyd & Snider, Inc., Consultant to POG
9. Laboratory Advisory Board members, Robert Wilson, North Creek Analytical Inc. and other labs/individuals. Technical Advisers to POG
10. Patricia Serie, President, EnviroIssues Inc.
11. Daniel Ballbach, Landau and Associates Inc.
12. Hans Stroo, Ph. D., Environmental Scientist, Thermo Retec Inc., Consult. to POG
13. Joel Massmann, Ph. D., Professor, Center for Urban Water Resources Management, Dept. of Engineering, University of Washington, Consultant to POG

Attachment IV
Comments on the Draft Environmental Impact Statement
For the MTCA Proposed Rule Amendments

148 Overall Comment

The document repeatedly refers to petroleum cleanups as pertaining to Method A or to site-specific risk assessments under Methods B and C (i.e., modified Methods B and C). Standard Methods B and C are also appropriate for petroleum cleanups. If the use of the term "site-specific" in these contexts simply refers to the site specificity of TPH fractions, the term is used incorrectly in the context of MTCA.

149 Page 14, Section 1.6.2, Petroleum Cleanups

In the first paragraph, it should be made clear that both standard and modified Methods B and C are appropriate for petroleum cleanups.

In the second paragraph, it would be informative to the reader to make the observation that some proposed Method A TPH values are higher than existing values, not just lower. (It is understood that the main purpose of this document is to evaluate potential adverse effects of the proposed amendments, but for perspective, additional information would be appropriate in this case.)

Third paragraph: Delete the term "site-specific" in the first sentence, as it implies it is only for modified Methods B and C. The second sentence reads as follows:

> These methods are based on the ASTM Risk-Based Corrective Action (RBCA) model, modified to make it compatible with the existing MTCA framework.

It is suggested that the sentence be changed to the following, for accuracy:

> These methods are loosely based on the tiered approach of the ASTM Risk-Based Corrective Action (RBCA) model and incorporates the concept of using petroleum fractions first put forth by the TPH Criteria Working Group to evaluate the toxicity of TPH components as well as to evaluate their fate and transport characteristics in the environment.

The third sentence states that the TPH methods proposed will likely result in "some delays in cleanups." The POG does not agree that the TPH cleanup program is likely to cause such delays, unless this is meant to be a strict comparison of Method A with Methods B and C; in that case, it is not different from any non-TPH site cleanup where Method A is an option. There is nothing inherent about the proposed TPH requirements for establishing cleanup levels or conducting site cleanups that would result in delays in cleanups.

150 Page 14, Section 1.6.3, Remedy Selection and Permanence

The first sentence states that the proposed amendments are, for the most part, "intended to clarify the existing rule and Ecology policies, without introducing policy changes." There are a number of changes in the proposed amendments, which are policy-related, e.g., the acceptable uses of natural attenuation and dilution/dispersion. It is recommended that this document delineate those changes in Remedy Selection and Permanence, which are the results of policy changes.

151 Page 22, fourth bullet item:

This item explains that the proposed amendments will require that free product be removed at all sites, instead of just at underground storage tank sites, as is the case in the current rule. It then states that this change "reflects current practice." It is the POG's impression that free product is not always required to be removed from MTCA sites that are not underground storage tanks under the current rule, and that this change is a significant one (and one that the POG agrees with). The POG suggests that Ecology check the accuracy of this statement, and change it to reflect the significance of the change.

152 Page 32, Land Use:

The third sentence states that the soil leaching pathway controls the soil cleanup levels at most sites (as opposed to direct contact with soil), and that "land use is irrelevant in setting the soil cleanup level." Direct contact is important for soil overlying an aquifer, which is nonpotable and does not immediately discharge to surface water; and may be important in a remediation circumstance where groundwater cleanup levels are not achieved. In addition, the importance of direct contact v. leaching is site- and chemical-specific. These issues should be discussed in this section.

153 Page 39, first paragraph:

The first sentence should be revised by deleting the term "site-specific risk assessment under" [Methods B and C]. As noted previously, the proposed amendments for petroleum apply to both standard and modified Methods B and C.

The third sentence refers to the surrogate method for calculating cleanup levels as a "nationally accepted approach." This is somewhat of an overstatement, in that only a few states have adopted the approach, and there is no national body which uses it.

154 Page 39, second paragraph:

This states that Ecology can require more stringent cleanup levels if "residual contamination causes odors that threaten human health or the environment." The POG is unaware of a situation wherein an odor could threaten human health. References to commercial property should be changed to industrial property.

155 Page 42, Section 3.5.2, Proposed Action Alternative (Proposed Rule Amendments), Terrestrial Ecological Evaluation:

This states that the proposed amendments are "not expected to result in higher levels of residual soil contamination." This is not true for TPH at commercial/industrial sites.

156 Page 47, Table 4.2
For the description of how free product is regulated under the proposed amendments, add "at the point of compliance" after "Must remove free product at all sites" for clarification purposes.

157 Page 52, second and third paragraphs:

The discussion should be changed to reflect the fact that both standard and modified Methods B and C are available for cleanups of petroleum-contaminated sites. Statements concerning "odors that threaten human health" are repeated in the third paragraph.

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ATTACHMENT V

Comments on Small Business Economic Impact Statement

In general the POG felt the scope and level of detail in the SBEIS could have been improved. We also regret the lack of opportunity to comment on the document in draft form so that concerns could be addressed in a final, revised document. However, the POG understands that Ecology generally prepares among the most detailed SBEIS documents in Washington State government, and that our concerns regarding completeness and level of detail would be most effectively addressed through changes in the state Regulatory Fairness Act.

We have chosen to focus our comments on what we believe would be the most effective actions Ecology could take to mitigate the disproportionate burden that the amended rule will place on small businesses.

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Step VII: The regulatory relief provided to small businesses.

- Generally only one or two of the relief measures identified in this section will be meaningful for small businesses. Most meaningful and useful would be # 4, model remedies. The POG endorses model remedies for TPH-contaminated sites as the single most useful way to help small businesses meet cleanup standards and save costs. If the rule is adopted, we strongly recommend that Ecology work with the State Legislature to find funding for and place a high priority on developing model remedies as soon as possible.

  Another useful relief measure Ecology could take is to develop guidance for conducting risk evaluations for TPH-contaminated sites, using the fractionation approach. The guidance should include methods for the retrofitting of old TPH data, which is allowed under certain circumstances in the proposed rule amendments. This would save small businesses a significant amount of money on consultants as they attempt to comply with the new rule.

  A third useful action Ecology could take to help small businesses is to establish area-wide cleanup standards where appropriate. Relief measure # 2 is similar to a project the Duwamish Coalition has been working on with Ecology for several years. The Duwamish Coalition has been developing and documenting a groundwater model that would allow individual property owners to use an agreed upon data base, area-wide groundwater model and surface water cleanup standards for the Duwamish industrial area. This project should be brought to a successful conclusion and replicated in other parts of the state as appropriate.

  The POG strongly recommends these three measures as effective and appropriate ways to mitigate the small business economic impacts of the proposed new rule.

The POG believes the importance of making the rule economically accessible to small property owners cannot be overstated. If Ecology can mitigate the disproportionate impacts, the environmental benefits will be substantial. We offer the Duwamish industrial corridor as an example. The Duwamish area is a little over 9,000 acres containing over 5,000 parcels. The average parcel size is 1.7 acres. The majority of properties are held by small businesses or families with limited resources. This is most likely the case for many of the older, industrial areas that comprise the Brownfields of our state. A tool like model remedies for TPH-contaminated sites would greatly assist small property owners in moving forward with cleanups.

reply 13

Additional Comments on Relief Measures

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- Relief measure # 7 suggests that the State Toxics Control Account can be used to help fund private cleanups. POG members understand that this measure has been used for only a handful of private cleanups over the last 15 or so years. It has also been used in the case of orphaned properties, where costs are arguably already lodged in the public sector.

  One way this fund could be used to assist small businesses is to provide grant funding to non-profit organizations that in turn could provide technical assistance to small businesses. King County and the City of Seattle have done this using local funds and EPA grant money to partner with a non-profit organization in the Duwamish industrial area with excellent results – as evaluated by businesses.

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- Relief measure #13 suggests that the proposed amendments for terrestrial ecological cleanup standards "have been crafted so that most small business commercial sites will be exempt from performing a detailed evaluation." The POG has reservations about the ease with which the terrestrial ecological evaluations can be conducted, given the complexity of that program as presented in the proposed amendments. If, over time, it becomes apparent that the terrestrial ecological evaluation requirements are highly burdensome to small businesses without significant benefit to the environment, the POG hopes that Ecology will revisit this portion of the rule. It remains to be seen who will actually be exempt, and how manageable the process will be.

For future reference, an example of how the SBEIS could be more detailed in Step IV is provided below.

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Step IV: Do the costs imposed by the proposed rule exceed the "more than minor" cost threshold?

- Ecology appropriately uses a gasoline refueling station as a prototypical example to discuss impacts of the draft rule. At least one other example would have been useful. Further, the gas station example could have been fleshed out more to show how costs would be increased by removing more soil (say 10 or 20 yards) with contaminants for which clean-up standards are lower, as well as an example where costs are avoided since the standards are higher. This comment holds for both the Method A and Method B discussions. Also, examples could have been given to clarify the likely increase in costs for more sophisticated analytical tests. While the POG strongly endorses the TPH fractionation approach, the analytics will be more costly.

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COMMENTS ON

PROPOSED AMENDMENTS MODEL TOXICS CONTROL ACT CLEANUP REGULATION
(Pub. 99-606, Nov. 1999)

MODEL TOXICS CONTROL ACT PROPOSED RULE AMENDMENTS DRAFT ENVIRONMENTAL IMPACT STATEMENT
(Pub. 99-605, Nov. 17, 1999)

SMALL BUSINESS ECONOMIC IMPACT STATEMENT FOR REVISION TO CHAPTER 173-340, AMENDMENTS TO THE MODEL TOXICS CONTROL ACT
(Pub. 99-603, Nov. 3, 1999)

Submitted to the Department of Ecology
by Michael B. Gillett*
January 13, 2000

GENERAL COMMENTS

OVERVIEW

On November 17, 1999, the Department of Ecology (Ecology) proposed major revisions to the Model Toxic Control Act (MTCA) regulations.[1] This is the first comprehensive rewrite to the MTCA regulations since the program went into effect in 1991. It comes after nearly five years of studies, public meetings and negotiations that have involved hundreds of individuals who have contributed countless thousands of hours in an effort to make MTCA work better.

The formal rule making process began early in 1997 with the following statement:

> All of the Policy Advisory Committee's recommendations to the Legislature and Ecology focus on making the business of cleanups fairer, easier to understand, more flexible with less ambiguity, and less expensive. The Committee has recommended important changes to the cleanup rules that are used to carry out the law. Ecology is committed to carrying out the recommendations of the Com-

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* These comments are submitted on my own behalf, and not on behalf of any client. These comments do not necessarily represent the views or opinions of any current or former client.

[1] WSR 99-22-077 (Nov. 17, 1999) (State Register).

mittee that resulted from the 18-month study. We believe the changes will create a better Model Toxics Control Act thereby resulting in a cleaner environment.[2]

Ecology reiterated this statement in written material that it circulated to describe the proposed rule: "It is intended that these changes will make the business of environmental cleanups more equitable, more flexible, easier to understand, less ambiguous and less expensive.[3]

These goals provide the standard against which the proposed rule should be evaluated. The question is, does the proposed rule keep faith with the Policy Advisory Committee's (PAC's) objectives of making MTCA more equitable, more flexible, easier to understand, less ambiguous and less expensive? Unfortunately, the answer is

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THE PROPOSED RULE IS MORE ARBITRARY, NOT MORE EQUITABLE

At a minimum, equity, or a sense of fairness, requires that the regulations clearly relate to the protection of human health and the environment. Often, potentially liable persons (PLPs) express frustration over a requirement that increases the cost of a cleanup, but appears unrelated to any reduction in risks that may be present at the site. The increased availability of risk-based tools could have resulted in a better connection between particular remedial requirements and the protection of human health and the environment. However, that has not been the result under the proposed rule. To the contrary, in many cases the connection will be even less apparent.

Many of the risk assessment and risk management tools introduced by the proposed rules are accompanied by restrictions and complex procedures that render them unwieldy at most sites. The regulations are murkier than before. They are fraught with ambiguities and internal inconsistencies. Finally, the cost of cleanup appears likely to increase significantly. All this comes without any accompanying improvement in the ability of MTCA to protect human health or the environment. In fact, to the extent that the proposed rules may create disincentives to independent remedial actions, protection of health and the environment may actually suffer.

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INCREASED FLEXIBILITY IS LARGELY ILLUSORY

The original impetus for the establishment of the PAC was to add flexibility to and improve the usefulness of site-specific risk assessments. As introduced, the bill that eventually established the PAC would have required that cleanup standards –

> – be based upon generally accepted and peer reviewed scientific evidence or methodologies, reasonable assumptions of exposure scenarios as to amounts of contaminants to which humans or other receptors will be exposed, when and where those exposures will occur and the amount of that exposure, and shall avoid the use of redundant conservative assumptions ....[4]

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[2] Rule Authorization Document, Revisions to Chapter 173-340 WAC Model Toxics Control Act (Mar. 13, 1997) at 3.

[3] Ecology, Proposed Changes to the Model Toxics Control Act Cleanup Regulation (Pub. 98-605, Nov. 1999) at 1. The identical statement is made in accompanying written material that explains proposed changes to provisions regarding remedy selection, institutional controls, risk assessment, petroleum cleanups, terrestrial ecological evaluation and deriving soil cleanup levels for ground water protection.

[4] HB 1810, 54th Leg., 1995 Reg. Sess. (1995).

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165 Throughout the PAC's review of MTCA, site-specific risk assessment remained a principle focus. The PAC's final report[5] recommended several changes to the regulation that were intended to make the rule more flexible, including increased use of site-specific data and the use of alternate reasonable maximum exposure (RME) scenarios, the use of quantitative risk assessment in selecting cleanup actions, and the development of new tools to enable Method B and Method C cleanup levels to be established for petroleum releases.

However, in the proposed rule, Ecology put so many restrictions on the use of these tools, that the flexibility has all but disappeared. For example, although Ecology adopted PAC-negotiated language authorizing the use of alternate RME scenarios for remediation levels, it inserted a prohibition on the use of land uses other than residential or industrial when developing alternate RME scenarios for cleanup levels.[6] This language makes risk assessments less flexible than under the current rule, not more flexible.

166 **MTCA WILL BE MORE COMPLEX, NOT EASIER TO UNDERSTAND**

The proposed rule is extraordinarily complex. Often, both the substantive and procedural requirements are confusing to those who have experience with the program. Generally, PLPs and affected members of the public will have an even harder time understanding these provisions.

A good example of this is the new provision on soil concentrations that protect ground water. Currently, soil concentrations protective of ground water are established by multiplying the applicable ground water cleanup level by 100, or by demonstrating that a higher concentration is protective.[7] If the 100× method is not protective of ground water at a particular site, Ecology may require a lower concentration.[8] This simple system is illustrated by the accompanying flowchart. Although the default method is relatively unsophisticated (some say arbitrary), it is manifestly easy to understand and apply. Moreover, the rule provides for the establishment of more or less stringent concentrations on a site-specific basis in order to protect ground water.

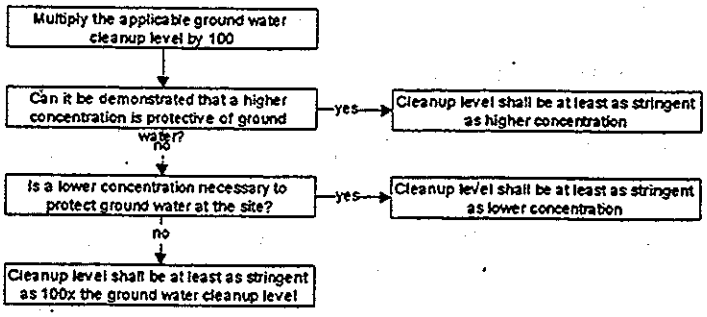

Figure 1. Current Soil to Ground Water Method

[5] Final Report of the Model Toxics Control Act Policy Advisory Committee (Dec. 15, 1996) (PAC Report).

[6] Proposed WAC 173-340-708(3)(d) ("Land uses other than residential and industrial, such as agricultural, recreational, and commercial, shall not be used as the basis for a reasonable maximum exposure scenario for the purpose of establishing a cleanup level. However, these land uses may be used as the basis for an alternate reasonable maximum exposure scenario for the purpose of developing a remediation level."). State Register at 157.

[7] WAC 173-340-740(3)(a)(ii)(A) and -745(4)(a)(ii)(A).

[8] WAC 173-340-740(3)(b)(iv) and -745(4)(b).

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The proposed rule eliminates the 100× method, and requires that soil concentrations protective of ground water be based on one of several methods in a new WAC 173-340-747. This proposed rule change is based on methods developed by Ecology and the Science Advisory Board.

Although the PAC did not recommend any changes in the methods used to determine soil concentrations that are protective of ground water, it was aware that Ecology was working with the Science Advisory Board to develop *guidance* on these alternative methods.[9] It was *not* aware that Ecology intended to eliminate the ability of a PLP to use the 100× method, since that requires rule making.

Ecology's proposed approach for determining soil concentrations that are protective of ground water is infinitely more complex than the current rule. There are two standard methods: a fixed parameter 3-phase partitioning model (which is not reliable for mixtures) and leaching tests (which may not be used for petroleum releases except as part of an empirical demonstration). In addition, there are several modified methods available under the proposed rule: a 4-phase partitioning model (largely limited to petroleum releases), a 3-phase partitioning model with site-specific data, other fate-and-transport models approved by Ecology and empirical demonstrations approved by Ecology. Application of these methods generally yields a soil concentration that is considered protective of ground water.[10]

The proposed rule also requires that the soil concentration not exceed the level that would result in the accumulation of nonaqueous phase liquid (NAPL) on or in the ground water. It is not clear whether this requirement is limited to petroleum releases, or applies to other substances as well. Calculation of an acceptable soil concentration for this purpose may be based on specified residual saturation screening levels for certain fuel distillates (found at Table 747-2). Alternatively, acceptable soil concentrations may be based on site-specific measurements of residual saturation or a site-specific demonstration that soil concentrations above residual saturation will not result in exceedances of ground water cleanup levels.

The standard methods (fixed 3-phase partitioning model and leach tests) generally result in conservative concentrations that are more stringent than necessary to protect ground water at all but the most highly vulnerable sites. The same is true of the residual saturation screening levels. That ground water should be protected at these vulnerable sites is not disputed. However, the methods used at these sites are not appropriate at other more common sites. Although the proposed rule enables PLPs to utilize other methods at these sites, the procedures for their use are complex and confusing. It is hard to imagine the more flexible methods being used except at large or complex sites. Certainly, it would be surprising to find these methods being used at sites operated by typical small businesses. As Ecology points out in the Small Business Economic Impact Statement (SBEIS), the more sophisticated risk assessment and risk management meth-

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[9] MTCA PAC Meeting Summary (Sept. 10, 1996) at 4.

[10] The 4-phase partitioning model (which is the basis for the Method A soil cleanup levels for petroleum) instead yields a predicted ground water concentration based on assumed soil concentrations; in order to derive a protective soil concentration using this method, it is necessary to run the model iteratively until the inputed soil concentrations result in a predicted ground water concentration that does not exceed ground water cleanup levels.

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ods provided under the rule "may not be as readily used by small business as large business because they are more complex and technical."[11]

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AMBIGUITY PERVADES THE PROPOSED RULE

Nothing illustrates the rule's ambiguities better than the new provisions regarding terrestrial ecological evaluations. The PAC devoted a great deal of time to the issue of protecting terrestrial ecological receptors. As stated in the PAC Report: "Today, Ecology makes those determinations [regarding the protection of ecological receptors] with no clear framework for themselves or for liable parties, and there is uncertainty and confusion about the requirements for ecological risk assessment."[12] Unfortunately, the proposed rule perpetuates this uncertainty and confusion.

Most significantly, the rule is ambiguous about the expected end product of a terrestrial ecological evaluation. It states that a purpose of these provisions is to establish "site-specific cleanup standards for the protection of terrestrial plants and animals".[13] In addition, it requires that Method B soil cleanup levels be at least as stringent as "[c]oncentrations that result in no significant adverse effects on the protection and propagation of plants and animals established using the procedures specified in WAC 173-340-7490 through 173-340-7494."[14] A similar provision applies to Method C soil cleanup levels.[15]

On the other hand, the proposed rule states that a site-specific evaluation is conducted to determine whether the site poses a threat or potential threat of significant adverse effects to ecological receptors, and, if so, to "[f]acilitate selection of a remedy that is protective of terrestrial ecological receptors."[16] Although these objectives might be met by determining the concentration of a hazardous substance in the environment that would be protective of terrestrial receptors,[17] they may also be achieved in other ways.

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CLEANUPS WILL BE SIGNIFICANTLY MORE EXPENSIVE

Finally, Ecology acknowledges that the proposed rule fails to meet the goal of making cleanups less expensive. The SBEIS says that under the proposed rule, some costs will increase and other decrease.

> For example, the proposed changes to the Method "A" soil cleanup standards could increase costs for sites contaminated with benzene and lower the cleanup cost for sites with heating oil contamination. Similarly, if a person chooses to revise the default input parameters for calculating soil ingestion cleanup levels for sites contaminated with petroleum mixtures, then the revised parameters could raise or lower costs. The proposed amendments would make other changes that will raise

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[11] Ecology, Small Business Economic Impact Statement for Revision of Chapter 173-340, Amendments to the Model Toxics Control Act (Pub. 99-603, Nov. 3, 1999) at 14.

[12] PAC Report at 30.

[13] Proposed WAC 173-340-7490(1)(a)(iii). State Register at 196.

[14] Proposed WAC 173-340-740(3)(b)(iv). State Register at 181. See also proposed WAC 173-340-705(2)(b). State Register at 155.

[15] Proposed WAC 173-340-745(5)(b)(v). State Register at 189. See also proposed WAC 173-340-706(2)(b). State Register at 156.

[16] Proposed WAC 173-340-7493(1)(b). State Register at 198.

[17] Proposed WAC 173-340-7492(1)(d) and -7493(3). State Register at 198-99.

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cleanup costs at certain sites. Specifically, the addition of dermal and vapor exposure pathways when using site-specific risk assessments to develop soil cleanup standards may increase costs at sites that choose this option. Still other proposed changes could decrease costs such as the provisions expanding the use of quantitative risk assessment when selecting the cleanup remedy.[18]

Ecology concludes that, after all is said and done, the proposed rule will "virtually always" increase the cost of cleanup for "any business responsible for cleaning up even a small portion of a small area of low toxicity contamination".[19] With respect to gasoline service stations (the only business sector for which Ecology attempted to quantify the cost increases), costs are projected to increase by as much as 20 percent.[20]

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FAILURE OF THE NEGOTIATED RULE MAKING PROCESS

That the proposed rule fails to meet the standard set out by Ecology is the direct consequence of the fact that Ecology did not follow through on its commitment, made in the Preproposal Statement of Inquiry,[21] to engage in a negotiated rulemaking process.

Ecology started in the right direction. At the first meeting of the External Advisory Workgroup, Ecology said: "The goal is to reach consensus on the *terms* of a proposed rule which is presented for public review and comment."[22] But External Advisory Workgroup meetings soon deteriorated into little more than briefing sessions. By the end of 1997, Ecology essentially closed off all communication with stakeholders, including the External Advisory Workgroup, and simply wrote its own rule.

Ecology's proposed new rule was circulated in February 1998. It was almost universally criticized as overly complex and unworkable. By no means was it the result of any consensus on the terms of a proposed rule. Eventually, even Ecology acknowledged that this draft was fundamentally flawed. In June 1998, Ecology announced that it would resume negotiations on rule language with interested stakeholders, stating that the "[d]evelopment of alternative rule language is strongly encouraged".[23] Ground rules established for the negotiations stated that "[t]he focus is to draft specific rule language AT THESE SESSIONS, and reach a consensus among those at the table."[24] It appeared that after the disaster of its first draft, Ecology was ready to commence real negotiations.

Responding to Ecology's invitation to submit proposed rule language, the Association of Washington Business (AWB) developed a comprehensive discussion draft based on the specific

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[18] SBEIS at 12. State Register at 96-97.

[19] SBEIS at 12-13. State Register at 97.

[20] SBEIS at 19-20. State Register at 100. The analytical basis for Ecology's projected cost increase at gasoline service stations is not discussed in the SBEIS.

[21] WSR 97-10-092 (May 7, 1997)

[22] Ecology, Procedural Rules for the MTCA External Advisory Workgroup (Apr. 22, 1997) at 1 (emphasis added). This statement reflects the statutorily-defined purpose of a negotiated rule making. RCW 34.05.310(2)(a).

[23] Letter from Mary E. Burg (June 5, 1998).

[24] Guidelines for MTCA PAC Rule Facilitation (July 27, 1998) (emphasis in original).

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170 recommendations that had been made by the PAC.[25] This draft was circulated prior to the commencement of negotiations. Ecology acknowledged that the AWB discussion draft was a balanced, well written alternative. However, Ecology agreed to very little of AWB's proposed language; significant portions of the AWB discussion draft were apparently rejected without even being discussed.

Ecology issued a second draft rule in December 1998. The new draft included some, but not all, of the provisions that had been agreed upon during the summer's negotiations. Most of the language in the draft was written by Ecology, and was not the result of any consensus on the terms of a proposed rule. Although an improvement over the February 1998 draft, Ecology's second draft was again subject to severe criticism for making the program more complex, less flexible and more costly.

Finally, Ecology published its proposed rule in November 1999. Little has changed in terms of substance since December 1998. Notwithstanding hundreds of suggestions from scores of individuals and organizations, Ecology's formal proposal shows little evidence of being responsive to stakeholders' concerns.

The process of revising MTCA began in 1995 with much fanfare. By the end of 1996, Ecology had in its hands a set of recommendations giving it a blueprint for modest but real improvements to the program. Unfortunately, it has never taken advantage of the opportunity to adopt these improvements. Instead, it has engaged in a seemingly never-ending exercise that has lost all sense of purpose. Almost no one who started in 1995 has been able to sustain any degree of confidence that their participation will make a difference.

Unless Ecology listens very closely to the concerns expressed by the stakeholders during the 60-day public comment period, *and responds to those concerns with substantive changes*, this entire process will be remembered as nothing more than a victory for the last person standing.

It has been reported that Ecology does not expect to complete the rule making process by May 17, 1999, which will result in the proposed rule being automatically withdrawn. This is largely due to the number of comments Ecology anticipates that it will receive and be obligated to respond to. Had Ecology followed through on its commitment to negotiate the terms of the rule, it is likely that it would be receiving far fewer comments recommending substantive changes. Before re-proposing a rule that is so clearly unacceptable to most stakeholders, perhaps Ecology should consider taking the negotiations to their logical end – i.e., the statutory goal of trying to reach agreement on the *terms* of the rule prior to issuance of a proposal.

171 ## COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

The State Environmental Policy Act (SEPA)[26] requires that all "major actions significantly affecting the quality of the environment" be accompanied by an environmental impact statement that, among other things, identifies "alternatives to the proposed action".[27] The Draft Environ-

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[25] AWB, Discussion Draft, Proposed Model Toxics Control Act Rule Revisions (June 15, 1998).

[26] Ch. 43.21C RCW.

[27] RCW 43.21C.030(2)(c)(iii).

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mental Impact Statement (DEIS) for the proposed amendments[28] identifies only three alternatives: "No Action alternative (existing MTCA rule unchanged)", Proposed action alternative (adoption of the proposed rule amendments)", and "Policy and Guidance alternative (publishing of policies and guidance in lieu of the proposed rule amendments).[29] Having identified these three amendments, the DEIS discards the third one from further analysis because "changes to requirements in the rule cannot be enforced through policy and guidance documents."[30] Therefore, the DEIS' evaluation and comparison of environmental impacts is limited to the current rule and the proposed rule. This inadequate approach skews the analysis in favor of Ecology's preferred alternative.

This completely ignores at least two obvious reasonable alternatives. First, it does not consider an alternative that is limited to implementing the PAC recommendations. Ecology is, of course, aware of this alternative. For some 3½ years, it has been the alternative advocated by several former PAC members, as well as representatives of the state's business community. The AWB discussion draft[31] was based on this approach.

A second alternative not considered in the DEIS is implementation of the POG's unaltered recommendations for petroleum cleanups. Again, Ecology is aware of this alternative. It participated as a member of the POG, and adopted portions of the POG's recommendations but rejected others. As with the PAC recommendations, several POG members and others have specifically urged Ecology to accept all of the POG recommendations without modification.

To simplify the consideration of alternatives, it could be argued that the PAC alternative and the POG alternative be combined into one. After all, the PAC did endorse the process by which the POG was developing provisions for petroleum cleanups. However, it is unreasonable for Ecology to have failed to even consider these alternatives, whether separately or combined.

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COMMENTS ON THE SMALL BUSINESS ECONOMIC IMPACT STATEMENT

The purpose of the Regulatory Fairness Act (RFA)[32] is to "reduc[e] the disproportionate impact of state administrative rules on small business."[33] When a state agency proposes a rule that will impose more than minor costs on businesses in an industry, it must do two things. First, the agency must prepare a small business economic impact statement (SBEIS).[34] Second, based upon the extent of disproportionate impact on small business identified in the SBEIS, the agency must, where legal and feasible, reduce the costs imposed by the rule on small businesses.[35]

In the SBEIS for the proposed rule, Ecology concludes that the costs imposed by the proposal, over and above those imposed by the current rule, are more than minor. As Ecology

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[28] Ecology, *Model Toxics Control Act Proposed Rule Amendments Draft Environmental Impact Statement* (Nov. 17, 1999).

[29] DEIS at 17.

[30] DEIS at 25.

[31] See note 25.

[32] Ch. 19.85 RCW.

[33] RCW 19.85.011.

[34] RCW 19.85.030(1) and 19.85.040.

[35] RCW 19.85.030(3).

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states: "[A]ny business responsible for cleaning up even a small portion of a small area of low toxicity contamination will virtually always exceed the 'more than minor' cost threshold."[36] Therefore, Ecology prepared an SBEIS and identified a set of measures intended to reduce the costs imposed by the rule on small businesses.

However, neither the SBEIS nor the cost mitigation measures selected by Ecology meet the requirements of the RFA.

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CONTENTS OF THE SMALL BUSINESS ECONOMIC IMPACT STATEMENT

An SBEIS must include seven elements: (1) a brief description of the requirements imposed by the proposed rule and the kinds of professional services likely to be required to comply; (2) the costs of compliance; (3) potential lost sales or revenue; (4) a comparison of the cost of compliance on small businesses with large businesses; (5) steps the agency will take to reduce costs on small businesses; (6) plans to involve small businesses in the development of the rule; and (7) a list of affected industries.[37] Ecology's SBEIS addresses each of these issues, but does so inadequately.

Description of Requirements Imposed by Proposed Rule

An SBEIS "must include a brief description of the reporting, recordkeeping, and other compliance requirements of the proposed rule, and the kinds of professional services that a small business is likely to need in order to comply with such requirements."[38] Ecology acknowledges that the proposed MTCA amendments "provide for reporting and recordkeeping; the required format that data or information must be submitted to Ecology; and the length of time that records must be retained by the site owner/operator."[39] It provides four examples of such requirements: periodic review, institutional controls, submittal of sampling data and retention of site cleanup records.[40]

However, the SBEIS fails to identify many new requirements that the proposed MTCA amendments will impose on affected businesses. Some of these new requirements are particularly significant for small businesses, including new provisions to establish soil cleanup levels protective of ground water,[41] and new minimum testing requirements.[42] Also, the new terrestrial ecological evaluation provisions impose more new requirements than just institutional controls.[43] None of these are identified in the SBEIS.

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[36] SBEIS at 13. State Register at 97.

[37] RCW 19.85.040.

[38] RCW 19.85.040(1).

[39] SBEIS at 18. State Register at 99.

[40] SBEIS at 18-19. State Register at 99-100.

[41] Proposed WAC 173-340-747. State Register at 191-196.

[42] Proposed WAC 173-340-830(2)(i) and Table 830-1. State Register at 206 and 219-220.

[43] Proposed WAC 173-340-7490 through 173-340-7494. State Register at 196-201.

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174 *Costs of Compliance*

An SBEIS "shall analyze the costs of compliance for businesses required to comply with the proposed rule ..., including costs of equipment, supplies, labor, and increased administrative costs."[44] Ecology concludes that the proposed MTCA amendments "will increase costs for some businesses and decrease costs for others."[45] It tries to illustrate the likely cost impacts by considering the effect of the proposed amendments on gasoline refueling stations. Where the PLP uses Method A cleanup levels at such sites, Ecology concludes that costs may be slightly higher. Where the PLP uses Method B, Ecology concludes that pre-cleanup planning, evaluating and testing will be more extensive, but the amount of soil removal may be reduced; however, it did not predict the overall cost impact of the proposed rule for Method B cleanups.[46] The SBEIS states that cleanup costs at most gas stations generally range from $10,000 to $100,000, and that Ecology expects cost increases under the proposed amendments will not exceed 20 percent.[47]

The discussion of the cost of compliance is scattered throughout the SBEIS. It does not discuss the costs of equipment, supplies, labor or increased administrative costs, as required by the statute.

175 *Potential Lost Sales or Revenue*

An SBEIS "shall consider, based on input received, whether compliance with the rule will cause businesses to lose sales or revenue."[48] The SBEIS states that the proposed MTCA amendments are unlikely to cause affected businesses to lose sales or revenues.[49] It assumes that the proposed amendments will not cause a significant increase in the time during which a business must temporarily shut down to conduct a cleanup. However, this conclusion ignores the fact that, with significantly more stringent cleanup levels, some businesses that otherwise would have been in compliance with MTCA will be subject to the cleanup requirements and others will be required to conduct more extensive, complex and time-consuming cleanups.

176 *Comparison of Small and Large Businesses*

"To determine whether the proposed rule will have a disproportionate impact on small businesses, the impact statement must compare the cost of compliance for small business with the cost of compliance for the ten percent of businesses that are the largest businesses required to comply with the proposed rules ...." This cost comparison is to be done on the basis of the cost per employee, cost per hour of labor, and/or cost per $100 of sales.[50] Ecology states that the preferable approach for making this cost comparison is the cost per $100 of sales.[51] It notes that the SBEIS prepared for the original MTCA rule concluded that the costs of compliance for small

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[44] RCW 19.85.040(1).
[45] SBEIS at 12. State Register at 96.
[46] SBEIS at 13. State Register at 97.
[47] SBEIS at 19-20. State Register at 100.
[48] RCW 19.85.040(1).
[49] SBEIS at 19-20. State Register at 100.
[50] RCW 19.85.040(1).
[51] SBEIS at 13. State Register at 97.

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businesses was up to 100 times the costs for large business, relative to sales.[52] Ecology points out that the proposed rule provides for the use of a variety of risk management tools, but that these tools may not be as useful to small businesses as they are to large businesses; therefore, it concludes that "small businesses are more likely to face disproportionately higher costs than large businesses."[53]

The SBEIS does not quantitatively compare the costs of compliance with the proposed amendment for small businesses and large businesses. Instead, apparently assuming that the cost comparison for the original MTCA rule provides enough information, Ecology simply concludes that there is a disproportionate cost impact. Therefore, it is not possible to assess *the extent* of disproportionate impact suffered by small businesses.

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Steps to Reduce Costs

An SBEIS "must also include ... [a] statement of the steps taken by the agency to reduce the costs of the rule on small businesses ..., or reasonable justification for not doing so ...."[54] Ecology identifies thirteen provisions of the proposed MTCA amendments that it believes reduces the cost of compliance for small businesses. Seven of these thirteen already exist under the MTCA as currently implemented. These are remediation levels (aka cleanup action levels), technical assistance for independent cleanups, facilitation of resource sharing, consideration of financial resources in enforcement decisions, mixed funding, agreed orders, and interim actions.

Of the remaining six, four are not likely to be useful in many cases, if at all. These are the area-wide point of compliance provision (which will apply at few sites), model remedies (which are speculative and depend upon the unlikely commitment of agency resources), site-specific risk assessment (which Ecology itself says is too complex and technical to be particularly useful to most small businesses), and the citizen technical advisor (which is established to facilitate public participation, not to provide PLPs with technical assistance).

That leaves two new measures that Ecology proposes that arguably may reduce the costs of compliance to small businesses: a wider variety of financial assurance mechanisms that may be used and exemptions for severe economic hardship, and exclusions from the requirement to conduct a detailed terrestrial ecological evaluation.

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Involving Small Businesses in Rule Development

An SBEIS "must also include ... [a] description of how the agency will involve small businesses in the development of the rule ...."[55] The SBEIS refers to Ecology's involvement with the PAC, External Advisory Group, and other stakeholders.[56] However, the RFA requirement is forward-looking. Although it may be instructive to understand the kind of involvement Ecology has sought from the small business community, and others, in the past, the SBEIS does not describe those steps that Ecology will take to involve parties in the development of the rule.

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[52] SBEIS at 14. State Register at 97.
[53] SBEIS at 14. State Register at 97.
[54] RCW 19.85.040(2)(a).
[55] RCW 19.85.040(2)(b).
[56] SBEIS at 18. State Register at 99.

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Affected Industries

An SBEIS "must also include ... [a] list of industries that will be required to comply with the rule ...."[57] The SBEIS observes that MTCA does not directly regulate a specific category of business, and that affected businesses may come from virtually every category.[58] It identifies twelve industrial categories that are commonly affected, including metal refining, miscellaneous wood products, agricultural chemicals, petroleum refining, petroleum asphalt, miscellaneous petroleum products, electroplating, natural gas production and distribution, sanitary sewerage and refuse systems, scrap metal and waste, gasoline service stations and automotive repair.[59] As noted above, the SBEIS provides a quantitative estimate of increased costs only for gasoline service stations – leaving small businesses in the remaining categories to wonder what effect the proposal might have on them.

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DUTY TO REDUCE COSTS TO SMALL BUSINESSES

Ecology's obligations under the RFA are not satisfied merely by preparing and publishing an SBEIS. The statute also requires that, based upon the extent of disproportionate impact on small business identified in the SBEIS, Ecology shall reduce the costs imposed by the rule on small businesses, where doing so is legal and feasible in meeting the stated objectives of MTCA.[60]

The mitigation measures adopted by the agency are to be "[b]ased upon the extent of disproportionate impact on small business identified in the [small business economic impact] statement".[61] This suggests that such mitigation measures, if legal and feasible, are required to the extent necessary to minimize or eliminate the disproportionate impact. The RFA authorizes Ecology to use any mitigation technique to reduce the costs of the rule on small businesses as long as the technique is legal and feasible.[62]

As discussed above, Ecology has selected thirteen measures that it claims will mitigate the economic impact on small businesses. However, only two of these can even arguably be said to be mitigation measures. Moreover, it is clear that these measures do not significantly minimize – and certainly do not eliminate – the disproportionate impact of the regulations on small businesses.

Ecology has not exhausted the legal and feasible possibilities for mitigating the costs to small business. The proposed Method A soil cleanup level for benzene provides a case in point. As noted in the SBEIS, this proposed cleanup level will increase costs for sites contaminated with benzene.[63] Although a site-specific Method B risk assessment may lead to a higher cleanup level, the use of such procedures will often be beyond the technical or financial capability of small businesses.[64] However, the proposed amendments would impose no disproportionate impact on

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[57] RCW 19.85.040(2)(c).
[58] SBEIS at 9. State Register at 95.
[59] SBEIS at 10. State Register at 96.
[60] RCW 19.85.030(3).
[61] RCW 19.85.030(3).
[62] RCW 19.85.030(3)(f).
[63] SBEIS at 12. State Register at 96.
[64] SBEIS at 14. State Register at 97.

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small business with respect to benzene if the current cleanup level were retained. It is within Ecology's discretion to retain the current cleanup level – certainly there is nothing in the statute that *requires* Ecology to adopt the proposed lower cleanup level.

Other examples abound. There appear to be many opportunities to mitigate the disproportionate impact of changes in remedy selection, institutional controls and cleanup standards consistent with the requirements of MTCA. However, except for the largely illusory mitigation measures identified in the SBEIS, at present it appears that none of these will be employed.

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SIGNIFICANT LEGISLATIVE RULE ANALYSIS REQUIREMENT

Before adopting the proposed amendments to MTCA, Ecology is required to prepare a significant legislative rule analysis.[65] Ecology must "[d]etermine, after considering alternative versions of the rule ..., that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives [of MTCA]."[66]

The selection of alternative approaches to the proposed amendments is key to the analysis, in the same way that the selection of alternatives is key to an environmental impact statement. It is probably reasonable to expect that Ecology intends to evaluate the same set of alternatives in the significant legislative rule analysis as it evaluated in the DEIS. For the same reasons as discussed under the comments on the DEIS, this would be an inadequate analysis – biased in favor of Ecology's preferred alternative.

SPECIFIC SUBSTANTIVE COMMENTS

182

WAC 173-340-130 ADMINISTRATIVE PRINCIPLES

(1) Subsection (8) states that remedial actions under MTCA are required to comply with SEPA.[67] It is not clear what this means, if anything, in the context of independent remedial actions.

Recommendation: Clarify that independent remedial actions, including nonbinding technical opinions, generally do not involve a major action by Ecology triggering SEPA requirements.

183

WAC 173-340-200 DEFINITIONS

DEFINITIONS RELATING TO HUMAN HEALTH CLEANUP STANDARDS

(2) Ecology proposes to add a definition of "non-potable".[68] This definition is broader than that provided under the proposed WAC 173-340-720(7)(a),[69] because the latter excludes

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[65] Ch. 34.05 RCW.
[66] RCW 34.05.328(1)(d).
[67] State Register at 105.
[68] State Register at 109.
[69] State Register at 169.

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183 cont. ground water that is likely to flow into surface water. Neither definition relates in any clear way to the criteria under the proposed WAC 173-340-720(2)[70] for identifying ground water that is not a current or potential future source of drinking water. The use of the term "non-potable" itself creates an unnecessary ambiguity in the rule. Interestingly, the rule never uses the term "potable." Instead, it focuses on the key issue: whether the ground water is a current or potential future source of drinking water.

Recommendation: Strike the proposed definition, and eliminate the use of the term "non-potable" wherever it occurs. Instead, the reference should be to ground water that, based on the criteria under WAC 173-340-720(2), is not a current or potential future source of drinking water.

184 (3) Ecology proposes to add a definition of "probabilistic risk assessment".[71] This term is used exclusively in the proposed WAC 173-340-708(11).[72] Given the relatively insignificant role allowed probabilistic risk assessment under the proposed rule, it seems unnecessary to provide a definition.

Recommendation: Strike the proposed definition.

185 **DEFINITIONS RELATING TO REMEDY SELECTION**

(4) Ecology proposes to add a definition of "cleanup action alternative",[73] the text of which actually is more pertinent to a description of a "cleanup action". The term "alternative" has a plain meaning, and there is no need to separately identify "cleanup action alternative" if the definition of "cleanup action" is clearly set forth.

Recommendation: Integrate the definition of "cleanup action alternative" into "cleanup action". Strike the separate definition of "cleanup action alternative".

186 (5) Ecology proposes to add a definition of "conceptual site model".[74] In that definition, the reference to "actual and potential exposure pathways" is unnecessary since the definition of "exposure pathway" includes "the path a hazardous substance *takes or could take* ...."[75]

Recommendation: Strike "actual and potential". Alternatively, conform the terminology in the two definitions so that it is clear they refer to the same thing. In particular, "potential" exposure pathways should not be construed to refer to a theoretical pathway that could not actually be complete at a given site.

187 (6) Ecology proposes to add a definition of "natural attenuation" that states: "Natural attenuation is not an active remedial measure."[76] Since "[e]xtending the restoration time

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[70] State Register at 164.
[71] State Register at 110.
[72] State Register at 161.
[73] State Register at 106.
[74] State Register at 107.
[75] State Register at 107. (emphasis added).
[76] State Register at 109.

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frame shall not be used as a substitute for active cleanup actions, when such actions are practicable",[77] it appears that monitored natural attenuation – which, by its nature, typically involves a longer restoration time frame – may not be selected as a cleanup action.

Recommendation: Strike the last sentence in the definition.

188

(7) Ecology proposes to amend the definition of "routine cleanup action".[78] It proposes to limit the definition to those sites that qualify for an exclusion from a simplified or site-specific terrestrial ecological evaluation. There is no reason to determine categorically that routine cleanup actions may not include remedial actions at sites that conduct a simplified terrestrial ecological evaluation.

Recommendation: Amend the fourth bullet to provide that sites excluded from further terrestrial ecological evaluation under either the proposed WAC 173-340-7491 or 173-340-7492 may be considered routine cleanup actions if they meet the other pertinent criteria.

189

DEFINITIONS POTENTIALLY AFFECTED BY THE NONDELEGATION DOCTRINE

(8) Based on concerns arising out of the nondelegation doctrine, Ecology proposes to eliminate certain provisions under the MTCA regulations that incorporate various state and federal rules and laws, as well as certain industry and professional standards. For example, the definition of "carcinogen" is based on the U.S. Environmental Protection Agency's Guidelines for Carcinogen Risk Assessment "as presently published or as subsequently amended or republished."[79] However, Ecology proposes to eliminate the reference to revisions to the guidelines.[80] Although this does not make for technically-sound environmental policy, Ecology is probably correct that the nondelegation doctrine leaves it with little choice.[81] In addition to definitions proposed to be modified by Ecology, the following also may be affected by this doctrine: applicable state and federal laws, Cohen's method, conducting land use planning under chapter 36.70A RCW, hazardous substance, health effects assessment summary tables (HEAST), industrial properties, integrated risk information system (IRIS), Land's method, legally applicable requirements, relevant and appropriate requirements, threatened or endangered species, underground storage tank (UST), volatile organic compound, and zoned for (a specified) use.[82]

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[77] Proposed WAC 173-340-350(13)(d)(v). State Register at 122.

[78] State Register at 111.

[79] WAC 173-340-200.

[80] Proposed WAC 173-340-200. State Register at 106. Ecology has proposed similar amendments to the definitions of "federal cleanup law", "maximum contaminant level", "maximum contaminant level goal", and "secondary maximum contaminant level". State Register at 108, 109 and 111.

[81] According to the Washington Supreme Court, the Legislature may "enact statutes which adopt *existing* federal rules, regulations, or statutes," but it may not adopt "legislation which attempts to adopt or acquiesce in *future* federal rules, regulations, or statutes." *State v. Dougall*, 89 Wn.2d 118, 122, 570 P.2d 135 (1977) (emphasis by the court). Similarly, while the Legislature may adopt standards developed by a private association, it may not adopt standards that have not yet been developed. *State ex rel. Kirschner v. Urquhart*, 50 Wn. 2d 131, 136-37, 310 P.2d 261 (1957).

[82] State Register at 106 – 112.

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Recommendation: Clarify whether and how the above definitions, or others, are affected by the nondelegation doctrine.

190

WAC 173-340-300 SITE DISCOVERY AND REPORTING

REPORTING DEADLINE

(9) Subsection (2)(a) strikes the current requirement that releases discovered prior to June 1, 1990 be reported by that date, and subjects all releases to a reporting date within 90 days of discovery.[83] Striking the reference to June 1, 1990 would be appropriate if it were certain that all releases discovered prior to that date have been reported. However, it seems most prudent to account for the possibility that some releases discovered prior to that date have not been reported.

Recommendation: Retain the reference to June 1, 1990.

191

DETERMINING WHETHER A RELEASE MAY BE A THREAT TO HUMAN HEALTH OR THE ENVIRONMENT

(10) Subsection (2)(b) states that persons should use best professional judgment in deciding whether a release of a hazardous substance may be a threat or potential threat to human health or the environment.[84] It then provides a non-exhaustive list of "examples of situations that generally should be reported under this section".[85] The term "'should' means the provision is optional and permissive, and does not impose a requirement.[86] The list of examples would be more appropriately placed in guidance than the rule, since the examples clearly are not, and should not, be enforceable requirements.

Recommendation: Strike the list of examples and retain them in guidance.

192

(11) Subsection (2)(b)(iv) provides that a person generally should report a release where "free liquids" are on or in the ground water.[87] Presumably, this refers to free product or NAPLs.

Recommendation: Clarify that this provision refers to the presence of free product or NAPLs on or in the ground water.

193

(12) Subsection (2)(b)(viii) provides that a person generally should report a release where chemicals have leaked or been dumped on the ground.[88] Does this include instances where a release to the ground surface occurred, but prior to the discovery all surface contamination is gone?

Recommendation: Clarify that this provision refers to the discovery of current surface contamination, not historic contamination.

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[83] State Register at 113.
[84] State Register at 113.
[85] State Register at 113.
[86] Proposed WAC 173-340-210(6). State Register at 113.
[87] State Register at 113.
[88] State Register at 113.

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194 (13) Subsection (2)(b)(ix) provides that a person generally should report a release from a leaking underground petroleum storage tank.[89] Is this meant to include underground petroleum storage tanks not regulated under chapter 90.76 RCW (e.g., most home heating oil tanks)? Why does it exclude regulated non-petroleum underground storage tanks?

Recommendation: Clarify that this provision refers to regulated underground storage tanks, and that the reporting requirements are specified under WAC 173-340-450.

195 **WAC 173-340-320 SITE HAZARD ASSESSMENT**

TERRESTRIAL ECOLOGICAL EVALUATION

(14) Subsection (4)(h) requires that the site hazard assessment include sufficient information to determine whether the site qualifies for an exclusion from a terrestrial ecological evaluation, and, if not, whether it meets any of the criteria that would require the preparation of a site-specific terrestrial ecological evaluation.[90] The information available at the time a site hazard assessment is conducted may not be complete, especially with respect to whether a site-specific terrestrial evaluation is required.

Recommendation: Clarify that a determination in the site hazard assessment that a site does not qualify for an exclusion, or that it meets one of the criteria that requires preparation of a site-specific terrestrial ecological evaluation, is a preliminary determination that may be reversed based on additional information and evaluation.

196 **WAC 173-340-350 REMEDIAL INVESTIGATION AND FEASIBILITY STUDY**

TERRESTRIAL ECOLOGICAL EVALUATION

(15) Subsection (7)(c)(iii)(F)(I) requires that the RI include any information needed to conduct a terrestrial ecological evaluation or to establish an exclusion.[91] Does this mean that all information-gathering activities arising under the proposed WAC 173-340-7490 through 173-340-7494 must be completed prior to completion of the RI? Does this include completion of a site-specific evaluation – if one is conducted – in accordance with the methods under the proposed WAC 173-340-7493(4)? This appears to conflict with the next provision, as discussed below.

Recommendation: Make this provision consistent with the proposed WAC 173-340-350(7)(c)(iii)(F)(II).

197 (16) Subsection (7)(c)(iii)(F)(II) authorizes a terrestrial ecological evaluation to be conducted after selection of the cleanup action to protect human health under appropriate circumstances.[92] This appears to conflict with the apparent intention of the previous provision, which requires the RI to include all information needed to conduct a terrestrial ecological evaluation or establish an exclusion.

ccc

[89] State Register at 113.
[90] State Register at 115.
[91] State Register at 118.
[92] State Register at 118.

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Recommendation: Clarify that a terrestrial ecological evaluation need *not* be conducted prior to selection of the human health-based remedy unless there is a specific reason to do so.

198

(17) Subsection (8)(c)(i)(E) requires that, if necessary, the FS shall evaluate residual threats that would accompany each cleanup action alternative and determine whether remedies that are protective of human health will also be protective of terrestrial receptors, then refers back to the proposed WAC 173-340-350(7)(c)(iii)(F).[93] Does this subsection require anything more than the requirements under the cross-referenced proposed WAC 173-340-350(7)(c)(iii)(F)? If so, what additional requirements are imposed? If not, these provisions are redundant, and one of the them should be stricken. Also, what circumstances would render an evaluation of the residual threats "necessary"? Finally, the context of this sentence suggests that this requirement to evaluate residual threats is limited to an evaluation of the residual threats to terrestrial ecological receptors. Is this correct? If not, what circumstances would render an evaluation of the residual threats to human health "necessary"?

Recommendation: Strike this provision as redundant.

199

MINIMUM REQUIREMENTS

(18) Subsection (9) proposes to impose a dozen so-called "minimum requirements."[94] This is inconsistent with the PAC recommendation. The PAC recommended that remedies be selected by use of a disproportionate cost analysis, whereby the costs and benefits of various alternatives, as measured by seven specified criteria, are evaluated and compared.[95] No where in the PAC recommendation is there a reference to any overlying requirements.

Ecology takes the position that these requirements exist under the current MTCA regulations. Since the PAC did not expressly recommend their elimination, Ecology concludes that it intended they stay in place. However, the PAC's silence on a specific provision, by itself, neither indicates that the PAC intended the provision to remain or be deleted. The PAC merely stated that "the intent [is not] *necessarily* to eliminate language in the existing rule section simply because it is not described in the framework."[96] In fact, as reflected in the meeting summary, the PAC actually intended that the recommendations state that the intent was not necessarily "to eliminate or preclude other changes" to existing rule language.[97] Although the PAC did not wish to signal an intent to eliminate language merely because it was not included in the framework, such language should be eliminated if it is inconsistent with a specific PAC recommendation.

It is not clear what is meant by the term "minimum requirement." The proposed rule states that all cleanup actions must meet these requirements, but that some of the re-

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[93] State Register at 119.

[94] Proposed WAC 173-340-350(9). State Register at 119-20..

[95] PAC Report at C-48.

[96] PAC Report at C-45 (emphasis added).

[97] MTCA PAC Meeting Summary (Nov. 6, 1996) at 2 (emphasis in original).

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quirements contain flexibility and will require the use of professional judgment.[98] This suggests that some requirements are more required than others. Does it mean that Ecology may use its best professional judgment to exercise such flexibility, and to grant qualifications or waivers?

Furthermore, it is not accurate for Ecology to say that its proposed minimum requirements merely restate existing regulations. To begin with, in the proposed rule, unlike the existing regulations, the minimum requirements may be construed to apply to every alternative included in the FS. Although upon casual consideration, it might seem reasonable to require that all alternatives meet the minimum requirements applicable to a selected remedy, closer analysis shows that this is neither practical nor reasonable. To begin with, some of the minimum requirements are not susceptible to complete analysis until after the FS has been prepared. For example, how can it be shown in the FS that each alternative considers public concerns, as required under the proposed rule,[99] when public notice and comment may not even occur until publication of the draft cleanup action plan?[100] Perhaps even more dramatically, how can it be shown that each alternative uses permanent solutions to the maximum extent practicable, as required under the proposed rule,[101] when the purpose of the disproportionate cost test is to determine which *one* of the alternatives is permanent to the maximum extent practicable.[102]

Some of the language in the proposed rule suggests that Ecology does *not* intend the minimum requirements to apply to each alternative, but only to the selected cleanup action. If so, Ecology should modify the proposed rule in two ways. First, it should place these provisions in WAC 173-340-360, which addresses the selection of the cleanup action, rather than WAC 173-340-350, which addresses the evaluation of alternatives in the FS. Second, it should eliminate the contrary implication found in the provision that "[a]lternatives that are in the feasibility study must be evaluated to determine whether they meet all of the minimum requirements in WAC 173-340-350(9)."[103] The same implication needs to be eliminated from the provision that "[w]hen selecting from cleanup action alternatives that fulfill the threshold requirements, the selected action shall [meet certain other requirements]".[104]

Placement of the minimum requirements in WAC 173-340-360 would solve a practical problem (i.e., how to demonstrate compliance with such requirements for each and every alternative prior to selection of the remedy). Furthermore, if moved to WAC 173-340-360, some of these minimum requirements, although not explicitly referenced in the PAC report, clearly are consistent with the PAC recommendation. These include the "threshold" and "other" requirements, most of which reflect statutory requirements which the PAC consciously chose not to modify. It is also reasonable to include the ground water re-

[98] Proposed WAC 173-340-350(9). State Register at 119.
[99] Proposed WAC 173-340-350(9)(b)(iii). State Register at 119.
[100] Proposed WAC 173-340-380(2). State Register at 127.
[101] Proposed WAC 173-340-350(9)(b)(i). State Register at 119.
[102] Proposed WAC 173-340-360(3). State Register at 125-26.
[103] Proposed WAC 173-340-360(2). State Register at 125.
[104] Proposed WAC 173-340-350(9)(b). State Register at 119.

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quirements, since these were agreed to by the parties to the stakeholder negotiations in 1998, and reflect a consensus regarding how the disproportionate cost test applies to ground water cleanup actions.

Recommendation: Move the minimum requirements back to WAC 173-340-360 in order to avoid the possibility that they would be construed to apply to all alternatives. WAC 173-340-350 could still cross-reference these provisions in order to clarify that alternatives that clearly do not meet the minimum requirements may be screened out from further evaluation.

An alternative approach may be to require a determination that each alternative complies with the threshold requirements, but not to require a detailed evaluation of whether each alternative meets the other minimum requirements beyond ensuring that the proposed cleanup action complies. Is this the implication of the proposed WAC 173-340-350(9)(b), where it states that "[w]hen selecting from cleanup action alternatives that fulfill the threshold requirements, *the selected action* shall" meet certain other requirements?[105] If so, only the threshold requirements should remain under WAC 173-340-350, and the other requirements should be moved to WAC 173-340-360.

200 (19) Subsection (9)(a)(iii) requires that cleanup actions comply with applicable state and federal laws.[106] This provision is redundant with the previous provision requiring compliance with cleanup standards since the definition of the term cleanup standards includes applicable state and federal laws.

Recommendation: Strike this provision.

201 (20) Subsection (9)(d) requires that contaminated soils at current or potential future residential areas, schools and day care centers be treated, removed or contained.[107] Does this requirement prohibit anything other than a cleanup action that relies exclusively on institutional controls?

Recommendation: If other types of cleanup actions are prohibited, they should be identified. Otherwise, this provision should be clarified to simply say that such cleanup actions shall not rely exclusively on institutional controls.

202 (21) Subsection (9)(d) also identifies that factors that are to be considered in determining whether property is a potential residential area, there is no discussion of how to determine whether property is a potential school or day care center.[108] The latter term is not even defined in the rule, and the definition of school provides no insight into how to determine whether property might be used as a school in the future.

Recommendation: Clarify the kinds of properties that are subject to this provision.

203 (22). Subsection (9)(e)(ii) prohibits cleanup actions from relying primarily on institutional controls and monitoring where it is technically possible to implement an alternative that util-

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[105] State Register at 119 (emphasis added).
[106] State Register at 119.
[107] State Register at 120.
[108] State Register at 120.

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izes a more permanent cleanup action for all or a portion of the site.[109] This provision is irreconcilable with the proposed subsection (9)(e)(iii), which requires that institutional controls be evaluated according to the evaluation criteria just as any other cleanup action component.[110] The latter was a specific recommendation of the MTCA Policy Advisory Committee, and should take precedence over inconsistent provisions of the prior rule.[111]

The term "primarily" needs clarification. Does it mean that a certain proportion of the hazardous substances subject to the cleanup action must be addressed by a remedial action component other than an institutional control? If so, what proportion, and is the proportion to be based on volume, weight, toxicity or some other consideration? Alternatively, is the determination as to what constitutes a cleanup action that relies primarily on institutional control a site-specific issue that requires the use of best professional judgment?

Recommendation: Strike this provision.

204 (23) Subsection (9)(e)(iii) provides that institutional controls "shall" demonstrably reduce risks.[112] The use of the mandatory "shall" is inconsistent with WAC 173-340-440(6),[113] and the PAC recommendation,[114] both of which provide that institutional controls "should" demonstrably reduce risks.

Recommendation: Insert "should" in lieu of "shall".

205 (24) Subsection (9)(f) requires that cleanup actions prevent or minimize present and future releases and migration of hazardous substances.[115] Presumably this requirement requires only that releases and migration be prevented or minimized to the maximum extent practicable.

Recommendation: Clarify that releases and migration shall be prevent or minimized to the maximum extent practicable.

206 (25) Subsection (9)(g) requires that cleanup actions shall not rely primarily on dilution and dispersion unless the incremental costs of any active remedial measures over dilution and dispersion grossly exceed the incremental degree of benefits of active remedial measures over the benefits of dilution and dispersion.[116] This is yet another provision that may preclude the selection of a cleanup action based on monitored natural attenuation.

The term "primarily" in this provision suffers from the same lack of clarity as in subsection (9)(e)(ii), discussed under Comment (22) above. It is likewise unclear how to determine whether costs *grossly* exceed the benefits.

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[109] State Register at 120.
[110] State Register at 120.
[111] PAC Report at 33.
[112] State Register at 120.
[113] State Register at 132.
[114] PAC Report at 33.
[115] State Register at 120.
[116] State Register at 120.

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Recommendation: Strike the provision.

207 **EVALUATION CRITERIA**

(26) Subsection (10)(a) includes improvement of the overall environmental quality as a factor to be considered in connection with the protectiveness criterion.[117] Is the intent here to incorporate into the analysis an evaluation of whether the cleanup action itself has an adverse effect on the environment (e.g., destroying a wetland as a consequence of a cleanup action)? Or, is the intent to incorporate consideration of environmental benefits that go beyond protection of human health and the environment from the threat posed by hazardous substances released at the site? If so, that would go beyond the purpose of MTCA, and could have the effect of requiring some property owners to pay for public environmental benefits that are unrelated to the release of hazardous substances at the site.

Recommendation: Clarify that this factor refers to potential adverse environmental effects of an alternative.

208 (27) Subsection (10)(d) includes a parenthetical definition of "long-term reliability" which somewhat obscures the point of the reliability consideration.[118]

Recommendation: Rewrite this consideration along the following lines: "its reliability for the period of time during which hazardous substances are expected to remain on site at concentrations that exceed cleanup standards,".

209 (28) Subsection (10)(g) requires consideration of public concerns.[119] Inasmuch as the evaluation criteria apply to all alternatives included in the FS, it would appear that some consideration of public concerns is expected prior to completion of the FS. Does this imply that there may be public participation requirements other than those provided under WAC 173-340-600?

Recommendation: Clarify that WAC 173-340-600 is the sole source of public participation requirements under MTCA.

210 **REMEDIATION LEVELS**

(29) Subsection (11)(b)(i) requires that all cleanup action alternatives be evaluated to determine whether they meet all of the requirements of subsection (9).[120] See the discussion of this issue under Comment (18).

Recommendation: Clarify that this simply identifies the requirements against which alternatives are to be evaluated; not that it requires a determination that each alternative meets those requirements.

211 (30) Subsection (11)(b)(ii) provides that remediation levels may be included as part of a cleanup action only if it is determined, using the disproportionate cost analysis, that a

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[117] State Register at 120.
[118] State Register at 120.
[119] State Register at 120.
[120] State Register at 121.

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permanent cleanup action is not practicable.[121] Isn't this just another way of saying that the proposed cleanup action shall be permanent to the maximum extent practicable, and that this shall be determined through a disproportionate cost analysis? If so, the provision is redundant with WAC 173-340-360(3)(a)(i).[122] Worse, it is potentially confusing since it suggests that there must be an additional determination of permanence to the maximum extent practicable.

Recommendation: Strike this provision.

211 cont.

(31) Subsection (11)(b)(ii) also provides that remediation levels may be included as part of a cleanup action only if it is determined that the alternative meets all of the requirements under subsection (9).[123] This provision appears to be redundant with WAC 173-340-360(2). Therefore, it is unnecessary. Its inclusion is potentially confusing.

Recommendation: Strike this provision.

212

(32) Subsection (12)(b) states that "[o]ther considerations" are needed to evaluate the protectiveness of a remediation level that is established by using a modified Method B or C equation or alternate reasonable maximum exposure scenario.[124] What other considerations would be needed for this purpose? What is the basis for this language? It does not appear in the PAC Report, and has never been previously raised. If a person preparing a quantitative risk assessment for purposes of establishing a remediation level follows the appropriate procedures and meets the relevant standards under WAC 173-340-700 through 173-340-760, there is no justification for imposing additional constraints.

Recommendation: Strike the second sentence in subsection (12)(b).

213

(33) The last sentence of subsection (12)(e) appears to imply that the modified soil to ground water methods under proposed WAC 173-340-747 may only be used to establish remediation levels, and not cleanup levels.[125] This would conflict with the PAC-drafted language at proposed WAC 173-340-708(10)(b)(i).[126]

Recommendation: Clarify that the modified methods under proposed WAC 173-340-747 may be used to set cleanup levels.

214

COMMERCIAL GAS STATION SCENARIO

(34) Subsection (12)(g) provides exposure parameter values that may be used to evaluate risk to human health resulting from soil ingestion at a commercial gas station when establishing a remediation level.[127] This is based on a PAC recommendation,[128] but in-

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[121] State Register at 121.
[122] State Register at 125.
[123] State Register at 121.
[124] State Register at 121.
[125] State Register at 121.
[126] State Register at 160.
[127] State Register at 121.
[128] PAC Report at 29-30.

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cludes some conditions beyond those recommended by the PAC. Specifically, the PAC recommendation did not require that the gas station be active, nor that it be covered with asphalt or concrete pavement. The PAC did recommend that appropriate institutional and/or engineering controls be applied; therefore, pavement might be required as part of the remedy if needed to prevent higher exposure levels – but that is not the same as requiring pavement as a condition of using the scenario. Furthermore, there appears to be no justification for requiring that the gas station be an active station if the appropriate controls are in place to prevent higher exposure levels.

Recommendation: Eliminate the conditions that limit use of this scenario to active stations that are paved with asphalt or concrete.

215 (35) Subsection (12)(g) only addresses the soil direct contact pathways. The PAC recommended that Ecology also develop approaches for setting remediation levels for other relevant pathways, including vapor and soil to ground water.[129]

Recommendation: Ecology should adopt default exposure scenarios applicable to commercial gas stations for other relevant pathways.

216 (36) Subsection (12)(g) might be misconstrued to describe the *only* way in which a remediation level may be established for a commercial gas station.

Recommendation: Clarify that subsection (12)(g) merely describes one acceptable method for establishing a remediation level, and that a commercial gas station may modify other exposure parameters or may establish remediation levels using other methods to the same extent as any other site.

217 **RESTORATION TIME FRAME**

(37) Subsection (13)(d)(ii) authorizes the use of a longer restoration time frame for cleanup actions that have a greater degree of long-term effectiveness than disposal, isolation or containment.[130] This provision is a relic of the technology hierarchy mindset, which the PAC rejected.

Recommendation: Strike this provision.

218 (38) Subsection (13)(d)(v) provides that extending the restoration time frame shall not substitute for active cleanup actions when such actions are practicable.[131] What does the phrase "active cleanup actions" mean?

Recommendation: Define "active cleanup actions". At a minimum, ensure that active cleanup actions may include monitored natural attenuation.

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[129] PAC Report at 29.

[130] State Register at 122.

[131] State Register at 122.

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WAC 173-340-360 SELECTION OF CLEANUP ACTIONS

MINIMUM REQUIREMENTS

(39) Subsection (2) requires that all cleanup action alternatives in the feasibility study be evaluated to determine whether they meet all of the requirements of subsection (9).[132] See the discussion of this issue under Comment (18).

Recommendation: Clarify that this simply identifies the requirements against which alternatives are to be evaluated; not that it requires a determination that each alternative meets those requirements.

220

DISPROPORTIONATE COST ANALYSIS

(40) Subsection (2) appears to limit the purpose of the disproportionate cost test to determining whether an alternative in the FS meets the requirement that a cleanup action be permanent to the maximum extent practicable.[133] This is a far less significant role for the disproportionate cost test than envisioned by the PAC. The disproportionate cost test is the linchpin of the PAC's remedy selection framework. According to the PAC: "The test for selecting a remedy shall be a 'disproportionate cost' test."[134]

Recommendation: Clarify that the disproportionate cost test is the basis for selecting a cleanup action.

221

(41) Subsection (3) is very ambiguous on how to apply the disproportionate cost test.[135] What it prescribes is the following:

- Rank the alternatives evaluated in the FS from most to least permanent.
- Compare the costs and benefits (using the evaluation criteria under WAC 173-340-350(10)) of those alternatives that meet the minimum requirements. In conducting this comparison, the most practicable permanent alternative is to be the baseline alternative against which other alternatives are compared.
- The costs of an alternative are disproportionate to its benefits if the incremental costs of the baseline alternative over those of a lower cost alternative ($C_b - C_{lc}$) exceed the incremental degree of benefits achieved by the higher cost alternative over those of the lower cost alternative ($B_b - B_{lc}$). This can be expressed mathematically as follows: Costs are disproportionate to benefits if $(C_b - C_{lc}) > (B_b - B_{lc})$.

This brief description of the disproportionate cost test does not provide adequate information to ensure its consistent implementation. For example, the function of the baseline alternative is not clear. Under the proposed rule, is it only necessary to compare the alternatives in the FS against the baseline alternative? If so, what is the result if the costs of the baseline alternative are disproportionate to its benefits with respect to two lower

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[132] State Register at 125.
[133] State Register at 125.
[134] PAC Report at C-48.
[135] State Register at 125-26.

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cost alternatives – which of the two lower costs alternatives is considered permanent to the maximum extent practicable?

On the other hand, if the proposed rule requires that all alternatives be compared against one another, what is the purpose of designating one as the baseline alternative? And what would be the purpose of continuing to compare the baseline alternative against other alternatives once it has been found to be disproportionately costly? If the baseline alternative is disproportionately costly when compared to any other alternative, shouldn't the baseline be discarded from further consideration at that point?

Recommendation: Provide more specificity as to how a disproportionate cost test may be conducted.

222 (42) Subsection (3)(a)(i) provides that the costs and benefits to be evaluated in the disproportionate cost analysis are the evaluation criteria under the proposed WAC 173-340-350(10).[136] However, it is not clear which of these criteria are costs and which are benefits. Perhaps some costs and benefits fall under the same criteria. For example, under the protectiveness criterion, achieving an acceptable level of risk to human health would be considered a benefit, while increased off-site risks might be considered a cost. Is the determination of what constitutes costs and what constitutes benefits a site-specific matter? Or does Ecology intend that all disproportionate cost analysis will uniformly treat certain matters as costs and certain matters as benefits?

Recommendation: Clarify that there may be both costs and benefits associated with the same criterion, and that the determination as to what constitutes a cost and what constitutes a benefit is a site-specific determination.

223 (43) Subsection (3)(a)(ii) provides that a disproportionate cost analysis need not be conducted if Ecology and the PLP agree that (1) the incremental costs of a permanent alternative over that of the lower cost alternatives are not substantial, and (2) the permanent alternative is the proposed cleanup action in the draft cleanup action plan.[137] Recognizing that this is the formulation recommended by the PAC,[138] nevertheless is anything served by retaining the first condition? If both Ecology and the PLP agree to propose the baseline (i.e., most permanent) alternative as the cleanup action, there seems to be no reason to also require that there be an agreement regarding the substantiality of the cost difference.

Recommendation: Allow the baseline alternative to be selected as the proposed cleanup action without further evaluation under the disproportionate cost analysis if both Ecology and the PLP agree.

224 (44) Subsection (3)(c)(ii) describes how the baseline alternative is identified.[139] During the course of a disproportionate cost analysis, one baseline may be discarded and another

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[136] State Register at 125.
[137] State Register at 125.
[138] PAC Report at C-48.
[139] State Register at 126.

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identified. Potentially, this could occur sequentially until all but one alternative has been discarded. This provision only describes how the initial baseline alternative is identified.

Recommendation: Insert "initial" before "baseline" both times it occurs.

225

WAC 173-340-390 MODEL REMEDIES

AUTHORITY TO ISSUE MODEL REMEDIES

(45) Subsection (2) authorizes Ecology to issue model remedies.[140] Although Ecology staff have acknowledged the value of model remedies for certain types of sites (e.g., commercial gasoline service stations), it is not clear when the resources to develop such model remedies will be made available.

Recommendation: Ecology should place a high priority on the development of one or more model remedies applicable to commercial gasoline service stations.

226

(46) Subsection (2) does not describe the administrative mechanism for issuance of model remedies, but Ecology staff have expressed a preliminary view that issuance of a model remedy may require rulemaking. This should not be necessary since, as discussed below, application of a model remedy at a given site is not mandatory. Either Ecology or the PLP may elect to go through the standard remedy selection process.

Recommendation: Clarify that model remedies may be issued as guidance documents.

227

EFFECT OF A MODEL REMEDY

(47) Subsection (3) provides that where a site meets the circumstances identified by Ecology, the components of the model remedy may be selected as the cleanup action or portion of the cleanup action.[141] This language appears to establish that even where the site qualifies for a model remedy, if either the PLP or Ecology wish nevertheless to conduct a feasibility study or disproportionate cost test rather than simply adopt the model remedy, they may do so. In other words, a model remedy is presumptively protective and presumptively permanent to the maximum extent practicable – but it is not presumptively required.

Recommendation: The language appears clear enough on its face. If there is a question of ambiguity, the language could be clarified consistent with the above comments.

228

WAC 173-340-400 CLEANUP ACTIONS

INDEPENDENT REMEDIAL ACTIONS

(48) Subsection (8) implies that for independent remedial actions, an engineering design report, construction plans and specifications, and an operation and maintenance plan must be submitted under the proposed WAC 173-340-515.[142] Presumably, the intent of this

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[140] State Register at 127.
[141] State Register at 127.
[142] State Register at 129.

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language was to specify that, for independent remedial actions, the requirements of WAC 173-340-400 are satisfied by compliance with WAC 173-340-515.

Recommendation: The language should be clarified to state that for independent remedial actions, the requirements of WAC 173-340-400 are satisfied by submittal of documents required under the proposed WAC 173-340-515.

229

WAC 173-340-410 COMPLIANCE MONITORING REQUIREMENTS

CONTENTS OF MONITORING PLAN

(49) Subsection (3) provides that where the selected cleanup action is on-site disposal, isolation or containment, long-term monitoring shall be required until residual hazardous substances no longer exceed cleanup levels.[143] This ignores the point of compliance aspect of cleanup standards.

Recommendation: Strike "no longer exceed cleanup levels" and insert "comply with cleanup standards".

230

WAC 173-340-420 PERIODIC REVIEW

(50) Subsection (3)(c) provides that in conducting a periodic review, Ecology shall consider new applicable state and federal laws for hazardous substances present at the site.[144] See Comment (83) below for a discussion of the effect of the nondelegation doctrine on applicable state and federal laws.

Recommendation: Clarify whether and how the nondelegation doctrine affects Ecology's ability to consider future applicable state and federal laws when conducting a periodic review.

231

CONTINUING PERIODIC REVIEWS

(51) Subsection (6) provides that sites with institutional controls shall remain subject to periodic reviews as long as the institutional controls are required.[145] This seems to mean that such sites remain subject to periodic reviews as long as the conditions giving rise to the institutional controls continue to exist. The property owner may choose to retain the institutional controls for reasons unrelated to MTCA; however, if the conditions giving rise under MTCA to the institutional controls no longer exist, there is no reason to require Ecology to continue conducting periodic reviews.

Recommendation: Clarify that sites with institutional controls shall remain subject to periodic reviews as long as the conditions giving rise under MTCA to the need for the institutional controls continue to exist.

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[143] State Register at 130.
[144] State Register at 130.
[145] State Register at 131.

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WAC 173-340-430 INTERIM ACTIONS

INDEPENDENT REMEDIAL ACTIONS

(52) Subsection (7) implies that for independent remedial actions, an advance report on an interim action must be submitted under the proposed WAC 173-340-515.[146] Presumably, the intent of this language was to specify that, for independent remedial actions, the information requirements of WAC 173-340-430 are satisfied by compliance with WAC 173-340-515.

Recommendation: The language should be clarified to state that for independent remedial actions, the information requirements of WAC 173-340-430 are satisfied by submittal of documents required under the proposed WAC 173-340-515.

233

WAC 173-340-440 INSTITUTIONAL CONTROLS

PRIMARY RELIANCE ON INSTITUTIONAL CONTROLS

(53) Subsection (5) prohibits cleanup actions from relying primarily on institutional controls and monitoring where it is technically possible to implement an alternative that utilizes a more permanent cleanup action for all or a portion of the site.[147] See the discussion of this issue under Comment (22) above.

Recommendation: Strike this provision.

234

RESTRICTIVE COVENANTS

(54) Subsection (9)(c) requires notice be given to Ecology of the owner's intent to convey any interest in a site for which a restrictive covenant has been required.[148] It is not clear whether this requirement is satisfied by a single notice that the owner intends to convey an interest, which notice might precede the owner finding a party who intends to receive the conveyance, or, alternatively, whether the owner must notify Ecology of specific conveyances each and every time they occur. For example, would the owner of a warehouse satisfy this requirement by notifying Ecology that it intends to lease space in the warehouse to other parties, or would the warehouse owner need to notify Ecology about each lease as it is made? The latter requirement would seem to be unnecessarily burdensome, particularly in light of the proposed new requirement under subsection (9)(e) that conveyances include notice of the restrictive covenant.[149]

Recommendation: Clarify that where an owner periodically conveys an interest in a site (e.g., through lease) or conveys interests in multiple portions of the site (e.g., through sales of subdivided property) this provision does not require the owner to notify Ecology of each individual conveyance, but rather is satisfied by notice that the owner intends to make such conveyances.

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[146] State Register at 131.
[147] State Register at 132.
[148] State Register at 133.
[149] State Register at 133.

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WAC 173-340-515 INDEPENDENT REMEDIAL ACTIONS

STANDARDS APPLICABLE TO INDEPENDENT REMEDIAL ACTIONS

(55) Section (3)(b) clarifies that requirements for Ecology consultations, approvals or determinations do not apply to independent remedial actions, but that such actions must still meet the substantive requirements of 173-340 WAC.[150] However, as discussed below, it is not always clear whether a particular requirement is substantive or procedural.

Recommendation: Clarify which requirements are substantive for purposes of an independent remedial action.

236

(56) Subsection (3)(c) clarifies that when specific documents are required in WAC 173-340-350, 173-340-360, 173-340-380, 173-340-400, 173-340-410, 173-340-430, 173-340-450, 173-340-700 through 173-340-760, and 173-340-810 through 173-340-850, a person conducting an independent remedial action need not use the same title or format, as long as sufficient information is included to serve the same purpose.[151] Are there any documents required under any section not referenced? If so, why would a person conducting an independent remedial action need to adhere to the rule's format for such documents?

Recommendation: Clarify that the referenced sections are the only ones that require the preparation of documents by a person conducting a remedial action.

237

WAC 173-340-545 PRIVATE RIGHTS OF ACTION

SUBSTANTIAL EQUIVALENCY

(57) Subsection (2)(c)(iv) provides that in order for an independent remedial action to be considered the substantial equivalent of a department-conducted or department-supervised remedial action, it must achieve substantial equivalency with technical standards and criteria identified in WAC 173-340-545(4).[152] In turn, the latter subsection provides that substantial equivalency requires that the independent remedial action be conducted substantially equivalent with the *substantive* provisions of the technical standards and criteria under WAC 173-340-130, 173-340-200, 173-340-210, 173-340-350, 173-340-360, 173-340-380, 173-340-400, 173-340-410, 173-340-430, 173-340-440, 173-340-450, 173-340-700 through 173-340-760, and 173-340-810 through 173-340-850.[153] However, as commented above with respect to the proposed WAC 173-340-515, see Comment (55) above, it is not always clear whether a particular requirement is substantive or procedural. Failure to clarify this issue is likely to lead to protracted litigation between private parties, and could be a disincentive to proceeding with an independent remedial action.

Recommendation: Provide better clarity as to what is a substantive requirement and what is procedural.

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[150] State Register at 136.
[151] State Register at 136.
[152] State Register at 140.
[153] State Register at 141.

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238 (58) Subsection (4) implicitly requires that deed restrictions, unlike any other document discussed under MTCA, must use the same title and format as provided under WAC 173-340-440.[154] There is no justification for requiring that deed restrictions use the same title and format as provided under that section. It should be enough that sufficient information is included in the deed restriction to serve the same purpose as WAC 173-340-440.

Recommendation: Strike "Except for a restrictive covenant under WAC 173-340-440,".

239 (59) Among the provisions cited under subsection (4) is WAC 173-340-380.[155] What standards or criteria does Ecology find in WAC 173-340-380 that are not either purely procedural or more specifically described elsewhere?

Recommendation: Clarify or strike this reference.

240 ## WAC 173-340-700 OVERVIEW OF CLEANUP STANDARDS

METHOD A CLEANUP LEVELS

(60) Subsection (5)(a) requires that sites with contaminated soil must use the terrestrial ecological evaluation process to establish a Method A soil cleanup level that is protective of plants and animals, unless the site qualifies for an exclusion from a simplified or site-specific ecological evaluation.[156] This provision illustrates a conceptual difficulty that Ecology displays repeatedly with respect to the terrestrial ecological evaluation process. The terrestrial ecological evaluation process is an analytical process, and is not particularly oriented toward the development of numerical cleanup levels. Although it provides soil concentrations that may be used as cleanup levels, this is at the discretion of the PLP.[157] Even if a PLP is required to conduct a site-specific ecological evaluation, this will not necessarily lead to the development of a numerical cleanup level. Rather, it is merely necessary that the process provide the PLP with sufficient information to make the determinations under WAC 173-340-7493(1)(b) (i.e., that the site poses no threat or potential threat of significant adverse effects to ecological receptors; or to facilitate remedy selection).[158]

Recommendation: Strike the last sentence of the first paragraph of subsection (5)(a), and insert the following: "For soil contamination, the process described in WAC 173-340-7090 through 173-340-7094 shall be used to evaluate the threat or potential threat to terrestrial ecological receptors."

241 (61) Subsection (5)(a) provides that site cleanups that achieve Method A cleanup levels can be used without future restrictions on the property due to residual levels of contamination unless institutional controls are required by WAC 173-340-440(4).[159] It appears that this

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[154] State Register at 141.

[155] State Register at 141.

[156] State Register at 149.

[157] WAC 173-340-7492(1)(d) and -7493(3). State Register at 198-99.

[158] WAC 173-340-7493(3). State Register at 199.

[159] State Register at 149.

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is a reference to institutional controls that might be required as part of the ecological evaluation process. If so, that should be stated more clearly in order to avoid the potential inference that WAC 173-340-440 might authorize institutional controls for such sites for any other reason.

Recommendation: Modify the cross-reference to read "WAC 173-340-440(e)".

242

METHOD B CLEANUP LEVELS

(62) Subsection (5)(b) refers to Method B as the "universal" method for determining cleanup levels, discarding the current nomenclature of "standard" method.[160] This is misleading. "Universal" implies, erroneously, that Method B is always used.

Recommendation: Retain the current nomenclature (i.e., "standard method").

243

(63) Subsection (5)(b) states that modified Method B formulas may be used to establish cleanup levels, but that other modifications to such formulas may be used to establish remediation levels.[161] The implication is that a quantitative risk assessment being used for purposes of establishing a remediation level has more flexibility than simply changing the input parameters described in WAC 173-340-720 through 173-340-760. This implication is supported by the following specific provisions: WAC 173-340-720 (4)(d) and (5)(d) (ground water),[162] 173-340-730(3)(d) (surface water),[163] 173-340-740(3)(c)(v) (soil),[164] 173-340-745(5)(c)(iii) (industrial soil),[165] and 173-340-750(3)(d) (air).[166] It is important that this be clearly stated.

Recommendation: Clarify that a quantitative risk assessment for a remediation level may be based on modified input parameter described in WAC 173-340-720 through 173-340-760, or other modifications that meet the appropriate standards of WAC 173-340-702 and 173-340-708.

244

(64) Subsection (5)(b) requires that sites with contaminated soil must use the terrestrial ecological evaluation process to establish a Method B soil cleanup level that is protective of plants and animals, unless the site qualifies for an exclusion from a simplified or site-specific ecological evaluation.[167] See the discussion of this issue under Comment (60) above.

Recommendation: Strike the sixth paragraph of subsection (5)(b), and insert the following: "For soil contamination, the process described in WAC 173-340-7090 through 173-340-7094 shall be used to evaluate the threat or potential threat to terrestrial ecological receptors."

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[160] State Register at 149.
[161] State Register at 149.
[162] State Register at 167-68.
[163] State Register at 175.
[164] State Register at 182.
[165] State Register at 189.
[166] State Register at 203.
[167] State Register at 149-50.

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245 (65) Subsection (5)(a) provides that site cleanups that achieve Method A cleanup levels can be used without future restrictions on the property due to residual levels of contamination unless institutional controls are required by WAC 173-340-440(4).[168] See the discussion of this issue under Comment (61) above.

Recommendation: Modify the cross-reference to read "WAC 173-340-440(e)".

246 **METHOD C CLEANUP LEVELS**

(66) Subsection (5)(c) states that modified Method C formulas may be used to establish cleanup levels, but that other modifications to such formulas may be used to establish remediation levels.[169] See the discussion of this issue under Comment (63) above.

Recommendation: Clarify that a quantitative risk assessment for a remediation level may be based on modified input parameter described in WAC 173-340-720 through 173-340-760, or other modifications that meet the appropriate standards of WAC 173-340-702 and 173-340-708.

247 (67) Subsection (5)(c) requires that sites with contaminated soil must use the terrestrial ecological evaluation process to establish a Method C soil cleanup level that is protective of plants and animals, unless the site qualifies for an exclusion from a simplified or site-specific ecological evaluation.[170] See the discussion of this issue under Comment (60) above.

Recommendation: Strike the fifth paragraph of subsection (5)(c), and insert the following: "For soil contamination, the process described in WAC 173-340-7090 through 173-340-7094 shall be used to evaluate the threat or potential threat to terrestrial ecological receptors."

248 **SETTING CLEANUP LEVELS AT PETROLEUM CONTAMINATED SITES**

(68) Subsection (8) provides an overview of how petroleum releases are addressed under MTCA.[171] In 1997, Ecology adopted the Interim TPH Policy.[172] Substantively, this policy resulted in modest incremental changes in petroleum cleanups. However, it represented a dramatic shift in thinking for Ecology. For the first time, Ecology applied risk-based principles to the cleanup of petroleum-contaminated soils.. Subsection (8) and other provisions give the appearance that the proposed rule builds on the innovations of the Interim TPH Policy. Cleanup levels that protect human health are based on a more sophisticated fractionation of petroleum products. Additional tools are added for evaluating the soil to ground water pathway. Conceptual site models are used to identify other exposure pathways that should be considered at sites.

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[168] State Register at 149.

[169] State Register at 150.

[170] State Register at 150.

[171] State Register at 151-52.

[172] Ecology, Interim Interpretive and Policy Statement, Cleanup of Total Petroleum Hydrocarbons (TPH) (Pub. 97-600, Jan. 1997).

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Unfortunately, in this case, appearances are deceiving. When considered as a whole, the proposed rule does not build on the improvements in the Interim TPH Policy. Instead, for most people, it takes them away – albeit through the back door. This can be illustrated as follows:

Before the Interim TPH Policy, Method A was the exclusively means for establishing petroleum cleanup levels at most sites. This meant that, for a release of gasoline to soil, the cleanup levels would be as follows:

	TPH-Gasoline	Benzene	Ethylbenzene	Toluene	Xylenes
Cleanup Level (mg/kg)	100	0.5	20	40	20

Table 1. Current Method A Soil Cleanup Levels for Gasoline

The Interim TPH Policy allows PLPs to develop Method B and Method C soil cleanup levels that are more appropriate for a specific site. Method B and Method C cleanup levels often are higher than the Method A levels. However, under the proposed rule, it will be more difficult to establish these site-specific cleanup levels. Typically, Method B and Method C cleanup levels will be the same as the Method A cleanup levels, because these are based on the proposed rule's default soil to ground water equilibrium partitioning equations. These result in the following cleanup levels applicable to gasoline:

	TPH-Gasoline	Benzene	Ethylbenzene	Toluene	Xylenes
Cleanup Level (mg/kg)	30	0.1	6	7	9

Table 2. Proposed Method A Soil Cleanup Levels for Gasoline

In other words, soil cleanup levels for gasoline spills will go down to less than half their pre-Interim TPH Policy levels. Although the partitioning equations are not the exclusive methods for calculating petroleum soil cleanup levels that protect ground water, the alternatives (fate and transport models or empirical demonstrations) both require that the PLP demonstrate compliance with the "new science" criteria.[173] Furthermore, as discussed under Comment (33) above, use of any of the "modified" soil-to-ground water methods appears to trigger mandatory institutional controls.[174]

It is possible to use site-specific data in applying the equilibrium partitioning equations. The key parameter that may be varied is the fraction of organic content (f_{oc}).[175] In Washington State, this has been estimated to range from 0.01 – 5.0 percent.[176] The

[173] Proposed WAC 173-340-747(4)(c)(ii) and -747(4)(d)(ii). State Register at 195.

[174] Proposed WAC 173-340-350(12)(e) (apparently providing that "modified" soil to ground water methods may be used to establish remediation levels but not cleanup levels). State Register at 121.

[175] The other variable parameters are not particularly significant. If the fraction of organic content is not changed, BTEX cleanup levels based on site-specific information potentially double. That does not even return them to current levels.

[176] Foster Wheeler Environmental Corporation, Technical Memorandum re Allowable Parameter Ranges (Aug. 4, 1997) at table 8.

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Method A values for BTEX are based on a default f_{oc} of 0.1 percent; at the high end, the values potentially increase by approximately 1.5 orders of magnitude. Unfortunately, because of the high variability in f_{oc} data, it may be that Ecology will require numerous samples to be taken and correlated before accepting site-specific data. In any event, use of site-specific data in an equilibrium partitioning equation is a "modified" soil to ground water method; therefore, as noted above,[177] that may trigger mandatory institutional controls.

Thus, the existence of Method B or Method C as alternative methods for establishing cleanup levels will be, for many PLPs, an illusion at best.

Recommendation: Revise the proposed rule to ensure that petroleum cleanups are conducted in accordance with the principles of risk-based corrective action.

249 (69) Subsection (8)(b)(ii)(B) provides that current and future site uses may be considered in establishing Tier 2 or Tier 3 remediation levels.[178] The implication is that current and future site uses may not be considered in establishing Tier 2 or Tier 3 cleanup levels. This is contrary to the first sentence of each of the following specific cleanup standard provisions: WAC 173-340-720(1)(a) (ground water),[179] 173-340-730(1)(a) (surface water),[180] 173-340-740(1)(a) (soil),[181] and 173-340-750(1)(b) (air).[182]

Recommendation: Revise the last sentence under subsections (8)(b)(ii)(B)(II) and (8)(b)(ii)(B)(III) to read: "Consideration of current and future site uses may be considered in establishing cleanup levels and remediation levels."

250 **WAC 173-340-702 GENERAL POLICIES**

ESTIMATES OF RISK

(70) Subsection (3) requires that cleanup *actions* provide conservative estimates of risk to human health and the environment,[183] whereas the current rule only applies this requirement to cleanup *standards*.[184] This appears to undercut the role of remediation levels, which are intended to be based on *realistic* estimates of risk.

Recommendation: Strike the reference to cleanup *actions*.

251 **APPLICABLE REQUIREMENTS UNDER CERCLA**

(71) Subsection (10) expands the list of requirements that Ecology considers to be applicable to CERCLA cleanup actions. Currently, the regulation states that applicable require-

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[177] See note 174.
[178] State Register at 152.
[179] State Register at 163.
[180] State Register at 173.
[181] State Register at 177.
[182] State Register at 201.
[183] State Register at 152.
[184] State Register at 151.

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ments include those relating to remedy selection (WAC 173-340-360 – provisions of which are recodified as WAC 173-340-350 through 173-340-380 in the proposed rule) and cleanup standards (WAC 173-340-700 through 173-340-760). Subsection (10) expands this to include provisions relating to model remedies (WAC 173-340-390), periodic review (WAC 173-340-420), institutional controls (WAC 173-340-440), underground storage tanks (WAC 173-340-450) and analytical procedures (WAC 173-340-830).[185]

By listing model remedies as an applicable requirement, is Ecology implying that it could be *required* as part of a CERCLA cleanup? That would not be appropriate, since a model remedy is intended to be a tool that *may* be used at appropriate sites, but is not required to be used. As stated in the proposed WAC 173-340-390(3): "Where a site meets the circumstances identified by the department under subsection (2) of this section, the components of the model remedy *may* be selected as the cleanup action, or portion of the cleanup action."[186]

Recommendation: Clarify that this provision does not imply that model remedies may be required as part of a CERCLA cleanup; but, rather, that use of a model remedy, at an appropriate CERCLA site, meets applicable state requirements for the relevant hazardous substance(s) and pathway(s).

252

BURDEN OF PROOF

(72) Subsection (14) extends the burden of proof requirements to persons proposing the use of alternate RME scenarios and the use of site-specific exposure parameter values.[187] These changes were not part of the PAC recommendation.

Recommendation: Strike the new language extending these requirements beyond the PAC recommendation.

253

NEW SCIENTIFIC INFORMATION

(73) Subsection (15) requires that when establishing cleanup levels and remediation levels *for individual sites*, Ecology shall consider new scientific information that meets certain quality of information standards. In doing so, Ecology is required, as appropriate, to consult with the SAB, Department of Health and the EPA.[188] The reference to individual sites could be read to imply that a PLP who desires to use new scientific information at a site other than the one at which it was first reviewed would have to go through the same review processes.

Recommendation: Clarify that new scientific information, once approved for use, may be used at subsequent sites where it is appropriate, without the need to go through the same review processes. This might be done by clarifying that the meaning of the word "new" does not include scientific information that has previously been approved for use in establishing a cleanup level or remediation level.

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[185] State Register at 153.

[186] State Register at 127 (emphasis added).

[187] State Register at 153.

[188] State Register at 153.

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QUALITY OF INFORMATION CRITERIA

(74) Subsection (16)(a) identifies certain criteria to be used when evaluating proposed modifications to methods or factors specified in MTCA, "or proposing methods or factors not specified in this chapter for calculating cleanup levels and remediation levels."[189] This language was specifically recommended by the PAC.[190] It appears to allow a PLP to propose methods or factors for site-specific risk assessment beyond those addressed in WAC 173-340-720 through 173-340-760.

Recommendation: Clarify that this provision allows a PLP to propose methods or factors for site-specific risk assessment beyond those addressed in WAC 173-340-720 through 173-340-760.

255

WAC 173-340-705 USE OF METHOD B

PQL/NATURAL BACKGROUND

(75) Subsection (6) states that cleanup levels "are not required to be set at levels below the practical quantitation limit or natural background."[191] This could be read to imply that Ecology may, but is not required to, set cleanup levels below the PQL or natural background, which would be inconsistent with the proposed WAC 173-340-700(6)(d), which states that "the cleanup level *shall* be established at a concentration equal to the practical quantitation limit or natural background concentration."[192]

Recommendation: In subsection (6), strike "are not required to" and insert "shall not".

256

WAC 173-340-706 USE OF METHOD C

LIMITATION ON USE OF METHOD C FOR SOIL CLEANUP LEVELS

(76) Subsection (1)(c) does not allow the use of Method C to establish soil cleanup levels other than at facilities qualifying for an industrial soil cleanup level under WAC 173-340-745.[193] Ecology believes that this is consistent with a PAC recommendation, based on a memo prepared by Ecology staff.[194] That memo proposed restructuring MTCA to allow for two types of land use: unrestricted and industrial. All sites not qualifying as industrial property under WAC 173-340-745 would be subject to the unrestricted land use scenario, and would establish cleanup levels using either Method A or Method B. Industrial properties would establish cleanup levels using Method A or Method C. However, reliance on the memo is not justified. As a footnote to the memo explains, those portions of the

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[189] State Register at 153-54.
[190] PAC Report at C-4.
[191] State Register at 154.
[192] State Register at 150 (emphasis added).
[193] State Register at 155.
[194] PAC Report at C-12 – C-15.

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memo that represent the PAC's recommendation have been incorporated into that recommendation.[195]

In reviewing the actual PAC recommendation, it is clear that the PAC intended to eliminate the default commercial/industrial exposure scenario under the current WAC 173-340-740(1)(c).[196] However, the PAC did not recommend eliminating the ability for non-industrial sites to establish a Method C cleanup level under the current WAC 173-340-740(4). The latter provision does not relate the site's land use, which was the subject of the PAC discussion and recommendation, but rather it authorizes the use of Method C cleanup levels where the site meets one or more of the conditions under WAC 173-340-706(1)(a) – that is, Method A or B cleanup levels are below area background concentrations, attainment of Method A or B cleanup levels has the potential for creating a significantly greater overall threat to human health or the environment than attainment of Method C cleanup levels, or it is not technically possible to achieve Method A or B cleanup levels.

Recommendation: Retain the provisions of the current regulation that allow use of Method C to establish soil cleanup levels at non-industrial sites where one of the three conditions under WAC 173-340-706(1)(a) exist.

257

PQL/NATURAL BACKGROUND

(77) Subsection (6) states that cleanup levels "are not required to be set at levels below the practical quantitation limit or natural background."[197] See the discussion of this issue under Comment (75) above.

Recommendation: In subsection (6), strike "are not required to" and insert "shall not".

258

WAC 173-340-708 HUMAN HEALTH RISK ASSESSMENT PROCEDURES

USE OF RISK ASSESSMENT TO ESTABLISH REMEDIATION LEVELS

(78) Subsection (1) provides that the risk assessment framework in WAC 173-340-708 shall be used to establish remediation levels under MTCA, that certain default values and methods are to be used in calculating remediation levels, and that there may be a variance from such default values and methods under certain circumstances.[198] This could be construed to mean that, by default, remediation levels shall be established using the risk assessment procedures under WAC 173-340-708 unless Ecology agrees to a variance. That construction would be inconsistent with the proposed WAC 173-340-350(11)(b)(i), which provides that remediation levels may be established using quantitative or qualitative methods.[199] A quantitative risk assessment is one, but only one, of a variety of methods that may be used to establish a remediation level, and it should be

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[195] PAC Report at C-12.

[196] PAC Report at 26 (Recommendation 1).

[197] State Register at 156.

[198] State Register at 156.

[199] State Register at 121.

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clear that there is no presumption that a quantitative risk assessment will be used. This may be the intention behind the statement in subsection (1) that "[a]s used in this section, ... remediation levels means the human health risk assessment component of these levels."

Recommendation: Clarify that a remediation level may be established using the quantitative risk assessment procedures under WAC 173-340-708, but that there is no presumption in favor of quantitative risk assessment nor is quantitative risk assessment the default method for establishing remediation levels.

259

REASONABLE MAXIMUM EXPOSURE SCENARIO

(79) Subsection (3)(c) states that the evaluation criteria in WAC 173-340-720 through 173-340-760 may be used to demonstrate that the reasonable maximum exposure (RME) scenario specified in those sections are not appropriate at a particular site.[200] It is not clear what constitutes "evaluation criteria" under those sections, nor how such criteria would be used to make this demonstration.

Recommendation: Clarify which provisions in WAC 173-340-720 through 173-340-760 are used, and how they are used, to make this demonstration.

260

(80) Subsection (3)(d) prohibits basing an alternative RME scenario on land uses other than residential or industrial to establish a cleanup level.[201] Unlike most of the amendments to WAC 173-340-708, this proposal was *not* included in the PAC recommendations. In fact, it is inconsistent with the PAC recommendation that the *default* commercial exposure scenario be eliminated, but that commercial sites be allowed to establish *cleanup levels* using a site-specific risk assessment including the use of alternate exposure scenarios. The PAC even stated that it expects many types of commercial sites to qualify for alternative exposure scenarios.[202]

Recommendation: Strike the third sentence of this provision.

261

PQL/NATURAL BACKGROUND

(81) Subsections (5)(f) and (6)(e) provide that when making adjustments to cleanup levels and remediation levels, the concentration *should not* be adjusted to less than the PQL or natural background levels.[203] See the discussion of this issue under Comment (75) above.

Recommendation: In subsections (5)(f) and (6)(e), strike "should" and insert "shall".

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[200] State Register at 157.
[201] State Register at 157.
[202] PAC Report at 26.
[203] State Register at 158.

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REFERENCE DOSES AND CANCER POTENCY FACTORS

(82) Subsection (7)(d) requires that reference doses be based on IRIS, HEAST or NCEA data, if available.[204] These data bases are constantly evolving. Subsection (8)(a) includes a similar requirement for cancer potency factors.[205] See the discussion under Comment (8) above regarding the effect of the nondelegation doctrine.

Recommendation: Clarify whether and how the nondelegation doctrine affects Ecology's ability to consider future additions or modifications to these data bases.

263

WAC 173-340-710 APPLICABLE STATE AND FEDERAL LAWS

NONDELEGATION DOCTRINE

(83) As discussed under Comment (8) above, the nondelegation doctrine appears to preclude Ecology from incorporating into the rule future statutes, regulations, standards, or guidance (including amendments to current statutes, regulations or guidance) – whether federal, state, local or private. Perhaps the most significant part of the rule that may be affected by the doctrine is the use of so-called "relevant and appropriate" state and federal requirements to establish cleanup standards. MTCA directs Ecology to adopt cleanup standards that are "at least as stringent as the cleanup standards under section 121" of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and "at least as stringent as all applicable state and federal laws, including health-based standards under state and federal law".[206] Under the current rule, Ecology construes applicable state and federal laws to include "those requirements that the department determines ... are relevant and appropriate requirements."[207]

Several relevant and appropriate requirements are specifically incorporated by various provisions of the regulations. For example, maximum contaminant levels (MCLs) adopted by EPA and the State Board of Health are not of themselves legally applicable to cleanup actions, but Ecology has determined that they are relevant and appropriate when establishing ground water cleanup levels.[208] Under the nondelegation doctrine, it appears that Ecology may incorporate *existing* MCLs (and other "relevant and appropriate requirements") that have been promulgated by state and federal agencies prior to adoption of the revisions to the MTCA rule. However, it is difficult to square the nondelegation doctrine with the use of *future* MCLs.

At first blush, it may appear that legally applicable state and federal requirements suffer from the same problem. However, there is an important distinction. Legally applicable requirements are standards, criteria or limitations "that specifically address a hazardous substance, cleanup action, location, or other circumstances at the site."[209] In other

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[204] State Register at 158.
[205] State Register at 159.
[206] RCW 70.105D.030(2)(e).
[207] WAC 173-340-710(1).
[208] WAC 173-340-720(2)(a)(ii).
[209] WAC 173-340-200.

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words, they apply to a cleanup action by their own terms and are not dependent upon the MTCA regulation for such application. To the extent that amendments and modifications to legally applicable requirements continue, of themselves, to apply to a cleanup action, their application depends on their own terms – not on the adoption of future standards under MTCA.

Recommendation: Clarify whether and how the nondelegation doctrine affects the ability of Ecology to rely upon future local, state and federal laws in determining what laws are legally applicable requirements or are relevant and appropriate requirements.

264

WAC 173-340-720 GROUND WATER CLEANUP STANDARDS

CROSS-MEDIA CONTAMINATION

(84) Subsection (1)(c) states that releases to ground water shall not cause violations of standards applicable to surface water, sediments, soil or air.[210] This is identical to the current WAC 173-340-720(1)(e).[211] The reference to releases is confusing. The release has already occurred, or may still be occurring if it has not yet been controlled – and it either is or is not violating applicable environmental standards. The intent of this provision appears to be not to focus on releases, but rather on cleanup levels. Note that the comparable provisions under the proposed WAC 173-340-740(1)(d) (soil),[212] 173-340-745(2)(c) (industrial soil),[213] and 173-340-750(1)(d) (air),[214] state that cleanup levels shall be established at concentrations that do not cause violations of standards for other environmental media.

Recommendation: Strike "Releases of hazardous substances to ground waters of the state shall not" and in lieu thereof insert "Ground water cleanup levels shall be established at concentrations that do not".

265

METHOD A CLEANUP LEVELS

(85) Table 720-1 bases the Method A cleanup level for MTBE on EPA's Drinking Water Advisory,[215] which is itself based on aesthetic considerations (taste and odor).[216] The purpose of MTCA is to protect human health and the environment, not to protect aesthetic considerations. The Advisory indicates that this level provides "a large margin of exposure (safety) from toxic effects."[217]

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[210] State Register at 163-64.

[211] State Register at 164.

[212] State Register at 178.

[213] State Register at 186.

[214] State Register at 201.

[215] State Register at 216 (fn. p).

[216] EPA, Drinking Water Advisory: Consumer Acceptability Advice and Health Effects Analysis on Methyl Tertiary-Butyl Ether (MtBE) (EPA-822-F-97-009, Dec. 1997) (MTBE Advisory) at 2.

[217] MTBE Advisory at 2.

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Recommendation: The Method A cleanup level for MTBE should be based on the protection of human health.

266 (86) Table 720-1 states that the Method A cleanup level for xylene is based on "not exceeding the cleanup level for total petroleum hydrocarbons."[218] The implication is that a cleanup action that adequately addresses TPH will necessarily adequately address xylenes. Therefore, there appears no need to sample or monitor for xylenes as such.

Recommendation: In Table 830-1, clarify that there is no requirement to test for xylenes in ground water.

267 **CLEANUP LEVELS FOR GROUND WATER THAT IS A CURRENT OR FUTURE DRINKING WATER SOURCE**

(87) Subsections (4)(b)(iii) and (5)(b)(iii) require that the cleanup level not exceed a concentration that would result in NAPL being present in or on the ground water. Physical observations or the solubility limit may be used to determine compliance with this requirement.[219]

Recommendation: It should be clarified that the concentration is acceptable where physical observations do not detect the presence of a measurable layer of product.

268 (88) Subsection (1)(d)(v) authorizes Ecology to impose more a stringent cleanup level when, based on a site-specific evaluation, it determines that the more stringent cleanup level is necessary to protect nearby surface waters.[220] This provision does not include the language in the current WAC 173-340-720(3)(b)(v), which states that such cleanup levels generally "will be based on attaining surface water cleanup levels in the surface water as close as technically possible to the point or points where the ground water flows into the surface water."[221] There is no justification for striking the current language. In these situations, the cleanup level will be more stringent than drinking water standards; therefore, any use of the water prior to its discharge to surface water will be sufficiently protected. If a lower cleanup level is needed to protect surface water, the surface water will be protected by ensuring attainment of surface water standards at the point of discharge.

Recommendation: Retain the current language.

269 **CLEANUP LEVELS FOR GROUND WATER FLOWING INTO NEARBY SURFACE WATER**

(89) Subsection (6)(a) requires that the cleanup level for ground water that flows into surface water which is classified as a source of drinking water under 173-201A WAC (except marine waters) shall be based on the same methods as those described above for drinking water sources.[222] However, 173-201A WAC does not classify water as a source of drinking water. It does identify "domestic water supply" as a characteristic use of Class AA, Class A and Lake Class waters.

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[218] State Register at 216 (fn. bb).
[219] State Register at 167.
[220] State Register at 164.
[221] State Register at 166.
[222] State Register at 168.

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Recommendation: Track the language in 173-201A WAC. Make the same change in other appropriate places (e.g., subsection (6)(b)).

270

(90) Subsection (6)(b)(ii) authorizes the use of surface water cleanup levels as the ground water cleanup levels for ground water that flows into nearby surface water that is not classified as a source of drinking water but the *ground water* is classified as a current or potential future source of drinking water if Ecology determines that there is an extremely low probability that the ground water will ever be used for drinking water because the affected ground water is sufficiently hydraulically connected to the surface water that the ground water is not practicable to use as a drinking water source (for reasons other than that the ground water has been contaminated by a release of a hazardous substance).[223] Six conditions must be met, including the following:

- Ground water flows into the surface water will not result in exceedances of surface water or sediment cleanup levels at the point(s) of entry or at any downstream location where hazardous substances may accumulate.[224] This is similar to language found in the current WAC 173-340-720(1)(c)(iii). However, it is not clear what purpose is served by this language in the proposed rule. The current rule states that the cleanup level is to be *based on* protection of surface water; this provision, then, appears to clarify that a cleanup level is based on protection of surface water if it is sufficiently stringent to ensure that the surface water standards are met in the surface water. The proposed rule, on the other hand, states that the ground water cleanup level shall be the surface water standard – i.e., it is not to be based on the surface water standard, it is to be identical to the surface water standard. If the ground water cleanup level is identical to surface water standard, then it is obvious that the cleanup level will not result in exceedances of surface water standards at the point of entry.

  Recommendation: Clarify the purpose and effect of this provision in light of the fact that ground water cleanup levels under this subsection are identical to surface water cleanup levels.

- In addition to any notice provided under WAC 173-340-600, notice of the proposal, and an opportunity to comment, must be provided to "all *potentially affected* property owners, and local governments and water purveyors with jurisdiction in the area *potentially affected* by the ground water contamination".[225] The notice shall specifically ask for information on existing and planned uses of the ground water. This is a new requirement. There is no apparent reason why the notice provisions under WAC 173-340-600 are inadequate with respect to this matter. Has Ecology experienced any problems with the notice requirements under the current provision? This special notice provision seems unnecessary. In addition, it is not clear who is required to receive this special notice. The provision refers to property owners, local governments and water purveyors with jurisdiction in the area who are potentially affected by the proposal. How are property owners, local governments or water purveyors poten-

[223] State Register at 168.
[224] State Register at 168.
[225] State Register at 169 (emphasis added).

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tially affected by a contaminant that is located in ground water if it is not practicable for them to use that ground water for reasons wholly unrelated to the contamination?

Recommendation: Strike subsection (6)(b)(vii).

271

CLEANUP LEVELS FOR NON-POTABLE GROUND WATER

(91) Subsection (7)(a) defines "non-potable ground water".[226] See the discussion of this issue under Comment (2) above.

Recommendation: Eliminate the use of the term "non-potable." Instead, the reference should be to ground water that, based on the criteria under the proposed WAC 173-340-720(2), is not a current or potential future source of drinking water.

272

(92) Subsection (7)(b)(iii)(E) requires that where a site-specific risk assessment is used to establish a cleanup level for non-potable ground water, it shall be demonstrated that the proposed cleanup level will not adversely impact public or private site development or utility construction and maintenance activities.[227] The purpose, effect or authority for this provision is not at all clear.

Recommendation: Strike this provision.

273

PQL/NATURAL BACKGROUND

(93) Subsection (8)(c) provides that cleanup levels *are not required to* be adjusted to less than the PQL or natural background levels.[228] See the discussion of this issue under Comment (75) above.

Recommendation: In subsection (8)(c), strike "are not required to" and insert "shall not".

274

POINTS OF COMPLIANCE

(94) Subsection (9)(c) modifies the language regarding circumstances under which a conditional point of compliance for ground water may be adopted.[229] It is not clear whether this modified language is intended to be a substantive or procedural change from the current regulation, or whether it is merely intended to clarify the current language without effecting any substantive or procedural change.

Currently, a conditional point of compliance may be adopted where hazardous substances remain on site as part of the cleanup action. Ecology proposes to strike this language, and to replace it with a requirement that it be demonstrated under WAC 173-340-350 through 173-340-390 that it is not practicable to meet the cleanup level throughout the site within a reasonable restoration timeframe. Would a PLP meet this demonstration requirement simply by virtue of going through the remedy selection process? In other words, if an alternative in the FS that includes a conditional point of compliance is selected as the cleanup action under WAC 173-340-360, is the demonstration requirement

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[226] State Register at 169.
[227] State Register at 169.
[228] State Register at 170.
[229] State Register at 170.

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under subsection (9)(c) met? Selection of the alternative requires that it be determined to be permanent to the maximum extent practicable under the proposed WAC 173-340-360(3) and that it provide for a reasonable restoration time frame under the proposed WAC 173-340-350(13)(d); therefore, it would appear that nothing else need be established to justify adoption of a conditional point of compliance. On the other hand, if this is the case, it is not clear why Ecology does not find the current language satisfactory.

Recommendation: Retain the original language and strike the proposed new language.

275 (95) Subsection (9)(e)(ii) requires that where upland monitoring wells are used to establish compliance, Ecology should consider an estimate of natural attenuation between the well and the surface water benthic zone in evaluating whether compliance has been achieved.[230] The PAC recommended that the estimate should apply to the dilution that occurs between the well and the point of discharge to the surface water.[231]

Recommendation: Change "surface water benthic zone" to "point of discharge to surface water".

276 ## WAC 173-340-730 SURFACE WATER CLEANUP STANDARDS

CROSS-MEDIA CONTAMINATION

(96) Subsection (1)(d) states that *releases* to surface water shall not cause violations of standards applicable to ground water, soil, sediment or air.[232] This is identical to the current WAC 173-340-730(1)(c). See the discussion of this issue under Comment (84) above.

Recommendation: Strike "Releases of hazardous substances to surface waters of the state shall not" and in lieu thereof insert "Surface water cleanup levels shall be established at concentrations that do not".

277 ### WATER QUALITY CRITERIA

(97) Subsections (3)(b)(i)(B) identifies Federal water quality criteria based on protection of aquatic organisms and human health as applicable federal laws.[233] Other than the national toxics rule,[234] these Federal water quality criteria are not binding criteria. Therefore, presumably Ecology considers them to be relevant and appropriate requirements under the proposed WAC 173-340-710(4). As discussed under Comment (83) above, the nondelegation doctrine appears to preclude Ecology from incorporating into the rule additions or modifications to these criteria.

Recommendation: Clarify whether and how the nondelegation doctrine affects the ability of Ecology to rely upon future additions or modifications to the federal water quality criteria.

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[230] State Register at 171.
[231] PAC Report at 34.
[232] State Register at 173.
[233] State Register at 174.
[234] 40 CFR 131.36.

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METHOD B CLEANUP LEVELS FOR CARCINOGENIC EFFECTS

(98) Subsection (3)(b)(iii)(B) currently requires cleanup levels to address carcinogenic effects if the surface water supports fish or shellfish populations. Ecology proposes to amend this to include those surface water which have the potential to support fish or shellfish populations (which conforms to the current language for Method C cleanup levels).[235] Is this potential determined by the characteristic use classifications under 173-201A WAC? If so, won't that mean that all surface waters will be covered by this provision, since all water classes identify fish or fish and shellfish as a characteristic use?

Recommendation: Clarify the scope of surface waters covered by the amended subsection (3)(b)(iii)(B).

279

NONAQUEOUS PHASE LIQUID

(99) Subsections (3)(b)(v) and (4)(b)(v) require that the cleanup level not exceed a concentration that would result in NAPL being present in or on the surface water. Physical observations or the solubility limit may be used to determine compliance with this requirement.[236] See the discussion of this issue under Comment (87) above.

Recommendation: It should be clarified that the concentration is acceptable where physical observations do not detect the presence of a measurable layer of product.

280

PQL/NATURAL BACKGROUND

(100) Subsection (5)(c) provides that cleanup levels *are not required to* be adjusted to less than the PQL or natural background levels.[237] See the discussion of this issue under Comment (75) above.

Recommendation: In subsection (5)(c), strike "are not required to" and insert "shall not".

281

WAC 173-340-740 UNRESTRICTED LAND USE SOIL CLEANUP STANDARDS

METHOD B CLEANUP LEVELS

(101) Subsection (3)(c)(iv) requires that whenever modifications to the standard Method B equations or default values result in significantly higher values for cleanup levels or remediation levels, the conceptual site model shall be expanded to "consider" the soil to air pathways. It is not clear what *consideration* of these pathways means.[238] Does this require the PLP to specifically determined whether such pathways are complete or potentially complete, or does it require inclusion of the pathways in the conceptual site model even if they are neither complete nor potentially complete? Obviously, the latter would be unnecessary, and should not be required.

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[235] State Register at 174.
[236] State Register at 175-76.
[237] State Register at 176.
[238] State Register at 182.

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Recommendation: Clarify that whenever modifications to the standard Method B equations or default values result in significantly higher values for cleanup levels or remediation levels, it should be specifically determined whether the soil to indoor and/or ambient air pathways are complete or potentially complete. If they are, they should be included in the conceptual site model.

282

METHOD C CLEANUP LEVELS

(102) Subsection (4) prohibits the use of Method C to establish soil cleanup levels other than at facilities qualifying for an industrial soil cleanup level under WAC 173-340-745.[239] See the discussion of this issue under Comment (76) above.

Recommendation: Retain the provisions of the current regulation that allow use of Method C to establish soil cleanup levels at non-industrial sites where one of the three conditions under the proposed WAC 173-340-706(1)(a) exist.

283

PQL/NATURAL BACKGROUND

(103) Subsection (5)(c) states that cleanup levels "are not required to be set at levels below the practical quantitation limit or natural background."[240] See the discussion of this issue under Comment (75) above.

Recommendation: In subsection (5)(c), strike "are not required to" and insert "shall not".

284

WAC 173-340-745 SOIL CLEANUP STANDARDS FOR INDUSTRIAL PROPERTIES

PQL/NATURAL BACKGROUND

(104) Subsection (7)(c) states that cleanup levels "are not required to be set at levels below the practical quantitation limit or natural background."[241] See the discussion of this issue under Comment (75) above.

Recommendation: In subsection (7)(c), strike "are not required to" and insert "shall not".

285

WAC 173-340-747 DERIVING SOIL CONCENTRATIONS FOR GROUND WATER PROTECTION

STANDARD METHODS

(105) Subsection (2) distinguishes between standard and modified methods to derive a soil concentration protective of ground water. Standard methods include a fixed parameter 3-phase partitioning model and leach tests. All other methods are referred to as "modified" methods.[242] Presumably, the intent is to parallel the distinction between standard and modified cleanup levels established for the protection of human health. However, the basis for the distinction between standard and modified methods in this section is not clear.

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[239] State Register at 182.
[240] State Register at 183.
[241] State Register at 183.
[242] State Register at 191.

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It is *not* the same basis as that for human health cleanup levels, where standard cleanup levels are those that use default values for the various exposure parameters in a risk assessment equation, and modified cleanup levels are those that use site-specific data for those values. Limiting standard methods to the fixed parameter 3-phase partitioning model or leach tests is not appropriate, particularly for petroleum hydrocarbons. The 3-phase model significantly overpredicts concentrations of petroleum hydrocarbons in the ground water, and the rule does not allow leach tests to be used, as a "standard" method, for hazardous substances other than metals. Therefore, a PLP evaluating a release of petroleum hydrocarbons must use a "modified" method in order to obtain reliable results. This distinction between "standard" and "modified" methods is unnecessary, since the rule requires that PLP using alternative fate and transport models or empirical demonstrations must meet the quality of information requirements under WAC 173-340-702.

Recommendation: Eliminate the distinction between "standard" and "modified" methods in the proposed WAC 173-340-747, retaining, where appropriate, the requirement that new methods meet the requirements of WAC 173-340-702. All methods should be available to a PLP on an equal footing.

256

Fixed Parameter 3-Phase Partitioning Model

(106) Subsection (3)(a) provides that a fixed parameter 3-phase partitioning model may be used for any hazardous substance.[243] One of the equations used for this model (Equation 747-2) uses a default value for soil fraction of organic carbon content (foc) of 0.1 percent.[244] This may be more conservative than the value used in any other jurisdiction. EPA's Soil Screening Guidance uses 0.2 percent as its default value. Other jurisdictions range as high as 1.0 percent. Although this value may accurately reflect a very small proportion of sites in Washington, it surely is uncommon. If a more representative value were used as the default value, Ecology would still retain the authority to require use of the more conservative value at specific sites where the soil contains very little organic carbon.

Recommendation: As the default value for the soil fraction of organic content, substitute the value of 0.2 percent.

257

MODIFIED METHODS

Fixed or Variable Parameter 4-Phase Partitioning Model

(107) Subsection (4)(a) states that a 4-phase partitioning model may be used as part of a modified approach.[245] Presumably, this means that it may not be used as part of a standard approach. Given the fact that 3-phase models significantly overpredicts concentrations of petroleum hydrocarbons in ground water, and that leach tests may not be used as a standard method for petroleum hydrocarbons, it is inappropriate to consider the 4-phase partitioning model only a modified method.

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[243] State Register at 191-92.

[244] State Register at 191.

[245] State Register at 192.

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Recommendation: The 4-phase model should be denominated a standard method.

288 *Fate and Transport Models*

(108) Subsection (4)(c)(i) states that no particular fate and transport model is required to be used. It then identifies four parameters that may be included (natural biodegradation, dispersion, decaying source and infiltration).[246] Presumably, this is not an exclusive list, and other parameters using site-specific may be included.

Recommendation: Clarify that the four enumerated parameters are not an exclusive list of parameters for which site-specific data may be used.

289 (109) Subsection (4)(c)(ii) provides that the quality of information criteria under WAC 173-340-702 shall be used to evaluate the appropriateness of proposed model assumptions.[247] It is not clear what is meant by "proposed model assumptions". Is it limited to the values that are assigned to various parameters? Does it extend to the choice of parameters themselves? Is the choice of the particular model subject to evaluation under these criteria?

Recommendation: Clarify that the quality of information requirements shall be used to evaluate the choice and design of the fate and transport model, including the selection of parameters and the non-site-specific (i.e., assumed) values assigned to such parameters.

290 *Empirical Demonstrations*

(110) Subsection (4)(d)(ii) provides that empirical demonstrations shall be based on methods approved by Ecology.[248] It also states that the appropriateness of the empirical demonstration shall be evaluated based on the quality of information requirements under WAC 173-340-702,[249] which presumably means that these criteria are what Ecology shall use in determining whether or not to approve the method. It is not clear whether this means methods that Ecology has generically approved in guidance or rule, or whether it means that a PLP must obtain Ecology's approval of a proposed method of making an empirical demonstration. The former interpretation would be overly restrictive and would delay the ability of PLPs to use this method until such time as Ecology issues the appropriate guidance or rule. The latter interpretation is more reasonable (that is, for a remedial action occurring under Ecology's oversight), although it is probably unnecessary to include it in the rule. Under the proposed WAC 173-340-515(3)(b), persons conducting an independent remedial action should not need Ecology approval.

Recommendation: Clarify that empirical demonstrations may be used where approved by Ecology on a site-specific basis, and that Ecology's decision shall be based on the quality of information requirements under WAC 173-340-702.

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[246] State Register at 194.
[247] State Register at 195.
[248] State Register at 195.
[249] State Register at 195.

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291 (111) Subsection (4)(d)(iii)(A) appears to require that the soil concentrations demonstrated to exist at the site be no greater than the soil value predicted by the empirical demonstration.[250] This criterion does not make sense. An empirical demonstration does not predict, it measures.

Recommendation: Strike subsection (4)(d)(iii)(A).

292 (112) Subsection (4)(d)(iii)(B) appears to require that the ground water concentration not exceed ground water cleanup levels and that it can be demonstrated that this condition will continue into the future.[251] Presumably, the demonstration of future site conditions would be satisfied by meeting the requirement under subsection (4)(d)(ii) that steady state conditions have been achieved.[252]

Recommendation: Clarify that a demonstration that steady state conditions have been achieved satisfies the requirement that it be shown that ground water cleanup levels will not be exceeded in the future.

293 NONAQUEOUS PHASE LIQUIDS

(113) Subsection (5) appears to limit the scope of the NAPL provisions to releases of petroleum hydrocarbons,[253] although this is not stated explicitly either in subsection (5) or elsewhere in the proposed WAC 173-340-747.

Recommendation: Clarify that the NAPL provisions under subsection (5), and the references to NAPL throughout the proposed WAC 173-340-747, apply only to releases of petroleum hydrocarbons.

294 (114) Subsection (5)(b)(i) provides a table (Table 747-2) of default soil residual saturation values for petroleum hydrocarbons.[254] As noted beneath the table, these highly conservative values are based on the release of petroleum hydrocarbons to coarse sand and gravelly soil. Conservative default values for other soil types are available.

Recommendation: Include default values for other soil types commonly found in Washington State.

295 (115) Subsection (5)(b)(ii)(B) provides for a demonstration that measured soil concentrations exceeding residual saturation will not result in ground water contamination above the cleanup levels established under WAC 173-340-720. This appears to misstate the appropriate question. Subsections (3) and (4) provide methods for determining that soil concentrations will not result in ground water contamination above the ground water cleanup levels. The issue under subsection (5), presumably, is whether those soil concentrations will result in the accumulation of NAPL in or on the ground water.

[250] State Register at 195.
[251] State Register at 195.
[252] State Register at 195.
[253] State Register at 195-96.
[254] State Register at 195.

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Recommendation: Rewrite subsection (5)(b)(ii)(B) to clarify that the empirical demonstration must show that measured soil concentrations will not result in the accumulation of NAPL in or on the ground water.

296 **WAC 173-340-7490 TERRESTRIAL ECOLOGICAL EVALUATION PROCEDURES**

ADDITIONAL MEASURES

(116) Subsection (5) authorizes Ecology to require additional measures to evaluate potential threats to terrestrial ecological receptors based on a site-specific review.[255]

Recommendation: This authority should be subject to WAC 173-340-702.

297 **WAC 173-340-7491 EXCLUSIONS FROM A TERRESTRIAL ECOLOGICAL EVALUATION**

INSTITUTIONAL CONTROLS

(117) Subsection (1) provides for four exclusions from the terrestrial ecological evaluation requirements.[256] These exclusions are intended to narrow the focus of the terrestrial ecological provisions to those sites where there is a potential for significant adverse effects on terrestrial ecological receptors. However, most sites qualifying for an exclusion under this subsection are likely to have mandatory institutional controls imposed upon them, notwithstanding that they do not represent a threat to the environment. Indeed, if soil concentrations of a hazardous substance exceed natural background levels within 15 feet of the ground surface (a common circumstance), the only available exclusion that would not result in institutional controls would be if there is less than 1.5 acres of contiguous undeveloped land (1/4 acre for some substances) within 500 feet of any area of the site. It is difficult to imagine many sites, outside downtown urban areas, that would qualify for this exclusion.

The PAC intended that Ecology, before adopting a rule, address certain specific issues and concerns,[257] including "[h]ow to avoid unnecessary land use type controls or regulation on sites and avoid incentives for excessive paving" and "how to identify what is needed regarding institutional controls for preventing exposures to ecological receptors".[258] There is no evidence that Ecology has implemented this PAC recommendation.

Recommendation: Require institutional controls as a condition of an exclusion only if it is demonstrated that the institutional control is necessary to protect terrestrial ecological receptors from significant adverse effects.

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[255] State Register at 197.
[256] State Register at 197.
[257] PAC Report at C-39.
[258] PAC Report at C-39.

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298 **"ON THE SITE OR WITHIN 500 FEET OF ANY AREA OF THE SITE"**

(118) Subsection (1)(c) provides for an exclusion if there is less than a specified amount of contiguous undeveloped land "on the site or within 500 feet of any area of the site."[259] Concern about the ambiguity of this phrase was expressed by some evaluators in the pilot study, but Ecology refused to provide greater clarity because "[t]he existing statute and rule are quite clear that a site is comprised of all places where contamination resulting from release(s) of hazardous substances has come to be located."[260] Ecology's response obscures the fact the PAC flowchart, on which the terrestrial ecological evaluation provisions are ostensibly based, did not recommend counting all of the contiguous undeveloped land "on the site or within 500 feet of the site". The flowchart envisioned, instead, that the point of reference would be "within 500 feet of the area of contamination".[261]

Recommendation: Adopt the language from the flowchart: "within 500 feet of the area of contamination". Make the same change in Table 749-1.

299 **WAC 173-340-7492 SIMPLIFIED TERRESTRIAL ECOLOGICAL EVALUATION PROCEDURE**

SCREENING LEVELS

(119) Subsection (2)(c)(i) provides that no further evaluation is required if no hazardous substance listed in Table 7 is present at concentrations higher than those provided in Table 7.[262] This appears to be a reference to Table 749-2, which includes TPH values,[263] notwithstanding the scarcity of data supporting the inclusion of petroleum hydrocarbons. In the pilot study conducted on these provisions, it was recommended by some of the external reviewers "that the petroleum numbers should be removed from the tables, since the numbers are not derived in the same rigorous manner as other risk-based values in the tables."[264] Ecology's response was that it had developed a risk-based approach for deriving petroleum values based on work done for the Duwamish TPH/Brownfields Project Oversight Group (POG).[265] However, the POG has indicated that its recommendation applies only to the petroleum numbers recommended for industrial/commercial land uses (i.e., 12,000 – 15,000 mg/kg).

Recommendation: Eliminate the petroleum numbers for unrestricted land use from Table 749-2.

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[259] State Register at 197.

[260] Ecology, Terrestrial Environmental Evaluation Pilot Study Report (Pub. 99-604, Nov. 1999) (Pilot Study Report) at 7.

[261] Final Draft Flowchart (Nov. 4, 1996) (incorporated by reference, Pilot Study Report at 5).

[262] State Register at 198.

[263] State Register at 208-09.

[264] Pilot Study Report at 10.

[265] Pilot Study Report at 10.

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300

(120) Subsection (3) provides that institutional controls may be required if a simplified terrestrial ecological evaluation is used to demonstrate that no further ecological evaluation is needed.[266] It appears that the only circumstances under which institutional controls would not be mandatory are where all hazardous substances are located more than 15 feet below the ground surface or the exposure pathway is made incomplete because of natural barriers. Even where cleanup levels are adopted based on the Table 749-2 screening levels, institutional controls are mandatory. These sites "do not have a substantial potential for posing a threat of significant adverse effects to terrestrial ecological receptors".[267] As discussed under Comment (117) above, the PAC recommended to Ecology that before adopting a rule, it consider how to avoid unnecessary land use controls or regulation arising under the terrestrial ecological provisions and to identify what is needed regarding institutional controls. This has not occurred.

Recommendation: Require institutional controls as a condition of an exclusion only if it is demonstrated that the institutional control is necessary to protect terrestrial ecological receptors from significant adverse effects.

301

WAC 173-340-7493 SITE-SPECIFIC TERRESTRIAL ECOLOGICAL EVALUATION PROCEDURES

IMPACT OF THIS SECTION

(121) The PAC recommended that before adopting a final rule regarding terrestrial ecological evaluations, Ecology address conduct a pilot study to evaluate the provisions' "ease of use, practicability, economic impact and comprehensiveness, and to identify recommended revisions."[268] However, the pilot study conducted by Ecology did not include a single site that would have been subject to a site-specific terrestrial evaluation.[269] Ecology's external reviewers expressed concern about this:

> Reviewers expressed uncertainty about whether Ecology would interpret the rule at a particular site in the same way evaluators would, since no site was subjected to the site-specific process. There was concern that as consultants they might not be able to provide adequate guidance to their clients given this lack of certainty. This also left the group feeling they lacked proof that the site-specific process will work since they did not specifically test it.[270]

Ecology's response to this concern was that it intends to provide guidance, but it nevertheless anticipates that differences in interpretation will be ongoing.[271] This response illustrates the relaxed attitude Ecology has taken to implementing the pilot study as intended by the PAC.

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[266] State Register at 198.

[267] Proposed WAC 173-340-7492(1)(a). State Register at 198.

[268] PAC Report at C-39.

[269] Pilot Study Report at 1 ("[T]he site-specific evaluation methodology was not tested by reviewers on an actual site to develop cleanup levels or remedial action approaches.").

[270] Pilot Study Report at 9.

[271] Pilot Study Report at 10.

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Recommendation: Proposed WAC 173-340-7493 should be implemented only on a voluntary pilot basis until Ecology has sufficient information to conduct the evaluation recommended by the PAC. At that time, Ecology should propose appropriate revisions to the section and propose it as a final rule.

302

SCREENING LEVELS

(122) Subsection (3) provides that the soil concentrations listed in Table 749-3 may be used as cleanup levels, which apparently would obviate the need for further evaluation.[272] As with Table 749-2 screening levels, Table 749-3 includes values for petroleum releases. See the discussion of this issue under Comment (119) above.

Recommendation: Eliminate the petroleum numbers for unrestricted land use from Table 749-3.

303

WAC 173-340-750 CLEANUP STANDARDS TO PROTECT AIR QUALITY

PQL/NATURAL BACKGROUND

(123) Subsection (5)(c) states that cleanup levels "are not required to be set at levels below the practical quantitation limit or natural background."[273] See the discussion of this issue under Comment (75) above.

Recommendation: In subsection (5)(c), strike "are not required to" and insert "shall not".

304

WAC 173-340-830 ANALYTICAL PROCEDURES

TPH SAMPLING REQUIREMENTS

(124) Subsection (2)(i) requires that petroleum contaminated sites meet the testing requirements under Table 830-1.[274] Table 830-1 describes sampling requirements for sites where there has been a release of petroleum hydrocarbons. Sampling requirements for other types of hazardous substances are not codified in the rule, and there is no apparent reason why those applicable to petroleum hydrocarbons should be.

Recommendation: Strike Table 830-1 and place it in guidance.

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[272] State Register at 199.
[273] State Register at 203.
[274] State Register at 206.

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TECHNICAL COMMENTS

INCORRECT CROSS REFERENCES

The following cross references need to be corrected:

	Location in Proposed Rule	Cited Cross Reference	Correct Cross Reference
1235	173-340-360(3)(c)(i)[275]	173-340-350(10)	173-340-350(10)(b)
1236	173-340-700(5)(a)[276]	173-340-130	173-340-200
1237	173-340-7491(1)(a)[277]	173-340-7490(3)(g)	173-340-7490(4)
1238	173-340-7492(2)(c)(i)[278]	Table 7	Table 749-2
1239	Table 720-1, fn. c, d, g, h, j, k, m, n, o, t, u, v, w, y and z[279]	296-290-310	246-290-310
1240	Table 720-1 fn. c, d, g, h, m, n, o, v, w, y and z[280]	40 CFR 141.61	40 CFR 141.62
1241	Table 720-1 fn. i[281]	40 CFR 141.51.	40 CFR 141.80
1242	173-340-830(2)(e)[282]	subsection (4)	subsection (3)

SPELLING, PUNCTUATION AND GRAMMAR

1243 • In proposed WAC 173-340-100, the word "cleanup" should be changed to "clean up".[283]

1244 • In proposed WAC 173-340-130(7)(b), the first reference to agencies and tribes should be in the possessive tense.[284]

1245 • In proposed WAC 173-340-320(4), the phrase ", however it" should read "; however, it".[285]

1246 • In proposed WAC 173-340-350(7)(c)(F)(i), insert a comma after "area", and strike the comma after "evaluation".

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[275] State Register at 126.
[276] State Register at 149.
[277] State Register at 197.
[278] State Register at 198.
[279] State Register at 216.
[280] State Register at 216.
[281] State Register at 216.
[282] State Register at 206.
[283] State Register at 102.
[284] State Register at 105.
[285] State Register at 115.

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1247 • In proposed WAC 173-340-350(8)(c)(ii)(B), the comma after "is not necessary" should be stricken.[286]

1248 • In proposed WAC 173-340-360(3)(a)(ii), strike the comma.[287]

1249 • In proposed WAC 173-340-360(3)(c)(i), strike the comma.[288]

1250 • In proposed WAC 173-340-545(3), the word "advanced" in the first sentence should be "advance".[289]

1251 • In proposed WAC 173-340-708(10)(c), a comma should be inserted after "in this chapter".[290]

1252 • In proposed Table 740-1, fn. q, under the first bullet, the word "carcinogen" should be changed to "carcinogenic".[291]

1253 • In proposed Table 745-1, fn. q, under the first bullet, the word "carcinogen" should be changed to "carcinogenic".[292]

OTHER TECHNICAL COMMENTS

1254 • Proposed WAC 173-340-300(2)(b)(viii) refers to chemicals.[293] The term "chemicals" is not defined under MTCA and should be replaced by the term "hazardous substances".

1255 • Proposed WAC 173-340-350(2) refers to selection of a cleanup action under WAC 173-340-350 and 173-340-360.[294] This is confusing because alternatives are *evaluated* under WAC 173-340-360, then remedies are *selected* under WAC 173-340-360. The reference to WAC 173-340-350 should be stricken.

1256 • Proposed WAC 173-340-350(7)(b)(ii) refers to the preliminary conceptual site model as a description of exposure pathways and potential migration routes.[295] This reference should be clarified to include all elements of a conceptual site model as defined in WAC 173-340-200.

1257 • Proposed WAC 173-340-350(7)(c)(iii)(F)(I) requires that the RI include information necessary to establish an exclusion from the terrestrial ecological evaluation procedures.[296] Subsection (7)(c)(iii)(F)(III) requires that the RI include the basis for determining that a simplified or site-

[286] State Register at 119.
[287] State Register at 125.
[288] State Register at 126.
[289] State Register at 140.
[290] State Register at 160.
[291] State Register at 217.
[292] State Register at 219.
[293] State Register at 113.
[294] State Register at 117.
[295] State Register at 117.
[296] State Register at 118.

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specific terrestrial ecological evaluation is not required.[297] These provision appear to be redundant. If so, one or the other should be stricken.

1258 • Proposed WAC 173-340-350(7)(c)(iv) requires the preparation of a safety and health plan and a sampling and analysis plan as part of the RI/FS, and that they "conform to the requirements specified in this chapter." It then directs attention to WAC 173-340-810 and 173-340-820, which describe requirements for these plans.[298] The provision could be simplified by stating that the plans shall "conform to the requirements specified under WAC 173-340-810 and 173-340-820."

1259 • Proposed WAC 173-340-350(8)(c)(i)(A) refers to "each exposure pathway and migration route."[299] The latter term appears to be redundant. If so, strike "an migration route".

1260 • Proposed WAC 173-340-430(4)(b) should include a reference to remediation levels.[300]

1261 • Proposed WAC 173-340-440(2) states that institutional controls apply to remedial actions being conducted at sites under any of the administrative options.[301] This could be misconstrued to mean that institutional controls are required to be a part of every remedial action. The provision should be clarified by stating that institutional controls *may* be adopted as part of a remedial action conducted under any administrative option.

1262 • Proposed WAC 173-340-450(2) requires that a UST owner or operator report a release from a UST, and take certain other actions, within 24 hours of *discovery* of the release.[302] However, the triggering event for this report is *confirmation* of the release, not its discovery. Although a suspected release must be reported within 24 hours of discovery, that requirement arises under WAC 173-360-360 of the UST regulations. As noted in WAC 173-340-450(1)(b),[303] the MTCA requirements apply only after confirmation of the release.

1263 • Proposed WAC 173-340-702(5) should refer to remediation levels as well as cleanup levels.[304]

1264 • Proposed WAC 173-340-720(6)(b) is confusing in part because of the way its provisions are numbered.[305] It would help to designate subsection (6)(b)(iii) through (6)(b)(vii) as (6)(c)(i) through (6)(c)(v) (and cross reference into subsection (6)(b)), and to designate subsection (6)(b)(viii) as subsection (6)(d).

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[297] State Register at 118.
[298] State Register at 118.
[299] State Register at 119.
[300] State Register at 131.
[301] State Register at 132.
[302] State Register at 134.
[303] State Register at 134.
[304] State Register at 153.
[305] State Register at 168-69.

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1265 • Proposed WAC 173-340-730(3)(b)(i)(C) refers to 40 CFR 131 as the national toxics rule.[306] Actually, 40 CFR 131 includes more than the national toxics rule. It describes the requirements and procedures for the adoption by the States of water quality standards. The national toxics rule is contained in section 131.36 of 40 CFR 131. Therefore, the reference to the national toxics rule appears to be intended to incorporate this section, rather than the largely procedural sections found in the rest of 40 CFR 131.

1266 • Proposed WAC 173-340-747(1) defines the term "soil concentration" as "the concentration in the soil that will not exceed the ground water cleanup level ...."[307] This is somewhat confusing, as many people are likely to think of the term as referring to the concentration *actually* present in the soil, whether or not it would result in an exceedance of the ground water cleanup level. The defined term should probably be "protective soil concentration".

1267 • Proposed WAC 173-340-747(4)(b)(vii) does not provide three methods for calculating a site-specific dilution factor. Rather, it provides one method with three steps.[308]

1268 • The subsection heading for proposed WAC 173-340-820(2) is "Contents", which is no longer accurate.[309] It should be stricken and an appropriate heading inserted.

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[306] State Register at 174.
[307] State Register at 191.
[308] State Register at 194.
[309] State Register at 205.

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January 14, 2000

Thomas Fitzsimmons, Director
Washington State Department of Ecology
c/o TCP Rule Revision
P.O. Box 47600
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Dear Mr. Fitzsimmons:

I am pleased to be forwarding you comments on the proposed changes to the Model Toxics Control Act (MTCA) cleanup rule. King County's involvement in facilitating the cleanup and redevelopment of brownfields in the Manufacturing Industrial Centers has lead to these comments.

- First, on behalf of ourselves and our co-signatories (the Cities of Seattle and Tukwila) we are resubmitting our previous comments on the new requirements pertaining to ecological risk evaluation. These comments are set forth in the enclosed letter dated May 21, 1999 with a four-page attachment detailing comments on the December 14, 1989 draft MTCA Rule Amendment.

- Second, the King County Office of Regional Policy and Planning (ORPP) would like to offer its support for many of the innovative approaches to cleanup that are proposed in the MTCA rule revisions. We also have some specific comments on a few of the provisions. These comments are set forth in the enclosed table dated January 13, 2000.

If you have any questions, please contact Lucy Auster, King County Economic Development Specialist, at (206) 205-0711. We appreciate the opportunity to comment on the proposed changes and look forward to continuing to work with the Department of Ecology to cleanup brownfields throughout King County.

Sincerely,

Stephanie Warden, Director
King County Office of Regional Policy and Planning

letter and attachments were Rec'd by e-mail on 1/14/00

King County
Ron Sims, *Executive*

City of Seattle
Paul Schell, *Mayor*

City of Tukwila
John Rants, *Mayor*

May 21, 1999

Trish Akana
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Toxics Cleanup Program
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Dear Ms. Akana,

On behalf of King County and the Cities of Seattle and Tukwila, we are submitting the attached comments regarding the December 14, 1998 draft MTCA Rule Amendment. These comments are specific to Sections 7490 to 7494, including Tables 6 and 7, pertaining to ecological risk protection. Our comments are based on anticipated ambiguities on the Rule's application in the Duwamish industrial area, but may have broader applicability.

We have made comments that are intended to help clarify the purposes of the proposed language. Without these clarifications, we fear that brownfields cleanup and redevelopment might be adversely affected without achieving ecological protection, or that the Rule may work at cross-purposes with important habitat restoration projects that are planned or currently underway in the Duwamish River area.

Thank you for considering these comments. Any questions regarding the attached may be directed either to Lucy Auster at King County at (206) 205-0711 or to Tom Boydell for the City of Seattle at (206) 328-9452.

Respectfully,

Lucy Auster, Economic Development Specialist
King County Office of Regional Policy and Planning

Ben Wolters, Sr. Community Development Specialist
City of Seattle Office of Economic Development

Michael Alvine, Sr. Legislative Analyst
Metropolitan King County Council

Tom Boydell, Brownfield Consultant for
City of Seattle Office of Economic Development

Vernon Umetsu, Associate Planner
City of Tukwila

cc: Nigel Blakely, Environmental Engineer, Washington State Department of Ecology

reply 15

COMMENTS BY KING COUNTY, THE CITY OF SEATTLE AND THE CITY OF TUKWILA

The following comments are limited to Sections 7490 to 7494 and Tables 6 and 7 of the December 14, 1998 draft MTCA Rule Amendment. Our comments are based on our experience in the Duwamish industrial corridor, but may very well have broader applicability.

In providing these comments, we have attempted to consider the situation and resources available to a typical private property owner in the Duwamish corridor, rather than how we would be affected as governmental property owners. By far the majority of properties in the industrial areas are privately owned and small in size. There are significant parcels of publicly owned land in the Duwamish corridor, but the focus of the TPH project and other policy initiatives of the Duwamish Coalition has been to provide greater flexibility and clarity for the average industrial property owner.

We have used our familiarity with the development patterns, as well as land use and development regulations established by local ordinances, to provide us with a perspective of how the proposed sections will work in concert with state and local policy goals for growth management and environmental protection.

305 **Issue: Page 138-145, Section 7490-7494. Terrestrial ecological evaluation. 200 mg/kg TPH concentration in Table 7 and how it is intended to be applied.**

Comment: We wish to reiterate the concerns about the 200 mg/kg TPH concentration in Table 7 raised in the technical comments provided by the Total Petroleum Hydrocarbon (TPH) Project Oversight Group (POG). In particular, we are concerned that the draft rule provisions would channel most or all urban habitat mitigation sites into a fully site specific type of analysis. Site specific analyses could substantially slow current habitat restoration plans, and may be unnecessary.

306 **Issue: Page 138-145, Section 7490-7494. Terrestrial ecological evaluation. Clarity and consistency of a risk-based, tiered process.**

Comment: Structure of the rule – We recommend a more clearly defined tiered process for ecological evaluations patterned after the TPH process for human health evaluations (see Section 700(8)). Using this process, a property would move from Tier 1 to Tiers 2 and 3 as a site becomes progressively more complex and requires site-specific evaluation. In this case Tier 1 language would be reflected in Section 7491 section on exclusions, Tier 2 in Section 7492 on simplified evaluations and Tier 3 in Section 7493 section on site-specific evaluations. 307 We also strongly support Ecology's inclusion of a process whereby industrial and commercial (a.k.a., brownfields) properties may qualify for an exclusion through pathway interruption.

308 It appears that the eco Tiers 1 (exclusions) and 2 (simplified evaluations) do not increase in site specificity as the site conditions become more complex, which is what we had hoped for. Perhaps it would be more useful if Table 7 was utilized in Tier 1 (like a Method A Table or CLARC) followed by additional questions if a site fails Tier 1. One example of how to achieve this would be to move Section 7492(2)(c) to the exclusions

section. In addition, it would be helpful to define the purpose of Table 7 up front in Section 7490 before it is used in any subsequent subsections.

Other changes that might clarify these sections of the rule are:

309 Section 7490(2), first paragraph – The phrase: "At all sites where the soil is contaminated, one of the following actions shall be taken:..." needs to be clarified by the addition of a phrase or another sentence which states whether soil contamination is defined for this section according to Table 7, through Method A or by some other table. Lacking this, property owners may be confused as to whether or not their property is contaminated.

310 Section 7490(3)(d) - We believe this is good language in terms of both structure and content and should be carried throughout. Where possible (Sections 7491 and 7492 in particular), industrial and commercial properties should be discussed separately in an additional subparagraph. For example, Section 7491(1)(b) requires that plants be protected from exposure; yet industrial property does not need to be evaluated for exposure to plants.

311 Section 7491(2) - We suggest that this be moved from Section 7491 and incorporated into Section 7492 or appear as a separate section. Section 7491 should only describe the procedure for an exclusion. Then, Section 7492 should deal sequentially with whether a simplified (or Tier 2) evaluation should be conducted. Similarly, it is clearer if the exclusion process in Section 7491 is referred to as a Tier 1 Check List Approach with off ramps. If greater site-specificity is required, then the next step would be to proceed to Tier 2 which would be a numeric approach as it is described in Section 7492 (2)(a)(ii) and in Table 6 with respect to the Exposures Analysis.

312 Pilot Study External Reviewer's Form - Nigel Blakely faxed out this form on February 2, 1999. We believe this form can be modified to be more useful. Specifically, it could be revised to be used as a Tier 1 Exclusion Application, using a simple check list format. Similarly, the sections that apply to a Tier 2 off ramp (which distinguish whether a site owner, on failing to obtain a Tier 1 exclusion can conduct a Tier 2 simplified evaluation or must conduct a Tier 3 site specific evaluation) can be developed into a Simplified Evaluation Application form that incorporates Table 6. The form for the Tier 2 evaluation should also clearly reflect that three different outcomes are possible: (a) an off ramp, where no further evaluation is needed, (b) a simplified evaluation, or (c) a site specific evaluation as described in Section 7493. We recommend that the Tier 1 and Tier 2 forms be separate.

313 Table 6 - Regarding use of the table and its understandability, our suggestions are:
(a) The use of the word "exclusion" in the title of and in box 6 of Table 6 is confusing due to its use in Section 7491 (exclusions). The word "exclusion" might best be reserved only for Section 7491. For example, the word "requirements" could be substituted in the title of Table 6, and the words "no further evaluation with respect to exposure analysis shall be required" could be substituted in box 6 of Table 6.

314 (b) We suggest that Ecology consider changing the scale in box 2 of Table 6 to list: "industrial = 5; commercial = 3; other = 1"; to reflect different development issues. In

314 cont. addition, in box 2 and footnote c, we suggest clarifying whether the term "wildlife" should be understood according to the provisions of Section 7490(3)(d).

Issue: Definitions.

Comment: There are several references to words or definitions in Section 7490 to 7494 that are confusing:

315 1. "Contiguous". The term "contiguous" is used in 7490 to 7494 without a definition provided (for example in box 1 of Table 6 and in Section 7491(1)(c)(ii) on page 140). We would like to suggest that a definition be provided so that confusion is minimized.

It is also unclear whether the phrase "contiguous undeveloped land on the site or within 500 feet..." in box 1 of Table 6 is meant as cumulative of separate smaller patches of land, refers only to the largest of those patches of land, refers only to any patch of land within 500 feet that is over ½ acre in size or something else entirely.

Also, in local land use law, the unit of development analysis is construed to be the legal lot of record, and a property may contain more than one "site." It would be helpful if it were clear whether we can assume that you are using the word "site" in the same fashion, or to refer to the total area of contamination, with an indication of where this is defined.

316 2. "Native" and "semi-native" vegetation. Some PRPs are attempting to restore sites using native and semi-native vegetation in the Duwamish River area. The language needs to be clarified so that properties are not brought into 7490-7494 just because PRPs have planted native or semi-native vegetation at a mitigation site. A definition for "semi-native" is provided in Section 200. There is no definition for "native". If particular definitions are only used in sections 7490-7494, it would be clearer if they were moved from Section 200 to Section 7490.

317 3. "Site" and "facility". The use of the term site throughout Sections 7490-7494 is confusing. We don't think the term site, as it is broadly defined in Section 200 (Definitions), is used appropriately in these sections. The current use of site potentially expands the focus of an eco-evaluation from a smaller, legally defined parcel to an expansive zone of contamination.

318 4. "Undeveloped land." Sections 7490-7494 uses the term "undeveloped land." We would suggest the following:

(a) that container or materials storage not be considered "undeveloped" land if no wildlife exposure occurs with respect to industrial properties.

(b) that local development requirements for interior lot landscaping of some commercial properties not be included under the definition of "undeveloped" as long as no wildlife exposure occurs (which also in part could depend upon size of development and how "contiguous undeveloped land on the site or within 500 feet" is meant to be understood, as discussed above).

319 5. "Physical barriers". Sections 7490-7494 describe what physical barriers are acceptable to prevent wildlife from using an area. We would suggest the following:

(a) that a compacted gravel surface, if maintained in an ongoing fashion, could also serve as a physical barrier preventing exposure for ecological receptors, particularly at industrial sites.

(b) that it be clear whether container or materials storage prevents exposure and thereby is considered a "barrier."

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KING COUNTY OFFICE OF REGIONAL POLICY AND PLANNING
COMMENTS ON IMPACT OF THE PROPOSED AMENDMENTS TO MTCA ON BROWNFIELDS PROJECTS
(January 13, 2000)

SPECIFIC CITATIONS TO THE WASHINGTON ADMINISTRATIVE CODE (WAC)	COMMENTS
320 WAC 173-340-350(13)(d)(iii) (Restoration time frames)	**Comment** on the language on restoration time frames for situations involving recontamination due to area background concentrations. This language allows for a cleanup action to be indefinitely treated as an interim action, thereby tying up future use of the property indefinitely even though a cleanup has been performed. This provides a disincentive for voluntary cleanups.
321 WAC 173-340-390 (Model Remedies)	**Support** and encourage funding for the development of model remedies. The development of model remedies will help streamline the cleanup of many of the brownfields properties.
322 WAC 173-340-515 (Independent remedial actions)	**Support** and encourage continued staffing of this program.
323 WAC 173-240-520 (Prospective purchaser consent decrees)	**Support** and encourage flexible use of these documents to encourage the cleanup and redevelopment of contaminated property.
324 WAC 173-340-720(6)(b) (Cleanup levels for ground water flowing into nearby surface water – non-potable surface water).	**Support** the language that authorizes the use of surface water cleanup levels as the ground water standard when groundwater is not a probable drinking water source. Harbor Island provides a useful example to include in the regulations.

Reply 15 Page 7 of 8

SPECIFIC CITATIONS TO THE WASHINGTON ADMINISTRATIVE CODE (WAC)	COMMENTS
325 WAC 173-340-720(9) (Points of compliance for ground water)	**Support** the concept of off-property conditional points of compliance. **Comment** on WAC 173-240-720((9)((d)(ii) opposing the requirement that property owners between the source of contamination and the surface water body must agree to the use of the conditional point of compliance. As with the area-wide ground water situations, the notice and opportunity to comment provided to property owners in the vicinity should be sufficient. Actual "agreement" from each property owner will be difficult and often impossible due to absenteeism, apathy and lack of interest. Those truly interested property owners will have an opportunity to comment and such comments should be taken into consideration in determining the point of compliance.
326 WAC 173-322-040 - 050 (Site study and remediation grants)	**Support** the continued funding of these grants and the addition of their availability for independent remedial actions as well as their availability for area-wide groundwater contamination. **Comment** on the potential disconnect between the timing of NFA determinations on independent remedial actions and the limitation on retroactive costs. A problem may arise in situations where the remedial action is required to be performed prior to the issuance of a NFA determination. In such circumstances, the limitation on retroactive funding may render the grant funds moot. The language of WAC 173-233-100(4)(d) would fix this problem, but for the requirement that these circumstances post date March 1, 1989.

Akana, Trish Alicia

From: Greg Wingard [gwingard@earthlink.net]
Sent: Thursday, November 18, 1999 2:50 PM
To: Akana, Trish Alicia; Pam Johnson
Subject: RE: Washington State Register, Issue 99-22

>Mike and others,
>The Draft Environmental Impact Statement will be included in tomorrow's >mailing along with the Proposed rule amendments. Also, the "Notes to >Reviewers" may be ready for distribution before Thanksgiving, although I >doubt it. I can e-mail you the word file when the Notes are ready. In any >event, the Notes will be mailed and posted on the program's web page the >week of 11/22.
>Trish

Trish:

Just wanted to see if I have this right, we get all the documents, except the notes to reviewers. The notes will most likely not be to us before the Thanksgiving holiday. We will then have to read through the notes to incorporate any relevant information in our comments, in order to make the public comment deadline.

327 It seems to me that the comment period should not start until all relevant documents are publically available. Also, it is looking like we are either supposed to curtail our holiday vacation time with friends, family and loved ones, or fall victim to a greatly shortened public comment period. I guess this would work out OK for atheists, without friends and family, but it does pose an undue hardship on the rest of us. This is not the first time this issue has come up. The last three years, Ecology has tried to move some major environmental issue comment period through the holiday season, was not acceptable then, or now.

Please consider this as initial public comment on the file related to Issue 99-22, of the Washington State Register.

Greg Wingard

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Akana, Trish Alicia

From: Laurie Valeriano [lvaleriano@watoxics.org]
Sent: Friday, January 14, 2000 12:15 PM
To: TAKA461@ECY.WA.GOV
Subject: MTCA comments

January 14, 2000

Trish Akana
Department of Ecology
PO Box 47600
Olympia WA 98504-7600
fax: 360-407-7154

Dear Ms Akana:

Please accept these comments on the draft revised MTCA rule. The Washington Toxics Coalition is a statewide environmental and public health advocacy organization with about 1500 members across the state. We were involved in the MTCA Policy Advisory Committee (PAC) and have assisted numerous local groups in Washington dealing with cleanup sites.

328

First, we would like to address the process. While we understood that revising this rule was going to be a difficult, we had a very different understanding regarding what the process was supposed to be. We understood that our participation on the PAC would result in recommendations to Ecology and then Ecology would draft a rule that would be sent out for public comment. In between the PAC process and this draft of rule a very different process evolved that was very different and extremely unbalanced. This process included numerous, long in depth meetings that were impossible to be a part of from a public interest group's perspective. They were often all day meetings that were set up to address the concerns a few large industries. Although we, particularly Greg Wingard of Waste Action Project, tried our best the environmental community did not have the time nor the resources to attend all of the meetings. The result was a process that was dominated by industry interests. The rule making process is supposed to be set up so that abuses like this are avoided. We hope that Ecology will not pursue a process like this in the future.

Specifically, we request that the first paragraph of the Introductory Notes to Reviewers be clarified to state that the small group that participated in the negotiations was not balanced and was often dominated by industry interests. This makes it even more important that the public comment. We also request that Ecology develop a plan that shows how the public will be included in this process, beyond the typical notice and comment requirements. Something needs to be done to balance the equation.

329

General Policy

We are concerned with the general policy direction of the rule to rely more on site-specific risk assessments. Risk assessments are at best inadequate and imprecise estimates of actual risk. They attempt to assess only a few of the many risks associated with contaminant exposures and cannot predict the complex interactions among the many chemicals to which potential victims are always exposed. Outcomes can often be heavily influenced by the biases of the risk assessors and it is easy to bias an outcome through inappropriate use of overly favorable assumptions. Allowing more risk assessments on a site by site basis makes it more difficult for the public to be involved, more difficult from an enforcement and oversight

perspective and more difficult to ensure that cleanups will happen. In our experience, we have seen risk assessments used mostly for establishing less protective cleanup level not more protective levels and this is extremely concerning. How will the Department ensure that this will not occur under the new MTCA?

330

Ecology has announced that it will be pursuing a strategy to virtually eliminate bioaccumulative chemicals of concern at cleanup sites by 2025. If Ecology is serious about this strategy these chemicals need to be specifically addressed as part of this rule. This means that Ecology needs to be as aggressive as possible when dealing with sites where these chemicals exist and independent cleanups and risk assessments should not be an option. Achieving cleanups as close to "background" levels as possible at these sites should be a priority. A clear policy statement in this regard should be made in the rule.

Specific Comments on the Rule

Although the shift towards more site specific risk assessments has made the rule longer and much more complicated, the new question and answer format is a little more user friendly and the use of examples, diagrams and overview discussions is helpful.

Section 300

331

(2)(b) It is important that the rule contain a specific list of what situations should be reported so its not left entirely up to the judgment of a liable party The rule should not specify a minimum quantity like CERCLA, because there is not enough information at this early stage in the site discovery process to know the quantity that has been released. The list should also include in (vii), permitted industrial waste disposal and releases. For example, once a facility has shut down responsibility for cleanup of contamination that has resulted from releases to water, land or air even if these releases were permitted still exists. This should be clear in this section.

Section 330

332

(7b) It needs to be clearer that all of the conditions in subsection (a) need to be met for sites to be removed from the list. Add an and to the end of (E).

333

(7) Section (7) clarifies current department policy and should be included in rule. This also provides an accountability mechanism for the public.

Section 350

334

(8)(c)(ii)(B) We are opposed to including landfills as an example of a site where a permanent remedy is not feasible. There are places around the country where permanent remedies have been sought for landfills and Kitsap County is considering removal of the Bainbridge Island Landfill. This example locks a community into a predetermined outcome and is unfair. Port Angeles residents are also seeking permanent cleanup for industrial landfills in a residential community. This reference should be deleted.

335

(8)(d)(i) & (ii) It needs to be clear that none of the requirements are subject to waivers. By mentioning it in (i) and not (ii) it implies that (ii) is. Also, (ii)(c) should be changed to say address public concerns, not merely consider them.

336

(8)(d)(iv) The requirement that contaminated soils in residential areas, schools and daycare centers be treated or removed is an important requirement that must be retained. We are not supportive of containment measures for these sites. These are areas where exposure by children is

very likely and institutional controls alone are unlikely to be successful in controlling future exposure. Public parks, commercial uses should also be included in this list as they are often in residential zones and in the case of public parks swimming, dirt digging and other recreational activities provide opportunities for greater exposure. 336 cont.

(8)(e)(i) Protectiveness. Short term risk to workers or due to truck traffic during site cleanup should not be given the same weight as long term risks to residents and workers by leaving contamination behind. 337

Section 360 338

(3)(ii)(c) The description of the disproportionate cost test is not correct or consistent with the PAC report. During the PAC process industry representatives argued that the phrase "substantial and disproportionate" is misleading because it implies the ability of a PLP to pay had to be considered when deciding on a remedy. That was never our understanding. It was agreed that the word "substantial" be removed with the understanding that "disproportionate" meant there still had to be a significant difference in cost before the more permanent remedy was rejected. The proposed definition implies that if the permanent remedy costs only a penny more, it can be rejected. That is not consistent with the statutory requirement that permanent remedies be used "to the maximum extent practicable". This statement should be altered to say: "Costs are disproportionate to benefits if the incremental costs of the alternative over that of a lower cost alternative significantly exceed the incremental degree of benefits achieved by the alternative over that of the other lower cost alternative." In addition, benefits and costs should include what the community considers beneficial as such as social, psychological, democratic and community values as well their future costs for health care and future cleanup costs should be a part of the analysis as well.

(4)(B) It is misleading to say that a remedial level is protective of human health and the environment. The remedial level comes into play when a "permanent cleanup action is not feasible." It needs to be clear to the public that the cleanup level is established to be protective and a remedial level is established to allow contamination to be left on site with certain measures to be taken that will supposedly protect the public. Therefore, the selected remedy is what is supposed to be protecting the public, not the remedial levels. If the remedy fails, for example, then the remediation level is no longer protective. This needs to be much clearer throughout the rule. And it should be further clarified that remedial levels are NOT, under any circumstances, the same as cleanup levels. This was very clear in the PAC process. 339

Section 370 340

The meaning of these expectations is not clear. It should be made clear in the introduction to this section that the department and the courts should use the expectations in this Section as a guide when evaluating remedies for compliance with this Chapter.

(2) The result of the cleanup should be that the site is cleaned up permanently so that future generations are not left with the legacy of pollution.

Section 390 341

Any model remedies identified by the department should be required to be adopted by rule amendment to insure adequate public review and evaluation has been done.

In addition, additional public participation measures should be in place in this section of the rule so that a community can reject a model remedy if

it is not address the community values or concerns. In other words, a model remedy should not preclude better alternatives (as the community would define) as they are developed. 341 cont.

Section 420

(2) The list of when periodic reviews is required is much clearer than current language. The condition that the department be able to require that periodic reviews be conducted when there is uncertainty in a site-specific risk assessment or eco risk evaluation or the reliability of a remedy is an important safeguard for the public. 342

Section 440

(11) Independent cleanups should be prohibited from relying solely on institutional controls. Institutional controls are not permanent and they rely on extensive oversight to ensure that they remain in place. Although additional safeguards have been added in this new rule, the reality is that Ecology will not have the resources to carry out enforcement to the level that it is needed. Therefore, these measures should be discouraged as much as possible. 343

Section 510

This section is helpful in describing to the average person what administrative options exist for remedial actions. This is often a question I get from citizens and it is helpful to have in rule. 344

Sections 520, 530 and 540

Mandatory penalties should be required in orders or decrees as an incentive to meet timelines. 345

Section 515

(3) All independent remedial actions should be required to be substantially equivalent with a department conducted or department supervised remedial action. 346

Independent cleanups should not be allowed, however, when there are concerned community members or when there are bioaccumulative chemicals of concern. In addition, if there is an existing order or decree on a portion of a site and a PLP wishes to conduct an independent action on the rest of the site, it should be prohibited. 347

Section 600

(2) Independent cleanups should be subject to public participation requirements. 348

(17) According to the law, public participation grants can also be issued to not-for-profit public interest groups. This needs to be specifically included in the language. 349

(18) It was not the intent of the PAC to have communities only use the state Technical Advisor and not hire their own Advisor with public participation grants. It should be clear that the Technical Advisor is not a substitution for this, it merely supplements the assistance communities can have access to. 350

Earlier language describing citizen advisory boards for sites was struck from this draft. We are opposed to this. These boards can be very valuable and have worked in a number of cases, including Hanford and Cascade Pole 351

direct conflict with the agency's commitment to public participation and we request it be put back in. 351 cont.

Section 610 352

An earlier draft more clearly stated that Regional Citizen Advisory Committees could provide input on specific sites. This is now less than clear in this draft. These committees can provide the department with a valuable resource of citizen input much like a planning commission or park board does at the local government level. It should be made clear that the department can seek the input of these committees on specific sites. We request that the language from the original draft be included that states: "At the request of the department or citizens in the potentially affected vicinity if a site, the committee may review and comment on remedial actions proposed at a specific site." It only makes sense to use these boards as a resource.

Section 702

Still need to review further.

Section 708 353

(11) Probabilistic risk assessment should not be allowed here and should be eliminated in the definition as well. The PAC recommended a REVIEW of probabilistic risk assessment for FUTURE inclusion in MTCA. I have never seen this review. These methods are still in the early stages of development and need a lot more public discussion before they should be allowed to be applied at sites to develop cleanup standards. They are also very difficult for the public to understand and critically evaluate. All references to this type of risk assessment should be removed, until a more thorough public debate has occurred.

Section 720 354

Still reviewing, however,

(10) AKART should continue to be retained as a requirement whenever ground water has the potential to impact surface water. That is consistent with state water quality law.

Earlier drafts of the rule required that an areawide point of compliance be established only through a consent decree or order. The current proposal allows independent cleanup sites to declare use of this provision and avoid cleanup without adequate public oversight. The language also allows the department to approve of an areawide point of compliance when providing technical assistance. The requirement that the department publish a public notice in the site register is totally inadequate. The general public does not read the site register, especially a property owner who may not even realize the ground water beneath their property has been contaminated by someone else. This provision should be revised to required that areawide points of compliance only be allowed if they are part of an order and they should be discouraged as a matter of policy.

Section 730

Still reviewing.

Section 740 355

Several of the method A values indicate they are based on the current 100 X ground water cleanup level formula. It is our understanding that the MTCA

longer a valid method to derive soil cleanup levels. Many of these contaminants are very mobile and the 100 X approach does not appear to be adequately protective based on the department's own modeling presented to the Board. These and other method A soil values should be updated to reflect current science. This is what the industry asked for in the very beginning.

355 cont.

Section 750

356

The additions to apply this section to indoor air as well as outdoor ambient air makes sense and should be retained. Experience has shown that vapor emissions are more likely to be a concern in buildings or utility vaults than in outdoor air.

Earlier drafts of this section circulated by the department indicated that OSHA and WISHA worker standards were not an appropriate method A or B ARAR. That language has been removed from this draft with no explanation. Those standards were never intended to be used in residential settings or even non-industrial commercial buildings and the rule should be revised to state that.

357

We will have additional comments as we continue to review the rule. We appreciate the opportunity to comment on this draft and look forward to the next one. Please contact me if you have any questions at 206-632-1545x14 or lvaleriano@watoxics.org.

Thank you.

Laurie Valeriano
Toxics Policy Analyst

Laurie Valeriano, WA Toxics Coalition
4649 Sunnyside Ave. N, Suite 540E Seattle WA 98103
206-632-1545x14; 206-632-8661 (fax)
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Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

00-OSS-128

Mr. Curtis Dahlgren
Toxic Cleanup Program
State of Washington
Department of Ecology
P.O. Box 47600
Olympia, Washington 98504

Dear Mr. Dahlgren:

COMMENTS ON THE PROPOSED AMENDMENTS TO THE MODEL TOXIC CONTROL ACT REGULATIONS

Thank you for the opportunity to comment on the State of Washington Department of Ecology proposed amendments to the Model Toxics Control Act regulations. The U.S. Department of Energy, Richland Operations Office comments are being submitted electronically as a Microsoft Word file for your consideration. They are also being submitted in hard copy via U.S. mail.

Please direct any response to these comments to Clifford E. Clark, of my staff, at the address shown in the letterhead. You may call him at (509) 376-9333, if you have any questions.

Sincerely,

James E. Rasmussen, Acting Director
Office of Site Services

OSS:CEC

Attachment

cc w/attach:
R. J. Landon, BHI
B. L. Vedder, BHI
M. A. Wilson, Ecology
J. W. Hales, FHI
F. A. Ruck, III, FHI
W. E. Toebe, FHI
A. K. Ikenberry, PNNL
H. T. Tilden, III, PNNL
R. H. Gurske, WMH

cc w/o attach:
M. A. Beery, FHI

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HANFORD SITE COMMENTS ON PROPOSED CHANGES TO MODEL TOXICS CONTROL ACT (MTCA) CLEANUP REGULATION

General Issues

358 1. **Rule development process:** The Washington State Department of Ecology (Ecology), the regulated community, and numerous public interest groups have spent a good deal of time and effort on this MTCA rulemaking endeavor. Ecology's dissemination of the preproposal draft version of the rule changes in late 1998 presented a valuable opportunity to consider the adequacy of the contemplated changes. Ecology received a large number of significant comments from various quarters. These comments identified a number of serious concerns with the rulemaking language. Although Ecology has revised the proposed rule in an attempt to address these issues in large measure, many of the concerns raised on the draft still remain. As a consequence, many of the comments presented below are similar to comments previously submitted, and which RL believes have not yet been adequately addressed.

359 2. **Overall evaluation:** Contrary to Ecology's desired intention, as stated in a cover sheet, publication #98-605, included with the December 1998 draft rule, that this proposed rule will make the business of environmental cleanups fairer, easier to understand, more flexible, less ambiguous and less expensive, the proposed MTCA rule clearly does not satisfy these criteria. For instance, on the criteria of:

Fairness. Ecology has added new requirements for providing notice to local government and nearby property owners that is over and above the existing public notice requirements and at the discretion of Ecology personnel. It has also included new language in the independent cleanup section, which gives the agency unrestricted control over these types of cleanup by requiring all releases and independent cleanups to be reported. Additionally, while the ecological risk assessment provisions allow for substitute receptor species, Ecology has included a catchall statement which will basically force the potentially liable person to comply with Ecology's food-web model if the agency doesn't like the substitute values or species proposed. Finally, Ecology does not satisfy the criteria of fairness when it concludes in the Small Business Economic Impact Statement that there will be a disproportionate impact on small businesses.

Easier to understand. Although Ecology has reorganized the remedy selection provisions, this has not helped to clarify what is intended and in fact the provisions in the proposed rule represent a great reduction in clarity and readability from the current rule. Also, the soil to ground water provisions are so technically involved as to be unreadable, therefore, clearly not satisfying the criteria that the proposed rule is "easier to understand".

Flexible. While Ecology has provided options in risk management, such as "natural attenuation", there is no guidance on how to use this or the other options which takes away from the ability of the potentially liable person (plp) to have flexibility. Furthermore, we are concerned that Ecology will not be able to provide guidance in the near future which will make it difficult for the plp to take advantage of these options. Also, Ecology has provided more options for risk assessment but these are difficult to find in the text.

Less Ambiguous. Ecology has created ambiguity by not including a description of how to do a disproportionate cost analysis. Also, there is ambiguity in the ecological risk assessment provisions, as state above, wherein Ecology has included a catchall statement which basically

forces the potentially liable person to comply with Ecology's food web model if the agency doesn't like the substitute values or species proposed.

Less expensive. Ecology has stated in the Small Business Impact Statement that there will be an increase in costs for certain small businesses of 20%. This clearly indicates that the proposed rule is not less expensive. Furthermore, from this analysis, it can be concluded that there will undoubtedly be a proportionate increase for large businesses as well.

360 It is clear from the above that Ecology has not followed through on the standard they set for this rulemaking which was to make it fairer, easier to understand, flexible, less ambiguous, and less expensive. It is also clear that Ecology has not followed the directive in Governor Locke's Executive Order 97-02, which states that "rules be written and organized so they may be easily understood and used by people who are affected by them." Due to the lack of clarity, much of the regulation will be left to individual Ecology personnel to interpret and implement, resulting in inconsistent application throughout the state and a strong likelihood that cleanup decisions will be based on the preference of individual regulators rather than defensible remedies resulting from balanced and objective evaluations.

Ecology has also still not addressed a number of issues that are of concern to facilities. These issues were raised in a series of meetings with Ecology's facilitator and mid level management in the Toxic Cleanup Program as well as Ecology senior level management. While certain stakeholders present at these meeting felt they had reached agreement, Ecology did not follow through on its commitments and hence, these issues have never been resolved. We continue to have major concerns about the proposed rule and recommend that Ecology put the rulemaking on hold pending resolution of these concerns.

361 3. **Land-use planning authority:** Land-use is an important factor in implementing MTCA cleanup actions, particularly with regards to establishing cleanup levels for industrial-zoned properties. The current and proposed regulation acknowledges the authority of cities and counties in land-use planning. To clarify for the regulated community, does Ecology assert any independent land-use planning authority in making MTCA cleanup decisions, or will Ecology always accept local land-use planning efforts? E.g., if a city planning pursuant to the Growth Management Act (GMA) zones a property as industrial, does Ecology nevertheless reserve the right to require cleanup to a residential standard? If so, what criteria would Ecology use to reject the city's GMA authority? Please clarify the Ecology position on this matter in the Responsiveness Summary for this rulemaking effort.

362 4. **Relationship to Federal Cleanup Program:** The MTCA revisions should be modified to state that a cleanup action selected under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) *will* be deemed to satisfy the requirements of MTCA *provided* that the cleanup action incorporates and complies with the substantive provisions of MTCA, as acknowledged by Ecology signature on the decision document for the CERCLA cleanup action. This would eliminate the jeopardy faced by potentially responsible parties of completing an approved cleanup action under the federal cleanup law only to face the possibility of a subsequent cleanup action imposed pursuant to MTCA. This concept could be included in the MTCA regulations by making changes to the language proposed in WAC 173-340-380(4).

363 5. **Intended Impact on Cleanup Actions:** As with the draft rule, the proposed rule is unclear regarding the intended impact that Ecology foresees based on the new requirements. To address this matter, please provide answers to the following questions in the Responsiveness

Summary for this rulemaking effort:

- From an historical perspective, approximately what percentage of MTCA cleanups have attained the fully "unrestricted land use" cleanup levels rather than using containment, institutional controls, or relying upon a different exposure/use scenario?

- Is it Ecology's belief that the proposed regulation would result in a higher, lower, or about the same percentage of cleanups to fully unrestricted land use levels?

364

6. **Use of individuals rather than populations in ecological risk:** In the preproposal draft of WAC 173-340-7490 through 7494, Ecology built their premise of significant adverse affects from contaminants on impacts to **populations**, except in the case of threatened and endangered species. This was the correct ecological approach and was consistent with environmental law and guidance established by EPA under 43 CFR 11. It appears that the proposed rule has changed the level of significant effect to the point where non-threatened and non-endangered species are treated the same as threatened and endangered species so that impact to an individual would be considered unacceptable. The preproposal stated that "the significance of an adverse effect is evaluated relative to an impacted local population of species of concern." It also went on to consider significant impacts as those that would alter "important structural or functional characteristics or components of the affected ecosystem." It appears that Ecology has removed the reference to population effects in order to justify more stringent soil cleanup standards. This is inappropriate. The rule should be revised to focus on protection of populations.

Specific Issues

365

1. **WAC 173-340-120(2)(a):** The proposed revisions would delete the sentence indicating that reporting of most current releases (as opposed to past releases) is required under the state's hazardous waste, underground storage tank, or water quality laws. What is the intent of this deletion? Is Ecology implying that additional reporting requirements have been added as part of this rulemaking effort, such that the previous reliance on other laws for reporting of current releases is no longer correct? It would appear that additional reporting may be intended based upon proposed provisions pertaining to independent remedial actions, but the rule is not clear on this matter. The existing proposal is inadequate if such additional release reporting is expected. If additional reporting of releases is required, specific regulatory language should be developed and presented to the public for comment.

366

2. **WAC 173-340-120(3)(a):** The language in this section states that Ecology will notify the public "if the department decides that no further action is required." From the Responsiveness Summary for the February 1991 amendments to WAC 173-340 it is clear that Ecology does not require site listing or cleanup in all situations, even if a cleanup level is exceeded. Please identify, in the regulation, the criteria that Ecology will use to decide that no further action is necessary at a site.

367

3. **WAC 173-340-120(8)(b):** This section allows for independent remedial actions. The proposed changes to the rule require that such actions be reported to Ecology, with no threshold below which such reporting would not be necessary. This is a significant change from the existing rule, which requires reporting in accordance with WAC 173-340-300. The current regulation at WAC 173-340-300 requires reporting only of those releases that the facility owner/operator determines to present a threat to human health or the environment. Under the proposed language of WAC 173-340-120(8)(h) and WAC 173-340-515, arguably

367 cont.

every release and independent cleanup action would require reporting. Is it really Ecology's intent that, for example, a cleanup of a small leak of antifreeze from a fleet motor vehicle be reported as an independent cleanup action? If so, the proposed standard represents an entirely unrealistic and non-implementable requirement. If this is not the intent, the regulatory language needs to be revised to establish the threshold above which reporting would be required. It is suggested that Ecology maintain the approach taken in the current regulation; i.e., reporting is required pertaining to the discovery and cleanup of releases that the facility owner/operator determines to pose a threat to human health and the environment.

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4. **WAC 173-340-200, "natural attenuation" definition:** In order to properly reflect the viability of natural attenuation in certain circumstances, the following sentence should be added to the end of the proposed definition: "However, natural attenuation could represent an appropriate remediation method provided it is protective of human health and the environment and it is capable of achieving cleanup objectives within a timeframe that is reasonable compared to more active remedial measures."

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5. **WAC 173-340-300(2)(b):** The proposed language provides "examples" of situations where a release "generally" would require reporting as a potential threat to human health or the environment, subject to the facility owner/operators best professional judgement. Although providing examples is helpful, care must be taken to ensure that the list is not misconstrued by individual Ecology regulators as enforceable regulatory requirements that automatically trigger reporting in every instance. Please confirm, in the Responsiveness Summary for this rulemaking effort, that the rule does not necessarily require reporting in every instance where one of the "examples" is encountered. Additionally, item (viii) in the list of examples ("sites where chemicals have leaked or been dumped on the ground") should either be deleted or clarified and reproposed. What exactly is a "chemical" within the scope of this item? Is table salt (sodium chloride) a chemical? How about antifreeze? Gasoline? Oil? What quantity of chemical must be present before reporting under this item would be expected? A grain of salt? A drip of oil or antifreeze? Or only a quantity that the facility owner/operator determines poses a threat? If the latter, the item should be deleted: reporting of such releases are already required under this section, and this unqualified and unquantified example merely adds confusion.

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6. **WAC 173-340-310(5):** New language in this section would give Ecology the authority to determine, on a case-by-case basis, "the method and nature of the notification" to be given to people in the potentially affected vicinity. This appears to give Ecology unconstrained authority on this matter, leaving implementation to the whim of individual Ecology personnel. This is inappropriate. Instead, the regulation should propose fairly specific criteria and requirements for the sort of notifications Ecology may typically impose, with a case-by-case allowance for a more extensive notification effort if approved by the Manager of Ecology's Toxic Cleanup Program.

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7. **WAC 173-340-350(8)(c)(ii)(A):** In order to create internal consistency, this provision should be revised to read: "*Except as provided in (B) (below),* the feasibility study shall include . . ."

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8. **WAC 173-340-350(8)(c)(ii)(B):** What are the criteria for determining that the cost of a permanent alternative "is so clearly disproportionate that a more detailed analysis is not necessary?" Clear to whom? Is this a subjective "we'll know it when we see it" judgement? The regulation should be revised to identify, at a minimum, some "rules of thumb" criteria for determining "clearly disproportionate" cost. Additionally, Ecology should consider establishing a statewide remedy review board (similar to EPA's National Remedy Review

Board) in an effort to ensure statewide consistency in remedy selection.

373 9. **WAC 173-340-350(9)(a)(ii):** This provision establishes a threshold requirement that cleanup actions comply with cleanup standards. The definition in WAC 173-340-700(3) states that the term "cleanup standards" consists of, among other things, cleanup levels. Does the threshold requirement in –350(9)(a)(ii) therefore require that cleanup actions comply with cleanup levels? How can this be, when elsewhere the MTCA regulations clearly allow for use of remediation levels? The confusing regulatory provisions pertaining to cleanup actions, cleanup levels, and remediation levels – so evident in the preproposal draft revisions – continue throughout this proposed rule. The regulation should be revised in several places to indicate, in understandable terms, that cleanup to "cleanup levels" is not always required (although such cleanup is one option) and that cleanup to remediation levels (which should be re-defined as a numerical standard) is allowed. The regulation should be revised to clearly reflect the concept of a "cleanup action" as opposed to a "remediation level." The latter implies a concentration-based standard as opposed to an action (consistent with the proposed definition), however; the regulation appears to use the term in instances where "cleanup action" or "cleanup action alternative" would be more appropriate.

374 10. **WAC 173-340-350(9)(e)(ii):** This section specifies that cleanup actions shall not rely primarily on institutional controls and monitoring if it is technically practicable to use a more permanent action. The "shall" should be change to "should" or indicate that this is a "strong preference." There may be instances where it would be most beneficial to simply implement institutional controls. For example, if an area is a designated wildlife habitat and the only unacceptable risk would be to a year-around residential user (i.e., contaminant levels do not present a risk to wildlife), it might be better in terms of avoiding disruption to the wildlife to implement institutional controls and monitoring.

375 11. **WAC 173-340-350(9)(e)(ii):** This section should state that cleanup actions should not rely primarily on institutional controls and monitoring where it is technically *practical* to implement a permanent solution, rather than where it is technically *possible.*

376 12. **WAC 173-340-350(13)(d)(iv):** Under CERCLA, a waiver is allowed if it can be demonstrated that cleanup to a certain level is technically impracticable. The proposed MTCA regulation states that the action cannot be finalized and must be considered interim in situations where attainment of the cleanup level is technically impracticable. However, a technical solution may never exist in a "reasonable time frame." A provision should be added to this section allowing an action to be "final" if it is demonstrated that is technically impracticable to meet a cleanup level. It is also unclear why the exception for cleanup levels that are below technically possible concentrations would be allowed only for Method C. Please clarify.

377 13. **WAC 173-340-390(2):** What is the process Ecology intends to use for establishing a model remedy? Will an opportunity for public comment be afforded? Or will Ecology unilaterally establish model remedies with no formal public input? It is recommended that the rule be revised to identify the process Ecology will use for establishing model remedies. Public comment should be an integral part of the model remedy process.

378 14. **WAC 173-340-515:** This new section establishes various standards for conducting independent remedial actions, including requirements for submitting written reports to Ecology. There is no threshold established for when reporting would be unnecessary. Does Ecology really intend that the facility owner/operator prepare and submit a written report to

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document cleanup of a few drops of hazardous substance (e.g., a leak of antifreeze from a fleet automobile)? Or is the intent that reporting is required only when the owner operator concludes that the release presented a threat to human health or the environment (presumably considering, among other things, the "examples" shown in WAC 173-340-300(2)(b))? As currently written, there is no lower threshold for reporting independent cleanup actions, placing an unreasonable burden on the regulated community. The rule should be revised to indicate that reporting is required only is situations where the release presents a threat to human health or the environment.

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15. **WAC 173-340-700(5)(b); WAC 173-340-700(5)(c); WAC 173-340-706(1)(b):** Based on the language in Section 706(1)(b), it appears that Ecology has now restricted use of Method C for soils to industrial soils only. Method C could not be used for recreational/agricultural land uses; instead, the "modified Method B" would be used to develop cleanup levels under these alternative land use scenarios. Is this understanding correct? There may be clear instances (e.g., golf courses, parks, etc.) where residential use is as unlikely as at industrial sites and greater flexibility than allowed under standard Method B is appropriate. Perhaps this could be accommodated by use of modified Method B. Is this Ecology's intent? If not, what is the regulatory mechanism for establishing cleanup standards for non-residential, non-industrial land use scenarios?

Additionally, in order to remain consistent with current MTCA provisions, Section 700(5)(b) should be revised to state that under modified (but not standard) Method B the cleanup level for individual carcinogens is based upon a lifetime cancer risk of one in one hundred thousand (1×10^{-5}) rather than a one in one million risk. This language also needs to be included in the sections addressing cleanup standards for the specific media.

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16. **WAC 173-340-702(10):** This section should be revised to state that cleanup actions selected under the federal cleanup law which (1) incorporate substantive provisions of MTCA, and, (2) are approved (or co-approved in conjunction with EPA) by Ecology shall be deemed to satisfy the requirements of MTCA. This would eliminate the jeopardy of completing an approved cleanup action under the federal cleanup law only to face the possibility of a subsequent cleanup action imposed under MTCA.

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17. **WAC 173-340-705(2)(c), various other locations:** In order to be consistent with current Ecology policy as well as the language in the draft rule at Section 705(5), add a statement to this section indicating that cleanup levels under applicable state and federal law shall be considered sufficiently protective provided the associated cancer risk does not exceed one in one hundred thousand or a hazard index of one. Similar statements need to be included at various other locations in the regulation. Without such language, the regulation could be interpreted to require Method B cleanup to a one in one million cancer risk (being the most stringent limit) in situations where a state or federal cleanup limit represents a cancer risk in excess of one in one million, but less than one in one hundred thousand. (Note that the regulatory language requires that Method B cleanup levels be at least as stringent as *all* the listed criteria, implying that calculated cleanup levels would take precedence over levels based on applicable law when the former are more stringent.)

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18. **WAC 173-340-706(1)(a)(i):** Language retained in this section states that "[w]here Method A or Method B cleanup levels are below area background concentrations, Method C cleanup levels may be established at concentrations that are equal to area background concentrations, but in no case greater than concentrations specified in subsection (2) of this section." Subsection (2), however, specifies a hazard quotient no greater than 1 and carcinogenic risk

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382 cont.

no greater than one in one hundred thousand. This requirement could require a cleanup standard that, in certain situations, is below background levels. In contrast to the Section 706(1)(a)(i) provisions, Sections 700(6)(e) and 706(6) merely (and reasonably) provide that Method B and Method C cleanup levels do not need to be set below background levels. It is recommended that Section 706(1)(a)(i) be deleted.

383 19. **WAC 173-340-708(5)(f):** The proposed language in this section is confusing. Consider revising along the following lines: "When making adjustments to cleanup levels and remediation levels for multiple hazardous substances, the concentration levels for individual hazardous substances shall not be established lower than the practical quantitation limit or natural background levels."

384 20. **WAC 173-340-709(3):** The title to this subsection is inappropriate. It should be changed to something like "Statistical Analysis."

385 21. **WAC 173-340-720; WAC 173-340-747:** These sections should state which groundwater cleanup level should be used when values of both the Reference Dose and Cancer Potency Factor are available to calculate two groundwater cleanup levels (e.g., using Equation 720-1 and Equation 720-2).

386 22. **WAC 173-340-720(4)(b)(ii)(A), Equation 720-1:** In order to use this equation it must be determined if the parameter "INH" is 2 for volatile hazardous substances or 1 for all other substances. How is it determined if a hazardous substance is regarded as "volatile"? No citations for this determination have been provided.

387 23. **WAC 173-340-720(4)(b)(ii)(A) and (B), Equations 720-1 and Equation 720-2:** These equations are used to calculate Method B or C groundwater cleanup levels in units of micrograms per liter. However, Equation 747-1 in WAC 173-340-747 calls for use of the groundwater cleanup level calculated from WAC 173-340-720 in units of milligrams per liter. This discrepancy invites serious calculation errors that could cause those who are regulated by MTCA to make one thousand-fold errors in calculation of soil concentrations protective of groundwater. Equation 747-1 should be rewritten to include groundwater cleanup level calculated from WAC 173-340-720 in units of micrograms per liter with a conversion factor to convert from micrograms to milligrams.

388 24. **WAC 173-340-720(8)(b):** The proposed language appears to require a downward adjustment of cleanup levels based on applicable state or federal law in situations where such levels exceed a cancer risk of one in one hundred thousand or a hazard index of one. This allowance presupposes that the applicable state/federal law standards may be used in lieu of the calculated MTCA carcinogen and noncarcinogen cleanup levels, even when the latter are more stringent. Yet the regulatory provisions (e.g., at WAC 173-340-720(3)(b)) require that cleanup levels be "at least as stringent as *all*" of the applicable or calculated values, indicating that the more stringent standard would always establish the cleanup level. I.e., a cleanup level based on applicable state or federal law could not be used if the calculated MTCA cleanup level was lower. In order to accommodate use of applicable standards in lieu of more stringent calculated levels (presuming the former do not exceed the one in one hundred thousand/hazard index of one criteria), the requirements in sections (3), (4), (5), (6), and (7) need to be revised accordingly.

389 25. **WAC 173-340-720 (10)(d)(iii).** We are concerned that the standards given in the revised MTCA tables are derived using a flawed method. We are also concerned about the

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presumption that groundwater levels exceed cleanup levels (definition of "null hypothesis" in 173-340-200). While this is appropriate when the cleanup levels are concentration-based, the MTCA amendments shift the cleanup levels to background levels in some cases. It is inappropriate to assume that the groundwater contains more than background levels as a starting hypothesis.

Cleanup levels are based on risks, ARARs, ecologically protective levels, etc. The statistical test is one-sample test (i.e. evaluating the site data versus a constant or fixed value). However, when the cleanup levels are based on background, the statistical test is two-sample case (i.e. evaluating the site data versus background data). Currently, the default method [as specified the compliance monitoring (WAC 173-340-720(10)] uses a single numerical value as the cleanup standard, to which site data is compared. To treat background-based cleanup levels as constants (known without error) will make it more difficult to simultaneously achieve a desirable (low) false positive error rate and a high statistical power to detect residual contamination if background data sets are highly variable (i.e. highly skewed distributions). Alternative distribution testing methods (e.g. the Wilcoxon Rank Sum test and Quantile test) should be specified in WAC 173-340-720(10)(d)(iii).

390 26. **WAC 173-340-740(1)(a):** The requirements in this section appear to allow only two types of exposure scenarios: unrestricted residential use or industrial use. What about use of modified Method B for land uses such as commercial or recreational? These scenarios may include engineered/institutional controls on the land. Therefore, either this section should state that soil cleanup standards under modified Method B can allow contamination to be left above unrestricted land use levels in alternative land use scenarios or (preferably) another section should be added after this section acknowledging that restrictions on land use are acceptable under certain circumstances.

391 27. **WAC 173-340-740(7)(d)(i)(B), Last sentence:** Editorial comment: sentence should read ". . whether the data **are** lognormally or normally distributed."

392 28. **WAC 173-340-745(5)(b)(ii):** This section requires that contaminants left in industrial soil not cause groundwater to exceed cleanup levels established under WAC 173-340-720. Which –720 groundwater cleanup levels are being referred to, Method C levels (corresponding to use of Method C for establishing industrial soil standards) or Method B levels (unless, under the –720 criteria, Method C levels can be justified)? The language in WAC 173-340-745(b)(iv) appears to imply that the latter situation may apply, but it seems natural to associate Method C industrial soil cleanup levels with the Method C groundwater cleanup levels. Please clarify.

393 29. **WAC 173-340-747:** This section establishes a variety of methods for establishing soil cleanup concentrations for groundwater protection: two "standard Method B" methods and four "modified Method B" methods. Although there are certain identified limitations regarding use of some of the methods, it is generally unclear which methods are to be used, and who makes the decision. For example, under standard Method B, is the most stringent soil cleanup concentration derived from the two allowable methods used? Or can either method be used? In the latter case, who decides which method to apply? Ecology or the regulated entity? In a similar manner, if methods under both the standard or modified approach could be utilized for a constituent, what are the criteria for selecting which method to use, and who makes the decision? The regulation should be revised to address these issues and reproposed for public comment before finalization.

394 30. **WAC 173-340-747(3)(a), Equation 747-1:** The information provided to implement Equation 747-1 has serious deficiencies. Table 747-1 provides Distribution Coefficients (Kd) for 10 metals. What Distribution Coefficients should be used for other metals? Antimony, barium, manganese, and silver are examples of metals that are important in the environment for which no Distribution Coefficients are defined.

395 The Henry's Law Constant used in Equation 747-1 should be defined in WAC 173-340-200 and discussed with other parameters in WAC 173-340-700. As it stands it is a "mystery number" to those who are regulated by MTCA.

396 The value to be used for Henry's Law Constant for metals in Equation 747-1 is not defined. Presumably the value would be zero, but it should be defined.

397 What groundwater cleanup levels should be used for lead (Pb) and mercury (Hg) to implement WAC 173-340-747 using Equation 747-1? Lead and mercury do not have values of Reference Dose or Cancer Potency Factor needed to implement Equation 720-1 or Equation 720-2 in WAC 173-340-720.

398 31. **WAC 173-340-747(3)(a)(i), Equation 747-2:** Several important organic chemicals have no value of Koc to use to calculate the Distribution Coefficient (Kd) using this equation. For example, what value of Koc should be used to calculate Kd for ethylene glycol, methanol, or methyl isobutyl ketone?

399 32. **WAC 173-340-747(3)(b):** Guidance should be included on the types and number of samples to be used when employing the leach test procedure.

400 33. **WAC 173-340-747(3)(b)(ii)(A and B):** Most of the metals listed in these sections have TCLP detection limits far above the MTCA B groundwater standards. For example, a typical TCLP detection limit for cadmium is 1 mg/l; the Method B groundwater limit 0.008mg/L. The situation for arsenic is much more disparate. Either these criteria should be revised or these metals should be excluded from the leach tests.

401 34. **WAC 173-340-747(4)(b):** Although the increased flexibility allowed by the proposed rule is a welcome alternative to the "100X" rule, there is little guidance on sample requirements for determining site-specific parameters. Areas with complex hydrology would require many more samples than areas with relatively homogeneous stratigraphy. Once the data are collected, what statistic will be used (average, upper or upper bound?) to represent the area?

402 35. **WAC 173-340-7490(3) Goal:** This paragraph is vague in its definition of significant adverse effects to species other than the threatened and endangered species. It appears that some undefined, sub-lethal effect to an individual could be construed as a significant effect that could drive a cleanup standard. Please define what is meant and which laws are being referred to in the statement "other applicable laws that extend protection to individuals of a species."

403 36. **WAC 173-340-7491(1)(c)(iii):** Reference is made to Table 6. There is no Table 6 supporting these sections. Is table 749-1 the intended table?

404 37. **WAC 173-340-7492 (2)(c)(i):** Reference is made to Table 7. Should this say "Table 749-2?"

405 38. **WAC 173-340-7493(2)(a)(i):** At the end of this paragraph is a caution statement that says the ecological indicator concentrations found in Table 749-3 are "not cleanup levels." Later in this subsection under 7493 (3), it says that the concentrations given in Table 749-3 "may be used as the cleanup levels" at the discretion of the person conducting the evaluation. Explain the inconsistency.

406 39. **WAC 173-340-7493(3):** An additional subsection is appropriate to help guide the evaluation and use of the results obtained. For instance, the ecological relevance of the concentrations of contaminants to the local ecosystem and the potential ecological effects of the cleanup should be weighed. A cleanup action may cause more damage than it resolves and alternate mechanisms for dealing with the site may be preferable. Performing mitigation at another site, rather than remediating relatively low levels at the subject site, could be more useful to the habitat and wildlife. Innovative ways to approach each problem should be encouraged.

407 40. **WAC 173-340-7493(3)(b)(i):** Revise the last sentence to read as follows: "Other bioassay tests approved by the department may also be used *and may be preferable for ecological reasons (e.g., soil types at the site are unsuitable for the earthworms).*"

408 41. **WAC 173-340-7493(7):** Table 9 is referred to twice in this subsection when it should be Table 749-4.

409 42. **WAC 173-340-7493(7)(f):** This paragraph says that to account for uncertainties associated with substitute receptor species, Ecology may require use of toxicity reference values based on no observed adverse effects levels (NOAELs), use of uncertainty factors to account for extrapolations of toxicity or exposure parameter values between species, or use of a hazard index approach to account for additive toxic effects. This appears to be the catchall statement that says if Ecology doesn't like the substitute values or species proposed, (even though they are just as valid and substantiated as the ones they selected in their model) they will force the potentially liable person to comply with the food-web model provided. If any of these measures (NOAELs, uncertainty factors, or hazard index) are applied, the resultant cleanup level will be lowered by at least a factor of 10; making the whole exercise of proposing surrogate species and input parameters futile. This represents a double standard because Ecology didn't apply these extra-conservative measures (which are not scientifically based) in the development of their standard food-web model and shouldn't be allowed to impose them just because they don't like the results of a proposed modified model. Item "f" should be deleted from this subsection.

410 43. **WAC 173-340-7494(2):** This paragraph is unclear. It is not clear what is meant by "protection of wildlife for industrial and commercial land uses, and upon protection of plants and animals for other land uses." Is there a difference between the reference to wildlife and the reference to plants and animals? It would be more clear to say "Table 749-2 shall be based on protection of wildlife and terrestrial receptors for commercial land uses and other land uses."

411 44. **WAC 173-340-990:** The tables in this section must be presented in numerical sequence with correct numbers. However, it would be more user-friendly to present the tables in the sections where they are actually used. This would also eliminate the current confusion of having the small tables in the text of the sections and the large tables located elsewhere. This has caused Tables 747-3 and 747-4 to be incorrectly numbered as 747-1 and 747-2 in WAC 173-340-990.

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45. **WAC 173-340-990, Table 720-1, "Method A Cleanup Levels for Ground Water," lead entry:** The lead entry in this table (5 micrograms/liter) is, according to the footnote, based on federal law at 40 CFR 141.51. The MCLG for lead in 40 CFR 141.51 is zero based on *carcinogenic* properties. According to WAC 173-340-720(3)(b)(ii)(B), only *noncarcinogenic* MCLG values are to be used in establishing Method A limits. There is no MCL for lead. There is, however, an action level of 15 micrograms/liter established in 40 CFR 141 Subpart I. State Department of Health regulations at WAC 246-290 reflect the 40 CFR 141 Subpart I standards. To be consistent with the stated criteria for establishing Method A values, Ecology should not use the 0 micrograms/liter MCLG based on carcinogenic properties, but instead should use the 15 micrograms/liter action level.

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46. **WAC 173-340-990, Table 740-1, "Method A Soil Cleanup Levels for Unrestricted Land Uses," lead entry: The** 250 mg/kg cleanup level for lead is purportedly based on "preventing unacceptable blood lead levels." This appears to be an outdated value. Ecology has used EPA's Integrated Exposure Uptake Biokinetic (IEKBK) Model to establish lead cleanup levels for MTCA cleanups. (E.g., see memo, Mr. Mike Blum (Ecology) to Messrs. Vern Moore (Weyerhaeuser Company) and Jack Frazier (DuPont Company), *Re: Residential Soil-Lead Cleanup Standards for Former DuPont Works Site*, dated October 1, 1997.) This model was specifically designed to identify levels of lead in the environment that could result in unacceptable blood lead levels in children (the most susceptible population). Using the conservative default values in the IEUBK model, a soil cleanup level of 353 mg/kg is derived for residential soil. This value should be reflected in Table A in lieu of the archaic 250 mg/kg cleanup level.

414

47. **WAC 173-340-990, Table 749-3:** The intended use of the plant and soil biota concentrations in Table 749-3 is unclear. Will Ecology choose to use the lowest concentration for a chemical in the table similar to the selection process for the reported concentration from the wildlife exposure model? If so, there needs to be an explanation of how the plant and soil biota concentrations were selected from the Oak Ridge documents, so the regulated community can assess the applicability of those values to their waste sites.

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DEPARTMENT OF THE NAVY
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5090
05ER/ 8597
14 January 2000

Washington State Department of Ecology
TCP Rule Revision
P. O. Box 47600
Olympia, Washington 98504-7600

Dear Committee Members:

SUBJECT: PROPOSED AMENDMENTS TO CHAPTER 173-340 WAC

Please find enclosed Navy review comments for the proposed amendments to Chapter 173-340 WAC, Model Toxics Control Act cleanup regulation dated November 1999. We appreciate the opportunity to participate in the review process and look forward to the responsiveness summary.

If you would like further information regarding the comments, recommendations or the technical references please contact Mike Allen at (360) 396-0002.

Sincerely,

P. R. VASICEK
Environmental Program Manager
By direction of the
Commanding Officer

Enclosure

Revised comments Recd by e-mail 1/14/00

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UNITED STATES NAVY ENGINEERING FIELD ACTIVITY NORTHWEST REVIEW COMMENTS ON STATE OF WASHINGTON DEPARTMENT OF ECOLOGY PROPOSED AMENDMENTS TO THE MODEL TOXICS CONTROL ACT (MTCA) CLEANUP REGULATIONS

The following comments result from our review of the revised Model Toxics Control Act (MTCA). Our comments on the proposed amendments are in the format requested by the Washington State Department of Ecology (Ecology). The WAC section number is first identified, followed by the comment. In some cases, general comments on a section are provided, followed by specific comments. Underlined text or crossed-out text represents our suggested revisions to text in the reviewed document. For the review of methods for defining background concentrations (WAC 173-340-709), general comments are provided with backup calculations included as Appendix A. The review of the sediment cleanup standards (WAC 173-340-760), are attached as Appendix B.

415

WAC 173-340-200—DEFINITIONS

Area Background

The definition of the term "area background" (page 106) would be more explanatory if it was instead "area anthropogenic background." Adding the word "anthropogenic" would emphasize that the definition applies to concentrations of hazardous substances resulting from *human* activities (that are unrelated to releases from the site).

As other portions of the proposed amendments to MTCA (i.e. the definition of natural background in WAC 173-340-200) as well as other Department of Ecology guidance documents recognize that both inorganic and organic chemicals, as well as radionuclides can be present at sites for reasons not associated with local human activity, we recommend a slight change in the wording of what we term the area anthropogenic background definition, to read as follows (recommended wording changes are underlined). As noted above, we are recommending transferring the discussion of PCBs and radionuclides from the definition of natural background to the definition of area background. The Ecology proposed text on PCBs and radionuclides is transferred essentially intact, with the exception of several minor wording changes. One of the wording changes is intended to address our concern regarding persistence of chemicals as a criterion for background organic chemicals. The other wording changes are editorial in nature so that the transferred text fits within the definition of area background.

"Area anthropogenic background" means the concentrations of hazardous substances, including inorganic and organic chemicals, and radionuclides, that are consistently present in the environment in the vicinity of a site which are the result of human activities unrelated to releases from that site. ~~Also,~~ For example, low concentrations of some ~~particularly persistent~~ organic compounds such as polychlorinated biphenyls (PCBs) can be found in surficial soils and sediment throughout much of the state due to global use of these hazardous substances. These low concentrations would be considered ~~natural~~ area background. Similarly, concentrations of various radionuclides ((~~which~~)) that are present at low concentrations throughout the state due to global distribution of fallout from bomb testing and nuclear accidents would be considered ~~natural~~ area background.

416 **Cohen's method**

To be technically correct, the definition of "Cohen's method" should be: "Cohen's method" means the maximum likelihood estimate of the mean and variance accounting for data... Cohen's method does not yield the maximum likelihood estimate of the standard deviation. Also, the two references provided for Cohen's method were written for readers with statistical training and may not be very useful for most readers of MTCA. We recommend adding the following more easily understood, description of Cohen's method:
Gilbert, R.O. 1987. *Statistical Methods for Environmental Pollution Monitoring*, pages 182-183, Van Nostrand Reinhold, New York (now published by Wiley & Sons, New York, 1997).

417 **Department**

Capitalize "Department of Ecology" in the definition, as it is the proper name of a governmental agency.

418 **Land's Method**

The two references provided in the proposed amendments (Land 1971 and Land 1975) are very technical and appropriate only for statisticians. We recommend adding the following, more easily understood reference for Land's Method:
Gilbert, R.O. 1987. *Statistical Methods for Environmental Pollution Monitoring*, pages 169-171, Van Nostrand Reinhold, New York (now published by Wiley & Sons, New York, 1997).

419 **MCL and MCLG**

It is not clear why the reference to any amendments or repromulgations of the MCLs or MCLGs have been removed from the definitions. If such an amendment or repromulgation were to occur, it is unclear how Ecology would handle that. One would assume that Ecology would want the most up-to-date information to be used to guide site cleanup standards.

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420 **Natural Attenuation**

The definition of "Natural Attenuation" is limited to soil and groundwater. Naturally occurring attenuation is also prevalent in air, surface water, and aquatic sediments (e.g., dispersion, dilution, biodegradation, etc.). The definition should be changed to include all environmental media.

421 **Natural Background**

For purposes of clarification and technical accuracy, we recommend a slight change in the wording of the definition of natural background. The point of clarification is to ensure that the definition recognizes that inorganic chemicals, as well as some organic chemicals and radionuclides, are naturally occurring and can be found naturally at sites. The point of technical accuracy is to clarify that not all organic compounds whose background levels can be quantified are either persistent or natural products. As suggested earlier, we recommend that the description of PCBs and radionuclides be moved from the definition of natural background into the definition of area background, and that the definition of natural background be revised to read as follows:

"Natural background" means the concentration of hazardous substance (which includes inorganic and organic chemicals, and radionuclides) consistently present in the environment that have not been influenced by localized human activities. For example, several metals naturally occur in the bedrock, sediments, and soils of Washington state due solely to the geologic processes that formed these materials, ~~and~~ The concentration of these metals would be considered natural background. Also, measurable concentrations of some organic chemicals, such as certain polycyclic aromatic hydrocarbons (PAHs), can be found in surficial soils and sediments throughout the state from naturally occurring processes, such as forest fires. These measurable concentrations would be considered natural background. Similarly, measurable concentrations of various radionuclides that are present in sediment, soil, and water throughout the state due solely to the geologic processes that formed these materials would be considered natural background. ~~Also, low concentrations of some particularly persistent organic compounds such as polychlorinated biphenyls (PCBs) can be found in surficial soils and sediment throughout much of the state due to global use of these hazardous substances. These low concentrations would be considered natural background. Similarly, concentrations of various radionuclides ((which)) that are present at low concentrations throughout the state due to global distribution of fallout from bomb testing and nuclear accidents would be considered natural background.~~

422 **Natural Biodegradation**

Change "man's intervention" to "human's intervention" to be consistent with the definition of "natural attenuation" and to ensure that MTCA is written in the most appropriate language.

423 **Remediation level (REL)**

The definition of does not make it clear whether the REL is a *mean* concentration or whether the REL is a value that cannot be exceeded by any *individual measurement.* That is, does REL refer to average concentrations or individual measurements?

424 **Site**

The definition of "site" includes the word "site", which makes it slightly unclear. This definition should be revisited for clarity.

425 **WAC 173-340-300(2)(B)(V) SITE DISCOVERY AND REPORTING**

This example should be clarified to state that illegally classified or unpermitted waste materials classified as hazardous waste should be reported.

426 **WAC 173-340-310(6)(a) Initial Investigation**

The decision of no further action by Ecology is very important for most site owners. It would be helpful if Ecology sent the owner or operator "no further action" letters without the owner or operator having to specifically request one.

427 **WAC 173-340-330(7)(a)(iii)(D) Removing Sites from the List**

This section states that a site where the selected cleanup action includes containment may be removed from the hazardous sites list if the institutional controls are in place and have been demonstrated to be effective in protecting public health and the environment. The determination of effectiveness is made when the institutional controls are selected as part of the cleanup action. It is unclear how or when the site owner must demonstrate the effectiveness of institutional controls to achieve site delisting.

428 **WAC 173-340-350(9) Minimum Requirements for Cleanup Actions**

This section is buried within WAC 173-340-350 Remedial Investigation and Feasibility Study. Suggest creating a new section for the minimum requirements for cleanup actions and referring to them.

429 **WAC 173-340-350(10) Evaluation Criteria**

Clarify that the evaluation criteria are not listed in the order of importance.

reply 19

430

WAC 173-340-350(9)(e)(ii) Institutional Controls

This section uses the phrase "technically possible", but we suggest "technically practicable" is the more appropriate wording. We understand that Ecology does not wish to promote institutional controls as a preferred cleanup method at every site, yet it is precisely the sites where it is "technically impracticable" to use other methods that institutional controls are very important.

431

WAC 173-340-350(9)(c) Groundwater Cleanup Actions

This section appears to require LNAPL removal ". . .using normally accepted engineering practices" for non-permanent groundwater cleanup actions. Source containment is allowed for DNAPL that is not recoverable after expending "reasonable efforts," but does not appear to be allowed for LNAPL. The language in this section also appears to be in conflict with WAC 173-340-450(4) which requires free-phase product removal ". . .to the maximum extent practicable. . ." at UST sites.

It is highly desirable to remove NAPL sources to preclude ongoing sources of constituents in or on the groundwater. However, experience has shown that this is not technically feasible in some cases and not practicable in others. The ability to reasonably remove LNAPL depends largely on the site-specific geology and hydrogeology. Highly transmissive aquifers are not typically conducive to LNAPL removal using existing technologies. Adequate protection can be achieved using a combination of LNAPL removal or treatment and containment. The apparent requirement to remove all LNAPL from groundwater is neither justified nor warranted to protect human health and the environment. This section should be changed to allow for use of alternatives other than LNAPL removal when such removal is not technically feasible, practicable, or necessary to protect human health and the environment.

432

WAC 173-340-440(5) Institutional Controls

This section uses the phrase "technically possible", but we suggest "technically practicable" is the more appropriate wording. We understand that Ecology does not wish to promote institutional controls as a preferred cleanup method at every site, yet it is precisely the sites where it is "technically impracticable" to use other methods that institutional controls are very important.

433

WAC 173-340-440(8)(b)(ii)

We recommend that Ecology include in this section that an acceptable alternative to a restrictive covenant is an Institutional Controls Management Plan (ICMP) that will be implemented and will remain with the property when transferred to other agencies.

434 **WAC 173-340-515—Independent Remedial Actions**

No mention was found in the revised regulations of Ecology's Voluntary Cleanup Program. This omission seems curious because much of the revised regulations read like guidelines. Guidance regarding the benefits and procedures of the Voluntary Cleanup Program should be included in this section.

435 **WAC 173-340-600—PUBLIC NOTICE AND PARTICIPATION**

WAC 173-340-600(1)

The public participation plan should include development of a mailing list of interested parties.

436 **WAC 173-340-600(3)(b)**

Change this section to "Addressing anticipated public concerns....."

437 **WAC 173-340-600(4)(e)**

Add a provision to extend for an additional 15 days if requested by the public.

438 **WAC 173-340-600(7)**

Insert a reference to electronic availability and a web site address.

439 **WAC 173-340-600(9)(a)**

The last half of the second sentence should read: "...the level of public concern, as determined via the early planning process (see (b), above) and the risks posed by the contaminants found at a facility."

440 **WAC 173-340-600(9)(g)(iii)**

Would these "questionnaires" fall under the federal paper reduction law for those government agencies involved? Also add a reference to WSR90-08-086 concerning citizen's advisory committees.

441 **WAC 173-340-600(9)(g)(iv)**

Reference should be to subsection (6) instead of (5).

442 **WAC 173-340-600(9)(g)(vii)**

Add "must be included." at the end of the sentence.

443 **WAC 173-340-600(10)(c)(iv)**

Add an explanation on how to request that a public meeting be held.

444 **WAC 173-340-600(12)**

Clarify to whom this mailing goes.

445 **WAC 173-340-600(13)(c)(ii)**

Revise text to read: "If available, identify the department's proposed selected cleanup actions...."

WAC 173-340-600(14)

446 Add reference to public participation requirements presented in WAC 173-340-600(9).

447 **WAC 173-340-600(14)(b)(iii)**

Revise text to read: "The public comment period shall run for at least 30 days from the publish date of the public notice."

448 **WAC 173-340-600(15)(b)**

Include how far in advance of a cleanup action the public notice should be run.

449 **WAC 173-340-600(16)(a)**

Add that the notice should identify the area of potential impact, including any residential/business areas. In addition, the notice should include what kind of impact might affect these areas, e.g., noise, air quality, health hazards, and others.

450 **WAC 173-340-600(18)**

Substitute "concerning" for "on" the Model Toxics...

451 **WAC 173-340-700—OVERVIEW OF CLEANUP STANDARDS**

WAC 173-340-700(5)(a) Method A: ARARs and Tables

The first sentence refers the reader to WAC 173-340-130 for a definition of a routine cleanup action. The definition has been stricken from section –130 and placed in section -120 (Definitions) in the proposed amendments.

452 **WAC 173-340-700(5)(b) Method B: ((~~Standard~~)) Universal method**

This section and others, state that cleanup levels for individual hazardous substances must (or shall) be adjusted downward for additive health effects when multiple hazardous substances are present. Because the MTCA regulations define the word "must" and "shall" as mandatory requirements (see section –210), this language implies that the cleanup levels will always be adjusted downward when there are multiple hazardous substances. This is not necessarily the case. The cleanup levels for non-carcinogens only need to be adjusted downward when the cumulative hazard quotient for compounds with similar toxic effects exceeds 1. Cleanup levels for carcinogens only need to be adjusted downward when the cumulative cancer risk exceeds 1×10^{-5}. For example, if you have two carcinogens, each with a cancer risk of 1×10^{-6}, the cumulative cancer risk is 2×10^{-6}. No adjustment of the individual cleanup levels is necessary because the cumulative cancer risk does not exceed 1×10^{-5} and the risk for both individual substances does not exceed 1×10^{-6}. The proposed language should be clarified to reflect instances where downward adjustment of cleanup levels is not mandatory.
The same comment is made for WAC 173-340-; –700(5)(c); - 705(4); -706(4); –708(5); -720(8)(a); -730(5)(a); and -740(5)(a)

453 The third paragraph of this section identifies the acceptable risk range for both standard and modified Method B, MTCA. This is in contrast with USEPA risk management strategy stated in OSWER Directive 9355.0-30; 1991. This directive states that under most conditions an "acceptable" target risk goal is 1E-4. MTCA states that the more conservative risk level(s) of either 1E-6 or 1E-5 (depending on the number of chemicals of concern detected at the site) is acceptable. A difference of one or two orders of magnitude between the USEPA and MTCA risk management strategy is significant. The MTCA should elaborate and provide supporting information explaining why a 1E-4 risk level (as adopted by USEPA) is not health protective.

454 **WAC 173-340-700(6)(d) Natural background and analytical considerations.**

The proposed MTCA revision states the following:

454 cont.

> "In some cases, cleanup levels calculated using the methods specified in this chapter are less than natural background levels or levels that can be reliably measured. In those situations, the cleanup level shall be established at a concentration equal to the practical quantitation limit or natural background concentration."

This statement requires additional clarification. It is possible to have a quantitation limit that is below the natural background concentration. In this case, it is not clear whether the MTCA intends cleanup to target levels below the background concentration. It is not possible to remediate below naturally occurring levels. Moreover, according to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) naturally occurring background chemicals *cannot* be remediated. CERCLA [Section 104(3)(a)] states:

> *"The President shall not provide for a removal or remediation action under this section in response to a release or threat of a release of a naturally occurring substance in its unaltered form, or altered solely through naturally occurring processes or phenomena, from a location where it is naturally found."*

455 Additionally, the section references WAC 173-340-707. The referenced section could not be found in the proposed revision document.

456 Regarding the use of the "practical quantitation limit," the MTCA should provide guidance or a reference for applying the rule. Because the practical quantitation limit is typically determined using a statistical approach, there is a built-in, specified, small probability of a false positive decision. That is, when the true concentration of a physical sample is equal to the limit, there is a small probability that the measurement of that sample will be greater than the limit. Hence, there is a built-in probability that a site will be incorrectly declared to be not in compliance if that decision is made by comparing individual measurements to the practical quantitation limit. If the conclusion of non-compliance is made based upon one (or more) measurements being greater than the limit, then the probability that the site will be incorrectly declared to exceed the cleanup limit increases to 1 (100%) as the number of individual measurements compared to the limit becomes large. The magnitude of this problem can be reduced by using a decision rule that allows for more than one measurement to exceed the practical quantitation limit before the decision is made that the site exceeds the cleanup level. For example, see Berthouex, P.M. 1991, "A Simple Rule for Judging Compliance Using Highly Censored Samples," *Research Journal of the Water Pollution Control Federation*, Volume 63, Number 6, pages 880-886.

457 **WAC 173-340-700(8)**

Because of the complexity of the development of site-specific Method B and C cleanup levels, formal technical guidance from Ecology is necessary to implement the rule. A technical guidance document should be developed and submitted with provisions for public comment and review.

458 The definitions of cleanup levels, cleanup standards, cleanup actions, and remediation levels are still confusing to the reader. Clarification of these important definitions is requested to help avoid potential confusion.

459 **WAC 173-340-702—GENERAL POLICIES**

WAC 173-340-702(10) Relationship To Federal Cleanup Law

Not all of the MTCA sections listed may apply to a particular response action. Therefore, this section should state that the requirements are potential applicable requirements.

460 **WAC 173-340-702(12) Applicability of New Cleanup Levels**

Although revisions to MTCA cleanup standards may not result in a significant number of previously remediated sites to be revisited by Ecology, these changes will cause serious problems with real property transfers or lease. We anticipate that many of these transactions will require re-submittal of cleanup documents for updated "No Further Action" determinations under the provisions of the revised MTCA regulation. We suggest that Ecology issue guidance on evaluating the protectiveness of previously completed cleanup actions with respect to revised MTCA cleanup standards. For example, many of the Method A and B soil cleanup levels that have become more stringent are based on the soil to groundwater pathway. At many sites, it can be demonstrated that soil cleanups are still protective under the new MTCA provisions by verifying that site groundwater is not impacted.

461 **WAC 173-340-702(12)(a) and (b)**

This first part of paragraph (a) has mixed topics when it discusses both cleanups under a decree or consent order, and independent remedial actions. The section should be clarified by using separate paragraphs for each different cleanup process. Or, add to paragraph (b) a sentence stating the fact that a cleanup action implemented pursuant to an order or decree is binding upon the Department and can only be revisited under the terms of the agreement. This legal fact is one of the prime benefits of cleanups performed under an order or decree.

462 **WAC 173-340-708—HUMAN HEALTH RISK ASSESSMENT PROCEDURES**

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General Comments

The proposed MTCA revisions allow for a greater freedom in using risk assessment to determine remediation levels but not cleanup levels. Cleanup levels are still restricted to either residential scenarios under Method B or industrial scenarios under Method C and modifications to the defaults are not allowed. Although site-specific exposure pathways are now allowed to calculate remediation levels, there is still no commitment to fully evaluate a site by developing a site-specific conceptual site model that determines the exposed populations and pathways representative of the site (site specific exposure scenarios). The proposed MTCA revisions note that a conceptual site model "may be used" -708 (3)(e), but the text of the rest of the standard would not allow full site-specific evaluation. This is inconsistent with -350(7)(b)(ii), which requires the development of a site-specific conceptual site model as part of the remedial investigation/feasibility study (RI/FS) process. The site-specific conceptual site model approach is required by the U.S. Environmental Protection Agency (EPA) risk assessment procedures (USEPA 1989).

462 cont.

We consider the limitations on allowable modifications in risk assessment an unnecessary restriction on the full and valuable use of this tool.

463

The differentiation between "standard" and "modified" Method B is confusing. Why have two sets of formulas and then state that either may be used? The approaches and formulas are inconsistent between the two sets of equations, see specific comments on these sections in the text below. We do not consider that the standard Method B is necessary or provides any "value-added" to MTCA. One set of equations and defaults would result in sufficiently protective cleanup and remediation levels.

464

WAC 173-340-708(2) Selection of indicator hazardous substances.

This section presents specific criteria that should be evaluated to eliminate chemicals from the risk assessment to identify indicator hazardous chemicals detected at the site. The criteria listed are excellent for narrowing the list. However, the list does not reference eliminating essential nutrients detected at a hazardous waste site as recommended by USEPA risk assessment guidance (USEPA 1989). We recommend adding, from the EPA guidance (USEPA 1989a), the following:

Calcium	Manganese
Phosphorus	Flouride
Magnesium	Sodium
Iron	Chromium III
Zinc	Potassium
Iodine	Chloride
Copper	Nickel
Cobalt	

The National Academy of Sciences/National Research Council has calculated acceptable daily intake levels for essential nutrients. When the chemical concentration for essential nutrients is at

or below the corresponding daily acceptable level, they should be eliminated from further consideration.

465

WAC 173-340-708(4) Reasonable Maximum Exposure

The definition of the Reasonable Maximum Exposure (RME) requires additional definition and clarification.

The rule developed in the MTCA conflicts with guidance developed and provided by USEPA. In the MTCA it is not clear how the RME is calculated for potential exposure pathways for "individuals or groups of individuals" and whether the same caveats, developed by EPA (USEPA 1991a and 1989a) regarding aggregating risks from different exposure pathways should apply.

The proposed MTCA revisions frequently mention combined effects from individual hazardous substances and the cumulative effects of combined exposure pathways. There should be clarification of exposure to individuals or groups of individuals in terms of exposure scenarios. We recommend that the MTCA include clear language explaining that exposure pathways should not automatically be combined, but should represent the realistic RME exposure scenarios developed for a site.

466

WAC 173-340-708(6)(b)

The formulas provided for "standard" Method B include only one pathway; the "modified" formulas include only two pathways. There is no statement or references provided as to acceptable sources of formulas for the additional pathways.

467

WAC 173-340-708(9) Bioconcentration Factors.

The concept of adjusting the concentration term to take into account natural attenuation is not addressed.

This section describes the importance of evaluating conditions where the chemical concentration can be concentrated. The converse is true and should be presented as a site-specific tool. The chemical concentration for many organic chemicals is reduced through natural attenuation over time. This is particularly important when evaluating exposures of 25 to 30 when the chemical is only expected to persist for only a fraction of that time. For example, benzene (typically associated with petroleum release) is a short-lived chemical that is rapidly detoxified. In this example, it would be unrealistic to assume a constant residential exposure to unchanging benzene for the entire 30 years. In the case of benzene, the concentration would typically decline until it reached negligible levels in 5 to 10 years. The proposed MTCA revisions should include a section that allows natural attenuation to be factored into the risk evaluations with regard to specific site conditions and for those chemicals that are rapidly detoxified under natural conditions.

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468

WAC 173-340-708(9)(a) Bioconcentration factors

Please rephrase the last sentence in this section as follows: If the department determines that a bioconcentration factor is appropriate for a specific hazardous substance, then appropriate EPA documents, literature sources or empirical information may be used to determine a bioconcentration factor.

469

WAC 173-340-708(10)(a)

EPA lists national data for many of the default values that would be applicable at many sites (USEPA 1997a). National data are free from the "professional judgment" bias of many risk assessments and are easily obtainable.

470

WAC 173-340-708(10)(b)

Fish consumption rates can vary enormously depending on the specific population of concern. Good data are available on different consumption rates for a wide variety of populations and more are becoming available. Examples include: ADEC 1998; Toy et al 1996; USEPA 1989b, 1997a; and APEN 1998. We recommend adding a fish consumption rate to the list of default values for exposure parameters that may be changed where there is adequate scientific data (WAC 173-340-708(10)(10)(i)(B)).

471

WAC 173-340-708(10)(c)

This approach indicates that the defaults would always have to be calculated in order to evaluate whether the non-default numbers were "significantly" higher. In addition, it creates the potential that one would have to do the risk assessment twice—one time using defaults and non-defaults and a second time looking at any other pathways that were not addressed the first time. If other pathways were necessary to adequately characterize risk, more data might be necessary, thus delaying the cleanup process. Use of a conceptual site model (CSM) approach as a starting point as described in USEPA 1989a would already have identified all the applicable pathways and created the framework for assessing which pathways should be evaluated quantitatively and which qualitatively. If the correct pathways and exposure parameters have been selected for quantitative analysis, then risk-based remediation levels would be appropriately protective and it would be irrelevant if the defaults resulted in a higher remediation concentration. Double calculations would then be unnecessary.

472 **WAC 173-340-709—METHODS FOR DEFINING BACKGROUND CONCENTRATIONS**

The Navy is recommending substantial changes to the proposed method for determining background concentrations in environmental media. We believe that as written, the section introduces considerable statistical bias into the determination of which sites exceed either area or natural background. This bias, if not corrected, will result in substantially elevated false positive results. In other words, concentrations of hazardous substances at many sites will be determined to exceed background under the proposed methodology when, if appropriate statistical methods were used, a determination would be made that hazardous substances do not exceed background.

WAC 173-340-709, as written, will require performance of remedial investigations for the purpose of selecting a cleanup action at many sites which, if appropriate statistical procedures were used, could be shown to have concentrations of hazardous substances that are within either natural or area background. Sites containing only background concentrations of hazardous substances should not require remedial investigations. The end result of the WAC 173-340-709 proposed statistical method for defining background concentrations would require remediation of sites that can be statistically documented to contain only background concentrations of hazardous substances. This is not an acceptable conclusion of a site-to-background comparison. Such a conclusion would contradict Ecology's own proposed MTCA revisions at, to list three examples, WAC 173-340-710 (applicable local, state, and federal laws), WAC 173-340-708(6)(e), and WAC 173-340-720(8)(c) (groundwater cleanup standards). In the first example, requiring a cleanup of hazardous substances at or below natural background levels is prohibited under CERCLA, Section 104(3)(A). In the second and third examples, groundwater cleanup levels cannot be at levels below natural background. A proposed alternate approach is included as Appendix A.

473 **WAC 173-340-720 GROUND WATER CLEANUP STANDARDS**

WAC 173-340-720(3)(a)(ii)(C) Method A Groundwater Cleanup Levels For Drinking Water Aquifers Not Flowing Into Nearby Surface Water

Why delete the secondary maximum contaminant levels (MCLs) as an applicable requirement? A number of chemicals (such as zinc and manganese) only have secondary levels and these levels may be applicable to some groundwater situations.

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474

WAC 173-340-720(3)(b)(iii) Method A

These paragraphs stipulate cleanup of indicator hazardous substances to natural background or the practical quantitation limit for constituents that are not in the Method A Tables or have no value in applicable state and federal law. This requirement is not necessary or appropriate for most hazardous constituents. Method B calculations will often provide conservative cleanup levels based on residential use assumptions for constituents that are not listed on the Method A Tables and that have no applicable value in state and federal law. We recommend that the proposed MTCA revisions in this section include a statement for an option to use the Method B cleanup level approach for those constituents that are not on the Method A Tables and have no applicable value in state and federal law. The same comment applies to sections: **730(2)(b)(iii); -740(2)(b)(iii); -745(3)(b)(iii); -750(2)(b)(ii).**

475

WAC173-340-720(4)(b)(ii)(C) Petroleum Mixtures

The equation (720-3) needs clarification on the specific "TPH (total petroleum hydrocarbon) components" included in factor $F_{(i)}$. What specifically is meant by "petroleum fractions and volatile hazardous substances" (WAC 173-340-720(4)(b)(ii)(C) ? Are these the different equivalent carbon numbers reported in the volatile petroleum hydrocarbons (VPH) and extractable petroleum hydrocarbons (EPH) analytical methods? Clarification also needs to be added on selection of appropriate surrogate compounds to be used for assigning toxicity factors (RfDs) to these "TPH components."

476

WAC 173-340-720(4)(b)(iii), Free Product Limitation

This section states that the solubility limit for hazardous substances may be used to determine compliance with the no free product limitation. Although this may be true in some cases, hydrophobic compounds (e.g., PCB's, cPAHs, and dioxins) are often detected in groundwater samples at concentrations exceeding their respective aqueous solubility due to the presence of suspended particulates. Given their extremely low solubities, it does not require high levels of suspended particulates to cause exceedences of hydrophobic compound solubility limits. Exceedence of solubility limits for these hydrophobic compounds is not a good indicator for the presence of free phase product.

477

WAC 173-340-720(4)(c)(iii) Modified Method B Ground Water Cleanup Levels

The toxicity equivalency factor procedures for dioxins, dibenzofurans, and polycyclic aromatic hydrocarbons are suitable for standard Method B and C. We suggest using them as the standard, as is done by EPA and many states across the country, rather than relegating this scientifically acceptable approach to the "modified Method B and C".

478 **WAC 173-340-720(6)(b)(v)**

The provision that institutional controls be implemented to prevent the use of the contaminated groundwater for drinking water appears unnecessary. This section only applies to groundwater that has been deemed non-potable or extremely unlikely to be potable at any point in the future.

479 **WAC 173-340-720(8)(b)**

For some chemicals (notably arsenic) the risk-based cleanup level based on drinking, the water is considerably below an MCL. Under this provision, one would be required to use a risk-based concentration for cleanup that may be lower than the chemical concentration in municipally supplied water people are actually drinking.

This inconsistency between Federal and State requirements as related to drinking water under SDWA and MTCA should be clarified. Ecology should provide specific guidance on the rationale for using risk-bound criteria under MTCA, which are stricter than the MCL for the same exposure scenario.

480 **WAC 173-340-720(9)(c) Groundwater Conditional Point of Compliance**

The first sentence in this paragraph should be amended to state ". . .the department may approve a conditional point of compliance that shall be as close as practicable to the source of hazardous substances, not to exceed the property boundary, except as provided in section (d) of this section." As the sentence is currently written, it erroneously gives the reader the impression that a conditional point of compliance is never allowed to exceed the property boundary.

481 **WAC 173-340-720(9)(d)(ii) Off Site Point of Compliance**

This section requires the PLP to notify potentially affected property owners and resource stakeholders, and receive their permission before the department will approve an off-site point of compliance when the source site is not immediately adjacent to the receiving surface water. We recommend that the section be reworded so that Ecology's approval of an off-site point of compliance does not have a requirement to seek and obtain permission from downgradient property owners. The following is supporting rationale:

It is appropriate to notify downgradient property owners and potentially affected stakeholders when establishing an off-site point of compliance and seeks their comments. However, it is not appropriate to require that they give permission to the off-site point of compliance considering the following factors:

> An off-site point of compliance would not be appropriate if allowing such would adversely affect human health and the environment to potentially affected property owners/stakeholders;

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481 cont.

Groundwater is defined as "waters of the state" (Chapter 90.48 RCW) and is owned by the citizens of Washington State and not by the owners of the land;

The "Plume Clause" absolves property owners of liability under the MTCA as long as they can demonstrate that the contamination is solely the result of migration with groundwater and they have not caused or contributed to a release of the hazardous substance.

To approve an off-site point of compliance, the department would need to be convinced that doing so would not adversely affect downgradient property owners (e.g., migration of volatile constituents from the groundwater to a building located above the plume). Property owners do not own state groundwater and they have no liability for groundwater contamination they did not cause or contribute to. Requiring permission from downgradient property owners and stakeholders is inappropriate and would result in delay of cleanups. It is also likely that certain property owners would not give permission without monitory compensation from the PLP or some property owners may just refuse to give permission and not provide a reason for their decision. Note also that permission from downgradient property owners or stakeholders is not required in sections (i) and (iii) of this section.

482

WAC 173-340-720(10)(b) Compliance monitoring

This section states that groundwater analyses shall be conducted on unfiltered groundwater unless it is not possible to collect low turbidity samples. Another provision should be made for samples being analyzed for metals and compared to surface water criteria. Most of the ambient surface water criteria for metals are reported on a dissolved basis (per WAC 173-201A). Same comment applies to -730(7)(c) Surface Water Analyses.

483

Section WAC173-340-720(10)(c)(iii) Compliance monitoring

This section states (page 172) that statistical methods used shall be appropriate for the distribution of sampling data for each hazardous substance. However, sometimes it is not possible or practical to establish with sufficient confidence which distribution is most appropriate. MTCA should acknowledge that at some sites it might not be possible to determine the distribution with confidence, in which case nonparametric (distribution-free) statistical methods may be used.

484 **WAC 173-340-720(10)(c)(v)(B) Compliance monitoring**

This section states (page 172) that for cleanup levels based on chronic or carcinogenic threats, the true mean concentration shall be used to evaluate compliance with ground water cleanup levels. While the mean is a reasonable statistical parameter for making cleanup decisions for chronic or carcinogenic threats, the true mean is never known. Hence, the operational decision rule is always based on some function of the estimated mean based on measurements. That is, the estimated mean, not the true mean, is used to evaluate compliance with cleanup levels.

485 **WAC 173-340-720(10)(d) Compliance monitoring**

This section (page 172) provides a suite of statistical procedures to be used when data analysis procedures for evaluating compliance are not specified in an applicable state or federal law. However, the methods provided have serious flaws. Although (10)(d)(iii) allows for the use of other statistical methods approved by the department, the methods specified in (10)(d)(i) and (10)(d)(ii) may be used simply because they are listed in MTCA. In (10)(d)(i)(A), it is stated that Land's method should be used to obtain an upper 95% confidence limit on the mean if the data are lognormally distributed. However, the EPA has conducted simulation studies and concluded that Land's method resulted in more than the specified (allowed) 5% chance of making a false positive decision (incorrectly concluding that action should not be taken) (EPA 1996b). In another publication (EPA 1995), EPA concluded that Land's method could give 95% upper confidence limits that were too high, and that the method should not be used unless the data are lognormally distributed and the number of samples is at least 50. This latter EPA publication recommended the use of alternative statistical methods. It would seem prudent for MTCA to specifically state that the burden of proof is on demonstrating that Land's method (as well as any other proposed method) is appropriate for the data at that site before it can be used. That is, MTCA should not consider Land's method to be the default procedure for estimating upper confidence limits.

486 **WAC 173-340-720(10)(d)(i)(A) Compliance monitoring**

Use of Land's method, specifically use of the H-statistic, to calculate a 95 percent upper confidence limit (UCL) for lognormally distributed data is no longer recommended by the EPA (USEPA 1997b) as a valid statistical approach. In-depth analysis by statisticians regarding use of the H-statistic method found that it over-predicted the UCL, particularly when the coefficient of variation exceeded one and the sample sizes were less than 30. For small sample sizes, a UCL calculated using the H-statistic resulted in a concentration that exceeded the 95th percentile value of the distribution. The EPA (1997b) expressed concern that the use of the H-statistic could result in either unnecessary cleanup or in hiding contamination, depending on what was being calculated. They concluded that the H-statistic was not a good predictor of the upper limit of the mean and recommended several other methods for both normal, lognormal, and neither normal nor lognormal distributed data. We draw your attention to the reference and the additional papers cited in the reference for details and recommend revision of this section to account for the EPA's concern.

reply 19

WAC173-340-720(10)(d)(i)(B) Compliance monitoring

487 This section states (page 172) that data shall be assumed to be lognormally distributed unless this assumption is rejected by a statistical test, and that if a lognormal distribution is inappropriate, data shall be assumed to be normally distributed unless this assumption is rejected by a statistical test. As discussed in preceding comments, the lognormal or normal distributions may not be rejected by the test only because a sufficient number of data were not obtained for use in the test.

488 **WAC173-340-720(10)(d)(ii) Compliance monitoring**

This section states that a parametric test for percentiles based on tolerance intervals may be used to evaluate compliance with a ground water cleanup level. It is also stated that the percentile used should be 0.50. Was it intended that MCTA indicate that an upper tolerance *limit* rather than a tolerance *interval* should be used? If so, then one would compute the upper tolerance limit for the ground water data for a well and see if it is less than the specified cleanup level. For example, one could compute the upper 95% confidence limit on the 90th percentile. If that upper limit were less than the cleanup level, then no cleanup action would be required. In addition, it is stated in (10)(d)(ii) that when using tolerance intervals the true proportion of samples that do not exceed the ground water cleanup level shall not be less than *fifty percent.* Is fifty percent correct? The use of a percentile limit is usually predicated on the idea that an *upper* percentile will provide greater protection to the public for short-term or acute toxic effects on human health or the environment. However, the 50th percentile is not an upper percentile; it is the median (middle) of the distribution. Is the use of the 50th percentile intended or an oversight?

489 **WAC173-340-720(10)(f)(i) Compliance monitoring**

This section states that if measurements below the method detection limit shall be assigned a value equal to one-half the method detection limit when not more than fifteen percent of the measurements are below the practical quantitation limit. First, this requirement is different from that specified in WAC 173-340-709 (page 161-162) for background data: the requirement for background does not mention the fifteen- percent limit. Is this lack of consistency intended or an oversight? The same question applies to sections (10)(f)(ii) and (10)(f)(iii) (page 173). Second, in (10)(f)(iii) (page 173) it is stated that Cohen's method shall be used to calculate a corrected mean and standard deviation for use in calculating an upper confidence limit on the true mean ground water concentration. However, an underlying assumption of Cohen's method is that the data are normally distributed. [Cohen's method can also be used if the data are lognormally distributed, in which case the calculations are conducted on the natural logarithms of the data, followed by calculations to transform the estimated logarithmic mean and standard deviation back to the original measurement scale. See Gilbert (1987, pages 182-183).] To avoid inappropriate use of Cohen's method, the statement could be added to MTCA that Cohen's method should only be used if the data are normally distributed.

490 **WAC 173-340-730 SURFACE WATER CLEANUP STANDARDS**

WAC 173-340-730 (1)(a) Surface Water Cleanup Standards

The phrase "reasonable maximum exposure" is not adequately defined in this section, or in the definitions section (WAC 173-340-200). EPA provides guidance on the determination of RME values, which should be incorporated herein by reference.

491 **WAC 173-340-730 (2)(b)(iii) Surface Water Cleanup Standards**

Method A surface water cleanup levels are broadly based and include values that are protective of aquatic organisms, and humans via the consumption of water or aquatic organisms. The reference to indicator hazardous substances [WAC 173-340-708(2)] seems restrictive because such substances are defined in the context of human health risk assessment procedures. Please clarify whether it is it the intent of WAC173-340-730 (2) (b) (iii) to limit additional hazardous substances to the protection of human health. In addition, the last half of the paragraph beginning with the phrase "for which there is no value" seems too restrictive. Additional language should be added to allow determination of appropriate values pursuant to Methods B and C as appropriate.

492 **WAC 173-340-730 (3)(b)(ii) Surface Water Cleanup Standards**

The phrase "protection and propagation of wildlife" presumably includes semi-aquatic birds and mammals that dwell and forage in the water. However, water quality criteria and whole effluent toxicity testing are not appropriate for development of effects-based concentrations that could be protective of these receptors. In addition, proposed procedures for the evaluation of terrestrial ecological risk assessment (WAC 173-340-7490) do not include semi-aquatic birds and mammals. Consequently, this section should reference appropriate EPA guidance for determination of environmental effects among semi-aquatic birds and mammals.

493

WAC 173-340-730 (3)(b)(iii) Equations 730-1 and 730-2

A number of assumptions are inherent in each of these equations. Ecology should provide a statement or citation that justifies the scientific or policy basis for assumptions for fish consumption rates (FCR) and fish diet fraction (FDF). Bioconcentration factors are not unitless. Bioconcentration factors are defined as the concentration of a chemical in fish tissue (mg/kg tissue) divided by its concentration in water (mg/L water). Consequently, BCFs are expressed in units of (L/kg). These expressions are very similar, if not identical, to those used by EPA to establish water quality criteria. Consequently, Ecology should be aware that this approach could result in unrealistically low concentrations that are less than ambient levels for naturally occurring substances. Simple comparisons with background values and quantitation limits as described in WAC 174-340-730 (5) (c) do not provide a meaningful scientific basis for rectifying such inaccuracies. Consequently, Ecology should provide additional language and guidance that addresses such situations.

494

WAC 173-340-730 (3)(c) Modified Method B Surface Water Cleanup Levels.

Adjustments to reference dose, cancer potency factor, and bioconcentration factor are chemical-specific, not site-specific as indicated in the amendment. Site-specific factors that should be discussed in this section are the fish consumption rate and the fish diet fraction. In the sixth line of this paragraph, please replace the phrase "health risk levels" with "health and environmental risk levels."

495

WAC 173-340-730 (4)(b)(ii) Surface Water Cleanup Levels

See comments above for WAC 173-340-730 (3)(b)(ii).

496

WAC 173-340-740 UNRESTRICTED LAND USE SOIL CLEANUP STANDARD

WAC 173-340-740(2) Method A Soil Cleanup Levels

It is unclear how the concentrations in Table 740-1 (Method A Soil Cleanup Levels for Unrestricted Land Use) were calculated. We recommend that additional information regarding the assumptions used to develop Method A cleanup levels be presented.

497

The concentration for chromium (III), 2000 mg/kg, appears to be excessively low. It is a naturally occurring element that is required in the human diet as an essential nutrient. It exhibits very low toxicity even at excessively high concentrations.

498 The acceptable concentration for lead in soil also appears to be low based on the EPA (USEPA 1994a) directive for acceptable soil concentrations for residential exposures. The EPA has established a health protective level of 400 mg/kg based on blood lead levels in children. This safe concentration was calculated by the EPA (USEPA 1994b) with the Integrated Exposure Uptake Biokinetic Model (IEUBK) which has been extensively reviewed and validated and is currently the most accurate risk assessment model available. The acceptable concentrations for other chemicals listed in this table appear reasonable under conservative exposure assumptions.

499 **WAC 173-340-740(3)(iii)(B) Soil direct contact; Carcinogens; Equation 740-2**

This equation presents a generic approach to calculate acceptable concentrations for direct contact with chemicals in soil. The soil ingestion rate assumption of 200 mg/day is higher than the USEPA value of 114 mg/day presented in the recently developed *Supplement Guidance for Developing Soil Screening Levels for Superfund Sites* (USEPA, 1999c). The rationale and supporting information for the MTCA value should be presented.

500 **WAC 173-340-740(3)(b)(iii)(C) Petroleum Mixtures**

We recommend that Ecology make consistent use of dermal exposure factors in the risk calculation formula. For petroleum mixtures, dermal contact is included in the standard method, but it is not included in the standard method for non-petroleum compounds. Dermal contact is included in the modified method for non-petroleum compounds. For some chemicals, such as dioxins, the dermal pathway can account for risks almost equal to the ingestion pathway. This would be a situation where use of the standard method could result in an underestimation of the protectiveness of a cleanup level.

501 We recommend that Ecology use consistent terms in the risk assessment formula for both petroleum and non-petroleum calculations. The formula lists exposure frequency (EF), exposure duration (ED), and averaging time (AT), all standard parts of the EPA's risk assessment formulas (USEPA 1989a). These three parameters are not listed in formulas A and B of Section (3) (iii); presumably, they are replaced by the frequency of exposure (FOE) term. The difference is confusing and could result in inconsistent cleanups.

502 The equation (740-3) needs clarification on the specific "TPH (total petroleum hydrocarbon) components" included in factor $F_{(i)}$. What specifically is meant by "petroleum fractions and volatile hazardous substances" (WAC 173-340-740(3)(b)(iii)(C) ? Are these the different equivalent carbon numbers reported in the volatile petroleum hydrocarbons (VPH) and extractable petroleum hydrocarbons (EPH) analytical methods? Clarification also needs to be added on selection of appropriate surrogate compounds to be used for assigning toxicity factors (RfDs) to these "TPH components."

503 All formulas in Section (3)(iii) list 16 kg rather than the EPA default of 15-kg (USEPA 1991b, and 1993). Fifteen kilograms for children age 0 to 6 has been confirmed by recent population survey work presented in USEPA 1997a.

504

WAC 173-340-740(3)(c)(ii) Modified Method B soil Cleanup levels; Allowable modifications.

We recommend adding age groups, and associated surface area and body weight, to the list of exposure factors that may be modified. Skin surface areas and body weight are not listed under the allowable modifications. The skin surface area is specified as 2,200 cm2, the EPA default for children aged 0 to 6 years in a residential exposure scenario (USEPA 1991b, and 1993). There is no mention in the "allowable modifications" that skin surface area or age group could be altered. However, in Section (3)(d) of 708, the text states that a "child trespasser" scenario could be considered at a capped commercial site. Children aged 0 to 6 are rarely trespassers; an appropriate trespass scenario for many sites would be elementary school children (age 4 to 11) or teens (12 to 18). If an older age group were evaluated then both skin area and body weight would need to be adjusted. EPA's Exposure Factors Handbook (1997a) lists skin surface areas and body weights for many age groups. These values are easily obtained from tables in this reference. To restrict the allowed populations to either all children aged 0 to 6 years or all adults would be over-protective in some cases and under-protective in others.

505

WAC 173-340-740(3)(c)(iii)(B) Modified Method B Soil Cleanup Levels; Dermal Contact

For carcinogens use Equation 740-5. This equation presents a generic approach to calculate acceptable concentrations for direct contact with chemicals in soil. The soil ingestion rate assumption of 200 mg/day is higher than the USEPA value of 114 mg/day presented in the recently developed *Supplement Guidance for Developing Soil Screening Levels for Superfund Sites* (USEPA, 1999c). The rationale and supporting information for the MTCA value should be presented.

506

WAC 173-340-740(3)(c)(iv) Soil Vapors

The MTCA states:
"that the vapor pathway shall be evaluated whenever the proposed changes to the standard Method B equations or default values would result in soil cleanup levels that are high enough that indoor air or ambient air could become a significant potential exposure pathway. In these circumstances, the conceptual site model shall be expanded to consider exposure to hazardous substances in indoor air and/or ambient air under present and future potential land uses."

Although it is appropriate to consider indoor inhalation of volatile chemicals, it would necessarily change the overall exposure scenario for the residential receptor. As mentioned previously, risks are estimate based on the assumption of RME for an *individual* based on a presumed chronic daily exposure scenario. Evaluating complete and reasonable exposure scenarios must take into account how humans are exposed to contaminants in different environmental media since the individual cannot be in two places at once. That is, by assuming that the individual is exposed to vapors inside a house also must assume the individual is not directly exposed to soil contaminants outside the house. While in the house, the individual will be exposed to only a fraction of the outside concentration. This fraction has been empirically shown to be only 30 to 60 percent of outside soil concentration. If an adjustment is made to assume the receptor is inside, direct exposure to soil contamination outside also needs to be concomitantly adjusted.

507

WAC 173-340-740(6) Point of compliance

Section (d) states:
"For soil cleanup levels based on human exposure via direct contact or other exposure pathway, the point of compliance shall be established in the soils throughout the site from the ground surface to fifteen feet below the ground surface. This represents a reasonable estimate of the depth of soil that could be excavated and distributed a the soil surface as a result of site development activities."

While this is an appropriate conservative approach, it is necessary to also necessary to evaluate soil mixing of "clean" and "contaminated" soils in which the concentration is attenuated. That is, when the point of compliance extends to 15 feet below surface, excavated soils will include both impacted and non-impacted soil. Consequently, the contaminant concentration measured in individual samples must be adjusted downward since the exposed individual will ultimately be exposed to the combined concentration/soil volumes.

508

WAC 173-340-740(7)(d)(i)(A) Compliance Monitoring

Use of Land's method is not recommended by the EPA (1997b). See comment under groundwater cleanup standards, WAC 173-340-720(10)(d)(i)(A) above.

569

WAC 173-340-740(7)(d)(i)(B) Compliance Monitoring

No provision is made in the new standard for data that are neither normal nor lognormally distributed. In our experience, many sites have data that fail a lognormal or normal distribution test and require a nonparametric approach to accurately arrive at an estimation of the upper confidence limit. Gilbert (1987) recommends a number of appropriate nonparametric approaches that could be applicable.

570

WAC 173-340-740(7)(d)(ii) Compliance Monitoring

It is stated that a *parametric* test for percentiles based on tolerance intervals may be used. We recommend that MTCA include a statement that *nonparametric* methods may be considered for use if the underlying distribution of the data cannot be reliably determined.

571

WAC 173-340-745—SOIL CLEANUP STANDARDS FOR INDUSTRIAL PROPERTIES

WAC 173-340-745(3)(b)(iii) Method A Soil cleanup standards for industrial properties

We recommend that the proposed MTCA revisions in this section include a statement for an option to use the Method B cleanup level approach for those constituents that are not on the Method A Tables and have no applicable value in state and federal law.

572

We recommend that the use of a background concentration be clarified by including wording that the background concentration is a statistical estimate, not a single value.

573

WAC 173-340-745(5)(b) Method C Industrial soil cleanup levels

Standard Method C industrial soil cleanup levels: The reason for the use of 0.4 as the default FOE in the standard Method B equation and the use of 0.7 as the default EF in the modified Method B equation is not explained and is confusing. If the defaults are used in the standard and modified equations for soil ingestion only (no dermal contact in the modified equation) then different cleanup numbers result. For example, if an RfD value of 0.03 is used in the noncarcinogenic standard equation, the resulting cleanup level is 105,000 ppm while the noncarcinogenic modified equation results in a cleanup level of 60,000 ppm (assuming the chemical has no dermal component). Section (5)(a) of Section 173-340-745 says that either standard or modified Method B equations may be used, yet using one equation rather than the other results in a cleanup level approximately 40 percent lower.

574

We also note that the EF term in the petroleum equation under the "standard" method is 0.7 and not 0.4, and that the petroleum standard equation includes dermal.

515 **WAC 173-340-747—DERIVING METHOD B SOIL CONCENTRATIONS FOR GROUNDWATER PROTECTION**

WAC 173-340-747(3)(a) Standard Method B; standard three-phase partitioning model

It is unclear what DF value should be used in Equation 747-1 for a smear zone resulting from a fluctuating water table. We recommend that Ecology provide guidance about whether to use a default value of 20, 1, or some intermediate value for such field settings.

516 **WAC173-340-747(3)(a)(ii)**

Default Kd values for the standard list of toxic metals are summarized in Table 747-1. It is not clear if there are no other metals of concern, or (if there are) which default Kd values should be used. At some Navy sites, metals and semi-metals, such as iron and manganese, were considered to be inorganic compounds of interest. Such compounds are commonly found at elevated concentrations in soils in Washington. Ecology should clarify whether literature values should be referenced for metals not listed in Table 747-1.

517 **WAC 173-340-747(3)(a)(iii)**

For NAPL sites, the soil cleanup level based upon the three-phase partitioning model must not result in accumulation of NAPL on or in the groundwater. Residual soil saturation TPH screening levels are provided in Table 747-2, provided later in Section 747(5)(b)(i). As indicated in the footnote to this table, such screening values only apply to coarse sand and gravelly soils. Glacial soils in Western Washington typically contain a significant fraction of fine-grained sizes. Soils with a significant silt or clay fraction may show higher residual saturation values. Ecology should provide guidance for determining the appropriate residual screening level for such fine-grained soils. Alternatively, there should be provisions for demonstrating from field observations if residual saturation levels have been exceeded in proximity to the groundwater (based on visual observations, sheen tests, and other field screening tools).

518 **WAC 173-340-747(3)(b)(i) Leaching Tests**

We disagree with the language used to describe the limitations of the TCLP and SPLP methods. This section states that the SPLP method should not be used for metals that are more soluble at low pH when "significant biological degradation is occurring." This restriction is not very clear and is, in our opinion, misleading. Because most metals are more soluble at low pH and "significant" biological degradation occurs in most near-surface and shallow subsurface soils, this statement seems to indicate that the TCLP method is generally preferable over the SPLP method.

518 cont.

Except in rare cases, the geochemical conditions in which the SPLP test procedure is performed more accurately models field conditions than the TCLP procedure. The TCLP test was designed to simulate concentrations of contaminants in leachates resulting from co-disposal with municipal wastes in landfills. The test attempts to mimic an actively decomposing landfill where, due to anaerobic degradation of wastes, carboxylic acids such as acetic acid are generated. High concentrations of acetic acid are not typically encountered in natural soil environments, except possibly in peat bog-type environments.

The SPLP test is more representative of actual field conditions by mimicking soil contact with acid rain. The SPLP contains no chelating or strong complexing/ion pair forming agents that positively bias leachable metal concentrations (particularly lead). Although the SPLP test starts out with a lower pH extraction fluid than TCLP, the SPLP extraction fluid is not buffered. This more closely mimics the natural environment where the pH of groundwater is controlled by the soils neutralizing capacity. The TCLP extraction fluid is buffered and is artificially maintained at a low pH.

We suggest that the limitations of the leaching procedures be revised to reflect that the SPLP test is preferable under most site conditions except in landfill-like environments (e.g., wood waste landfills, solid waste landfills, peat bogs, etc).

519

WAC 173-340-747(3)(b)(i)(A)

The section states that the SPLP should not be conducted at low pH conditions because of increased solubility. We recommend that Ecology identify the range of pH values that may be problematic. A less than number or a range would be helpful.

520

Ecology should specify the criterion for identifying significant biological degradation (as a threshold degradation half-life or degradation rate) at sites with metals that are more soluble at low pH, and a test protocol that would be appropriate for such metals if the significant biological degradation is suggested by site-specific data. Ecology should provide guidance to assist in making this determination.

521

WAC 173-340-747 (3)(b)(i)(A and B)

The leaching tests presented in this section were developed for use in evaluating disposal options (e.g., landfills). As such, the tests are very vigorous and do not accurately represent site conditions for contaminants in soils at a site. Samples in these tests are acidified and vigorously centrifuged to extract as much contaminant out of the sample as possible. These conservative leaching tests will not be helpful in assessing site-specific conditions.

522 **WAC 173-340-747 (3)(b)(ii)(A and B)**

This section states that leaching test concentrations must be less than Method B or less than 10 times Method B cleanup levels, depending on the contaminant. Shouldn't leaching test concentrations be less than *or equal to*?

523 **WAC 173-340-747(3)(b)(iii)**

Ecology should provide a reference or other guidance for "methods approved by the department."

524 **WAC 173-340-747(4)(a) Modified Method B; four-phase partitioning model**

The four-phase partitioning model uses Raoult's Law applied to equivalent carbon (EC) groups to represent complex petroleum mixtures. Chemical properties for the surrogate EC groups include aqueous solubility, soil organic carbon-water partitioning coefficient, Henry's Law constant, molecular weight, and molar density. The four-phase partitioning model does not provide a soil NAPL concentration that is protective of groundwater, but rather a predicted groundwater concentration that can be, in turn, compared to cleanup levels specified in Section 720 of the WAC. If the predicted concentration is less than the cleanup level, then the soil NAPL concentration is deemed protective of groundwater. If not, then the soil NAPL concentration is deemed to exceed the groundwater cleanup level. Presumably, in such a case, the factor by which the predicted groundwater level exceeds the cleanup level would be used to estimate the required reduction in soil NAPL concentrations necessary to achieve a groundwater-protective remediation level. Ecology should provide confirmation that this is a method for which soil cleanup levels for specific EC groups could be developed.

525 **WAC 173-340-747(4)(a)(i)**

According to restrictions on the use of the model, the four-phase model can be used on a case-by-case basis for soil containing fuels that have been enhanced with alcohol by demonstrating that cosolvency effects have been adequately considered. It is unclear whether this demonstration can be made by merely increasing the solubility, Sl, for one or more EC groups. Ecology should provide guidance to perform such a demonstration.

526 **WAC 173-340-747(4)(a)(ii)**

The extra "n=" in Equation 747-3 should be deleted since it is redundant.

Reply 19

527

WAC 173-340-747(4)(a)(iii)

The notes that refer to input parameters to Equation 747-4 reference Table 747-3. These should be corrected to Table 747-1. In general, all of the default values in Table 747-1 are consistent with those used in the NAS Whidbey RI/FS for Fuel Farm 1. Total mass of soil should be represented by M_{soil}, not m_{soil}, in the equation to make the parameter terminology consistent.

528

WAC 173-340-747(4)(a)(iv)

Equation 747-5 is used to determine the molar density of the NAPL for a specific site. The equation is predicated on the assumption that the NAPL is an ideal mixture and that the mole fractions of the components in the NAPL are equivalent to those in the total soil sample. According to a background document prepared for Ecology by researchers from Washington State University (Roberts and Allen-King 1998), the four-phase approach "does not account for mass stored in non-NAPL phases...because the EC groups have different affinities for the physical phases." The result is an overestimation in predicted groundwater concentrations for more soluble EC groups and underestimation for less soluble, heavier-end EC groups (representing an approximation of the true concentration by 10 to 50 percent). Apparently, the predicted concentrations are reasonably accurate for sites where soil NAPL concentrations are high (i.e., in excess of approximately 2,200 to 2,400 mg/kg). This would likely be the case for the sites where the Navy would have the most interest in applying the model.

529

WAC 173-340-747(4)(a)(v)(B)

Table 747-3 is not the correct citation in the discussion for Step 2. Table 747-1 should replace the existing citation.

530

WAC 173-340-747(4)(b)(vii)(B)(ii)

It is not clear why an arbitrary limit of 5 meters was placed on the thickness of the aquifer-mixing zone. If site-specific information can justify a thicker saturated zone, then the aquifer mixing zone parameter should be defined as such.

531

WAC 173-340-747(4)(d)(i)(B)

"Containment" should be replaced by "contaminant" in the first sentence of this section.

532

WAC 173-340-747(5)(b)(i)

See earlier comment for WAC 173-340-747(3)(a)(iii).

533 **WAC 173-340-747(5)(b)(ii)(A)**

Presumably, methods that could be used to obtain site-specific residual saturation concentrations would be akin to EPA's paint-filter test for hazardous wastes. Ecology should provide guidance for methods and field parameters that would be used to make this determination on a site-specific basis.

534 **WAC 173-340-747(5)(b)(ii)(B)**

The demonstration that sufficient time has elapsed for an NAPL release to migrate to the groundwater would likely be based upon a Darcy Flow law, where the vertical travel time is estimated from the distance from the source divided by the Darcy Flow velocity (adjusted for retardation effects and a hydraulic conductivity adjusted for NAPL as the fluid rather than water). The travel time would then be compared to the time from inception of the NAPL release. Ecology should provide confirmation that this approach is appropriate.

535 **WAC 173-340-7490 TO WAC 173-340-7494 AND ASSOCIATED TABLES IN WAC 173-340-990**

WAC 173-340-7490(3)

This section states that for species protected under law, protection is extended to the level of individuals of a species. Please clarify whether that level of protection is granted to bird species protected under the Migratory Bird Treaty Act. Furthermore, the text of this section implies that species not granted special protection under the law should be protected at some level above the individual, presumably the population level. The level of protection afforded species not
536 protected under law needs to be stated. This clarification is a critical part of the policy objectives of the rule.

537 **WAC 173-340-7490(3)(b)(i)**

This clause states that plants and soil biota need not be considered when assessing industrial or commercial properties unless they are protected under the federal Endangered Species Act. WAC 173-340-7490(3) refers to species protected under the Endangered Species Act and other applicable laws. WAC 173-340-7491(2)(a)(ii) states that sites failing to meet any exclusions will go into a site-specific evaluation of the site if used by threatened and endangered species; Washington "priority species" and "species of special concern"; and Washington "endangered, threatened, and sensitive vascular plants." The distinction between the listed species referenced in these three sections is unclear. It would be best to use a consistent description of the species protected by law for these sections. Please refer to comment WAC 173-340-7490(3) concerning the relevance of the Migratory Bird Treaty Act in relation to other applicable laws.

538

WAC 173-340-7491(1)(b)

This section states that plans to pave or gravel a site containing contaminated soil would exclude the site from an ecological evaluation. This may be a reasonable approach for sites where future development is imminent. However, it might also encourage some landowners with open areas to pave those areas to avoid possible future actions. This could result in the net loss of potential habitat particularly for industrial or commercial sites and may contradict the goal of the terrestrial ecological evaluation process as stated in WAC 173-340-7490(3). Consideration should be made in the rule or elsewhere in MTCA for the evaluation of ecological costs and benefits of taking a cleanup action that will eliminate habitat versus leaving a habitat impacted by contaminants intact without a cleanup action.

539

WAC 173-340-7492(2)(c)(i)

The reference to "Table 7" should be corrected to "Table 749-2."

540

WAC 173-340-990

In Table 749-2, the values presented for gasoline range organics (100 mg/kg) and diesel range organics (200 mg/kg) for unrestricted land use category are two orders of magnitude lower than the values for industrial or commercial land use. From information presented in Table 749-3, it appears that the petroleum values presented in Table 749-2 are based upon toxicity studies on soil biota. Saterbak et al. (1999) investigated the response of earthworms to eight different soils contaminated with petroleum hydrocarbons in a controlled laboratory experiment. They concluded that there are insufficient data and understanding of the impact of most hydrocarbon contaminants on soils to allow for the development of soil benchmark screening values. They further recommend that a 14-day earthworm survival test would be a suitable test for predicting the effects of hydrocarbon-contaminated soils on earthworms. Using the data set cited in Saterbak et al. (1999), Wong et al. (1999) calculated a 25 percent inhibitory concentration for survival of earthworms ranging from 766 to greater than 34,455 mg/kg total petroleum hydrocarbons (as determined by gas chromatographic analysis) across the various soils. Since the uncertainty associated with the petroleum values for the unrestricted land use presented in Table 749-2 appears unacceptably high, it is recommended that those values be substituted with "See note d" and bioassays as described in WAC 173-340-7492(2)(c)(ii) be used to determine potential impacts to soil biota on a site-specific basis.

541

WAC 173-340-7493(1)(b)

The word "site-specific" should be inserted before the word "terrestrial."

542 **WAC 173-340-7493(4)(a)**

This section discusses how toxicity reference values and soil concentrations should be selected from the literature. Although many of the selection principles listed in this section are valid, substitution of the words "technically defensible" for "relevant" in the first sentence would make the intent of the section more understandable.

543 **WAC 173-340-7493(4)(a)**

The phrase "appropriate exposure duration period" as used in the fourth bullet is ambiguous. A definition of what an appropriate exposure period is should be supplied in this section.

544 **WAC 173-340-7493(4)(b)**

It seems an unreasonable burden to expect a PRP to supply all the information listed in this section. The intent of the literature survey is to provide sufficient information for the PRP to select a technically defensible toxicity reference value or soil concentration. The PRP should only be responsible for providing the references for the toxicity reference values or soil concentrations. The text should be modified accordingly.

545 **WAC 173-340-7493(7) and WAC 173-340-7493(7)(c)**

The reference to Table 9 should be corrected.

546 **WAC 173-340-990**

References to Tables 9 and 10 in footnotes "b" and "e" in Table 749-3 and in the title for Table 749-5 should be corrected since no such tables are found in WAC 173-34-990.

547 **WAC 173-340-990, Table 749-5**

In Table 749-5, footnote "b" refers the reader to footnote "a" for a formula used to calculate K_{plant} from K_{ow}. Footnote "a" does not contain a formula and the reference should be corrected.

WAC 173-340-750—CLEANUP STANDARDS TO PROTECT AIR QUALITY

548

WAC 173-340-750

Air cleanup levels are to be established at least as stringent as "concentrations established under applicable state and federal laws." Currently, there are no state or federal laws applicable to such sites. The result of this wording is the most likely extension of Ecology air rules for Ambient Source Impact Levels (ASILs) to existing sources, rather than new industrial permitting situations. This will have the effect of establishing one in a million carcinogen risk, and hazard index one to sources not previously required to meet a specific requirement. In fact, for sites that do not pose a lifetime exposure potential, these values are likely overly conservative.

549

The MCTA rules create a procedure that is overly complex when the EPA has already performed a highly publicized and thoroughly scientific analysis of the air pathway at hazardous waste disposal sites. The EPA procedures contained in the Soil Screening Guidance (USEPA 1996a, 1996b) are "a tool developed by EPA to help standardize and accelerate the evaluation and cleanup of contaminated soils ... where future residential land use is anticipated." The methodology in the soil screening guidance is being used in much of the rest of the nation to perform similar analysis to the MTCA air cleanup rules. They provide a definitive, yet simpler, approach to resolving this issue.

550

In the "Air" cleanup levels section, an allowance should be made for sites in which local urban background concentrations of ambient air exceed natural background concentrations. In such instances, risk-based cleanup levels that exceed natural background but are below local urban background would be unachievable because the local urban background would continually recontaminate to that level. In some urban areas, it is possible that urban background concentrations of ambient air exceed both natural background and some risk-based levels. For example, a site located adjacent to a busy highway may have "urban background" concentrations of some chemicals due to auto emissions. If some of these chemicals are also chemicals of potential concern at the nearby site, it is possible that the approach described in this section will require cleanup to concentrations less than urban background. Such a cleanup would be unachievable, because the site would continually become recontaminated to the higher, local ambient concentrations that are not site-related.

We have identified two sections in the regulation where Ecology could correct this problem:

550 cont

1) Revise WAC 173-340-750(5)(c): (added text is underlined) Natural and urban background and PQL considerations. Cleanup levels determined under subsections (2), (3), and (4) of this section, including.....are not required to be set at levels below the practical quantitation limits and natural background. sites located in urban areas where local urban concentrations exceed natural background and risk-based cleanup levels are not required to set levels below the urban background concentration. in such instances, the owner or operator must demonstrate to ecology that non-site-related chemical concentrations in the local ambient air are in excess of natural background and risk-based levels.

2) Revise the definition of "Natural Background" in section 173-340-200 (Definitions), to include urban ambient air concentrations. The present definition appears to have such an intent, but it is not clearly stated, thus leaving room for conflicting interpretations. For example, the definition could read: "Natural background" means the concentration of hazardous substance consistently present in the environmental that has not been influenced by localized human activities. For example, ambient air concentrations of some chemicals in some urban areas may be the result of persistent automobile emissions. these concentrations would be considered natural background. also..."

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WAC 173-340-750(5)(c) Adjustments to Air Cleanup Levels

Area background air concentrations should also be considered when adjusting air cleanup levels. Ambient air samples are particularly affected by contaminants produced by regional and worldwide anthropogenic sources including a wide variety of combustion-, household-, and industry-related products. It is critical that these area-wide source concentrations be considered when developing site-specific air cleanup levels.

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WAC 173-340-760—SEDIMENT CLEANUP STANDARDS

WAC 173-340-760

The Navy has actively participated in advisory groups convened by Ecology to assist in the modification of Washington's sediment management standards (WAC 173-204). We have also provided written comments to Ecology on several occasions regarding proposed revisions and amendments to the sediment management standards. Our written comments on the sediment management standards appear in Appendix B.

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WAC 173-340-800—PROPERTY ACCESS

It may not be appropriate to include this in the WAC, but in a separate agreement. Provided the site owner supplies proper warnings, the owner should be held harmless if the department's employees, agents, or contractors injure themselves while on site.

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WAC 173-340-840—GENERAL SUBMITTAL REQUIREMENTS

WAC 173-340-840(5)

Provide guidelines on the specific format for electronic data deliverables required by the department.

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APPENDIX A

Proposed Approach For Determining Exceedances To Background

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APPENDIX A
PROPOSED APPROACH FOR DETERMINING EXCEEDANCES TO BACKGROUND

This appendix will describe our proposed alternative approach for determining whether hazardous substances at a site exceed either natural or area background. The discussion will start by providing calculations of the probability that the WAC 173-340-709 proposed method of defining background will conclude that a site exceeds background when, in fact, it does not exceed background. The discussion will then describe the alternative statistical methodology we recommend for comparing site concentrations to background concentrations.

PROBABILITY THAT A SITE MEASUREMENT WITHIN THE RANGE OF BACKGROUND WILL EXCEED BACKGROUND AS DEFINED IN WAC 173-340-709

For illustrative purposes in this discussion, we are assuming that a set of background data and a set of site data have identical data distributions. We realize that this situation would rarely if ever occur in the real world, but this assumption serves to help us illustrate the point we wish to make in this discussion: that WAC 173-340-709 as written has an unacceptably high probability of concluding that hazardous substance concentrations at a site exceed background concentrations when, in fact, the site concentrations do not exceed background concentrations. In this discussion the terms area background and natural background as defined in WAC 173-340-200 can be used interchangeably to illustrate our point.

The probability that one or more of n site measurements will exceed a given percentile of a data distribution is given by Equation 1.

Equation 1: $P = 1 - t^n$, where

P = probability that one or more measurements will exceed the tth percentile of a data distribution

t = the threshold t^{th} percentile of a data distribution above which a measurement is deemed to exceed background. WAC 173-340-709 proposes that for normally distributed data, t = 0.8 (i.e. the 80th percentile of the data). For lognormally distributed data, WAC 173-340-709 proposes that t = 0.9

n = the number of samples analyzed

Table A-1 calculates the probability that one or more of n site measurements will exceed either the 80th or 90th percentile of a data distribution. (Tables appear at the end of this appendix.) For an assessment of natural background, WAC 173-340-709 requires 10 or more samples to be analyzed. The probability that 1 or more of 10 samples will exceed the 80th percentile of the data distribution is 0.89 (i.e., there will be an 89 percent chance that one or more background samples will exceed the 80th percentile of all background samples). The probability that 1 or more of 10 samples will exceed the 90th percentile of all background samples is 0.65. For determination of area background, WAC 173-340-709 requires 20 or more samples to be analyzed. The probability that 1 or more background samples will exceed the 80th percentile of all background samples is 0.99. The probability that 1 or more of 20 samples will exceed the 90th percentile of all background samples is 0.88.

For the more commonly encountered situation where each sample is analyzed for multiple chemicals, the probability that one or more samples and/or analytes within a sample exceed background is given by Equation 2.

Equation 2: $P = 1 - t^{na}$, where

a = the number of chemicals analyzed per sample

All other terms in Equation 2 are the same as those in Equation 1. Table A-2 lists the probabilities that one or more samples and/or analyses will exceed the 80th percentile of a data distribution, while Table A-3 provides the exceedance probabilities for the 90th percentile of the combined number of samples and number of analytes. For exceedance of the 80th percentile of the data distribution, any combination of 24 or more samples and analytes (e.g., 6 samples each with 4 analytes, 24 samples of a single analyte) will have a probability of 1.0 (a statistical certainty) of one or more analytes exceeding background as defined in WAC 173-340-709, even though the sample is within the range of background. For exceedance of the 90th percentile, any combination of 51 or more samples and analytes, such as 3 samples, each with 17 analytes will have a probability of 1.0 of one or more samples exceeding background as defined in WAC 173-340-709, even though the sample is within the range of background. The Navy believes that the probability of incorrectly concluding that a site exceeds background when, in fact, it does not, is unacceptably large when many site analyses are compared to background threshold values as defined in WAC 173-340-709.

STATISTICAL TESTS TO COMPARE SITE AND BACKGROUND CONCENTRATIONS

The Navy believes that any decisions as to whether site concentrations exceed background concentrations should be based on statistical tests. Specifically, we believe that all determinations of whether or not a site exceeds background should be made using statistical hypothesis testing. The procedures described in this section all are based on evaluation of the following null and alternative hypotheses, which are denoted by H_o and H_a, respectively.

H_o: Site concentrations do not tend to be larger in value than background concentrations

H_a: Site concentrations tend to be larger in value than background concentrations

When comparing site and background concentrations, the null hypothesis H_o is always initially assumed to be true. The null hypothesis is rejected in favor of the alternative hypothesis H_a only when the data are sufficiently supportive of that decision.

Our proposed approach requires that careful attention be given to collecting a sufficient number of representative samples from both site and background areas. This is so that the statistical tests will have a sufficiently high probability of determining that a site exceeds background if in fact the site really does exceed background (i.e. we believe that the statistical power of the test should be high). The number of samples required to provide a desired level of statistical power should be determined as part of the data quality objective (DQO) planning process for the site. If too few samples are collected, the statistical test may not have sufficient power, thus lacking the ability to accurately determine whether or not concentrations of hazardous substances exceed background. Under the background definition method proposed by Ecology, there is an incentive for the regulated community to minimize both the number of samples and number of analytes evaluated at a site, as this is the only method by which a site has any realistic probability of being found not to exceed background (Tables A-1, A-2, and A-3). The Navy endeavours to make accurate determinations of whether or not a site exceeds background. To do this, the burden of proof should be in demonstrating that the alternative hypothesis given above is more likely to be true than the null hypothesis. The burden of proof should not be to demonstrate that a site is below a threshold that is within the range of either area or natural background, as WAC 173-340-709 proposes.

Full details of the Navy's recommended approach for comparing site and background concentrations can be found in one of two documents:

- *Procedural Guidance for Statistically Analyzing Environmental Background Data.* Prepared by SWDIV and EFA WEST of Naval Facilities Engineering Command. September 1998.
- *Handbook for Statistical Analysis of Environmental Background Data.* Prepared by SWDIV and EFA WEST of Naval Facilities Engineering Command. July 1999.

Copies of both of these documents can be provided to Ecology upon request. A summary of the recommended statistical procedures is given below. Once site and background concentration data are available, the following steps are followed to determine whether an analyte exceeds background.

1. Identify data gaps and outliers, and evaluate non-detects.

2. Identify spatial and temporal trends, and stoichiometric correlations.

3. Develop summary descriptive statistics, graphical representations of the data, and perform goodness-of-fit tests to determine the statistical distribution of the data (e.g., normal, lognormal).

4. Determine the method by which non-detects will be evaluated. Collect additional site and/or background data if necessary to obtain a sufficient number of detected results to perform appropriate statistical tests.

5. Perform equality of variance test.

6. If both the site and background data sets are normally distributed, perform a Student's t-test to determine if the mean site concentration is statistically elevated above the mean background concentration.

7. If either the site or background data sets (or both) are either lognormally distributed or conform to some other non-normal distribution, perform a Wilcoxon rank sum test on the untransformed data (i.e., do not log-transform the data) to determine if the median site concentration is statistically elevated above the median background concentration.

8. For certain situations, such as a large number of non-detects or large inequality of variances between the site and background data, other statistical tests (such as the slippage test, quantile test, Gehan test, Satterthwaite t-test, or two-sample test of proportions) may be more appropriate than either the Student t-test or Wilcoxon rank sum test. In these circumstances the guidance of a professional statistician should be sought to ensure that the proper comparison is made.

Several features and advantages of the Navy's proposed approach should be recognized. The primary difference between the Navy's and Ecology's approaches is that the Navy recommends the use of classical statistical hypothesis testing to determine if a site exceeds background, while Ecology proposes comparing site data to a background threshold concentration, with exceedances of the threshold identifying samples that exceed background. As shown earlier, the probability that the Ecology-proposed method will incorrectly identify a sample as exceeding background when, in fact, it is within the range of background is unacceptably high. The Navy-proposed statistical hypothesis testing method compares either the mean site and background concentrations (for normally distributed data using parametric statistical tests) or the median site and background concentrations (for lognormally or other non-normal distributions using nonparametric statistical tests). If the sampling program is properly designed, the Navy approach will permit predetermination of both the number of samples to be collected and the statistical power (i.e., the probability that the null hypothesis will be rejected when it should be rejected) of the sampling program.

Our approach does not require the logarithmic transformation of concentration data that are non-normally distributed prior to running statistical analyses such as a t-test on the log-transformed data. This is because recent investigations have shown that the Wilcoxon rank sum test performed on untransformed data from a non-normal distribution has greater statistical power than can be obtained from a t-test performed on log-transformed data from a non-normal distribution.

The stoichiometric comparisons include analyses of geochemical ratios of various inorganic compounds. This approach is useful as a confirmatory tool in determining if the range of site concentrations is within the range of background concentrations. An elevated site:background ratio of two inorganics relative to the ratio of two inorganics in background samples can be used as evidence that the site concentrations are elevated above background.

Finally, our approach is consistent with and follows long-standing and accepted statistical procedures for determining differences among group. Background is a range of concentrations. The appropriate comparison between concentrations at a site and background concentrations is a statistical comparison of the two data sets. Specifically, the statistical comparison should be based on describing significant differences between a measure of

central tendency of the background and site data distributions. Note that our proposed approach is applicable only to site comparisons to background concentrations. It is clearly appropriate to compare site data to a threshold value such as the concentration associated with an allowable risk level or a regulatory concentration such as a sediment or water quality standard, because such values do not have a range associated with them. However, comparisons of site data to threshold concentrations require different statistical procedures than the ones described in this comment.

The Navy believes that adoption of our recommended site-to-background comparison approach will provide both Ecology and managers of sites with hazardous substances a more accurate and more technically defensible approach to determining whether concentrations at a site exceed either area or natural background concentrations.

Table A-1
Probability That One or More Site Measurements of a Single Chemical Will Exceed Either the 80th or 90th Percentile of the Background Distribution if the Site and Background Distributions Are Identical

Number of Samples	Probability of Exceedance of 80th Percentile	Probability of Exceedance of 90th Percentile
1	0.20	0.10
2	0.36	0.19
3	0.49	0.27
4	0.59	0.34
5	0.67	0.41
6	0.74	0.47
7	0.79	0.52
8	0.83	0.57
9	0.87	0.61
10	0.89	0.65
11	0.91	0.69
12	0.93	0.72
13	0.95	0.75
14	0.96	0.77
15	0.96	0.79
16	0.97	0.81
17	0.98	0.83
18	0.98	0.85
19	0.99	0.86
20	0.99	0.88
25	1.00	0.93
30	1.00	0.96
35	1.00	0.97
40	1.00	0.99

Table A-2
Probability That One or More Chemical Analyses Will Exceed the 80th Percentile of the Background Distribution if the Site and Background Distributions Are Identical for All Chemicals Analyzed

Number of Samples	Number of Chemicals Analyzed per Sample								
	1	2	3	4	5	10	15	20	25
1	0.20	0.36	0.49	0.59	0.67	0.89	0.96	0.99	1.00
2	0.36	0.59	0.74	0.83	0.89	0.99	1.00	1.00	1.00
3	0.49	0.74	0.87	0.93	0.96	1.00	1.00	1.00	1.00
4	0.59	0.83	0.93	0.97	0.99	1.00	1.00	1.00	1.00
5	0.67	0.89	0.96	0.99	1.00	1.00	1.00	1.00	1.00
10	0.89	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
15	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
20	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Table A-3
Probability That One or More Chemical Analyses Will Exceed the 90th Percentile of the Background Distribution if the Site and Background Distributions Are Identical for All Chemicals Analyzed

Number of Samples	Number of Chemicals Analyzed per Sample											
	1	2	3	4	5	10	15	20	25	30	40	50
1	0.10	0.19	0.27	0.34	0.41	0.65	0.79	0.88	0.93	0.96	0.99	0.99
2	0.19	0.34	0.47	0.57	0.65	0.88	0.96	0.99	0.99	1.00	1.00	1.00
3	0.27	0.47	0.61	0.72	0.79	0.96	0.99	1.00	1.00	1.00	1.00	1.00
4	0.34	0.57	0.72	0.81	0.88	0.99	1.00	1.00	1.00	1.00	1.00	1.00
5	0.41	0.65	0.79	0.88	0.93	0.99	1.00	1.00	1.00	1.00	1.00	1.00
10	0.65	0.88	0.96	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
15	0.79	0.96	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
20	0.88	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
25	0.93	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
30	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
40	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
50	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

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APPENDIX B

Comments on Sediment Management Standards

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INTRODUCTION

The Washington Department of Ecology promulgated the Sediment Management Standards (SMS) rule in 1991 to reduce and ultimately eliminate adverse effects on biological resources and significant health threats to human from surface sediment contamination. The U.S. Navy as well as other government and private parties have applied the SMS to their sites in the past. The SMS underwent minor revisions in 1995 and is currently under a second phase of revisions which appear in the June 1999 rule amendments. Substantive changes have been made and new sections have been added to the June 1999 draft rule.

The focus of our review was to evaluate the changes and new sections added to the rule and to provide Ecology with our comments and recommendations for improvement.

Our comments on the draft SMS rule are separated into two sections. General comments refer to issues of a general nature regarding the overall rule. Specific comments discuss issues in more detail and address specific subsections of the rule.

GENERAL COMMENTS

1. Application of Freshwater and Low Salinity Sediment Management Standards. The Navy has two concerns regarding the proposed toxicity testing criteria for freshwater and low salinity sediments. First, although toxicity tests can be used to assess the response of test organisms during exposure to sediment, the tests do not by themselves identify the source of the observed organism response. For example, there may be no anthropogenic contamination of a sediment, but toxicity tests can and do fail because of other sediment characteristics (e.g. high ammonia or sulfide levels, low organic carbon content, improper grain size range for the test organism). The Navy believes that sole reliance on toxicity tests does not provide the necessary linkage between site contaminants and adverse biological effects required to design efficient remedial activities for a site.

Second, we are unclear how the proposed toxicity testing criteria for freshwater and low salinity sediments will be used in remedial decision making at hazardous waste sites. Although we understand that failure of toxicity tests may result in remedial actions being taken on sediments, it is not clear how the area for which remedies will be implemented is to be defined, nor is it clear how remedial activities and costs will be allocated at sites with multiple contaminant sources. While toxicity tests should clearly indicate whether sediments elicit adverse effects on benthic biota, the tests proposed for use do not identify the specific toxicants eliciting the observed effect. Without this knowledge, there is no readily apparent method by which the source(s) of the toxicity can be identified. The lack of knowledge of the source(s) of toxicity limits remedial options to removal of sediment, limitation of exposure to contaminated sediment, or natural attenuation. Identification of contaminant source control methods is not possible, nor are allocations of remedial efforts and costs among multiple sources of contaminants. We believe that numeric sediment quality criteria in conjunction with the proposed toxicity testing protocols would provide a much stronger technical justification for any proposed modifications of and additions to the narrative freshwater and low salinity sediment management standards.

2. Cleanup Standards for Human Health Protection. The Navy has on several occasions made known to Ecology its concerns regarding the approach to deriving human health based sediment quality guidelines. Although our specific concerns are numerous, our specific concerns fall within one of two transcending issues.

Issue 1. The procedures used to derive human health sediment quality guidelines lack sufficient accuracy, precision and a solid technical basis for use in a regulatory context.

Issue 2. At least for polychlorinated biphenyls (PCBs), the human health sediment quality guidelines are not useful in defining remedial actions to be taken at contaminated sites.

Detailed descriptions of our concerns are provided in our specific comments. This general comment provides an overview of our specific comments.

There are severe technical and practical limitations to the approach for deriving human health based sediment cleanup levels. From the technical standpoint, the actual association between contaminant concentrations in sediment and fish sampled from the same area is highly uncertain. This is particularly true for fish with large home ranges, pelagic fish species, and for contaminated sediment sites with small areas. The seafood consumption scenario proposed in WAC 173-204-571 to derive sediment cleanup standards for protection of human health does not explicitly describe the human population the rule is intended to protect. The seafood consumption scenario also suffers from technically questionable input parameters and a computational method which differs slightly from that used by the U.S. Environmental Protection Agency to estimate human health risks from seafood ingestion. From a practical standpoint, the goal of the draft SMS rule is to protect humans consuming seafood. A link between remediating contaminated sediments at a site and reducing human health risks cannot be assumed. In some instances, it is possible that remediation of contaminated sediments will have little or no effect in reducing contaminant concentrations in fish.

Because of these limitations, we recommend that Ecology delete WAC 173-204-571 from the SMS rule until such time that the technical defensibility of human health based sediment management standards can be strengthened.

3. Utility of Microtox in Deriving Marine SMS. We have concerns regarding the use of the Microtox text in deriving marine apparent effects threshold (AET) values, and its utility in the marine and low salinity toxicity testing portion of the Sediment Management Standards. Adverse effects of contaminants in the Microtox test normally manifest themselves as a reduction in light emission, however, increases in light emission are frequently noted after exposure to marine sediments. An increase in light emission at the end of the test is considered to represent an adverse effect of the sediment, even though it is unknown whether an increase in light emission over control light emission actually represents an adverse effect to the test organism. We believe that the Microtox test should be eliminated as an acceptable toxicity test for marine sediments. Additionally, we do not believe that Microtox is an appropriate endpoint for the derivation of marine sediment AET values. We recommend that Microtox not be included in the database used to derive marine sediment AET values. Elimination of Microtox from the AET database would require a recalculation of a number of the marine sediment quality standard (SQS) and cleanup screening level (CSL) values within the Sediment Management Standards. We also do not believe that the Microtox test is an appropriate chronic effect toxicity test for low salinity sediments, as described in WAC 173-204-310, page 22, and should be eliminated from SMS for these purposes.

4. Persistent, Bioaccumulative and Toxic (PBT) Chemicals. Both Ecology and the U.S. Environmental Protection Agency are currently developing initiatives and procedures for reducing the concentrations of PBT chemicals in the environment. While the PBT initiatives should not affect the development and definition of sediment biota toxicity test procedures, benthic infauna analyses or chemical SQS or CSL values intended to protect benthic biota, the PBT initiatives also call for protection of biota higher in the food web such as pelagic fish, birds and mammals. One of the purposes of the SMS is to reduce and ultimately eliminate adverse effects on biological resources from surface sediment contamination (WAC 173-204-100). The biological resources historically given protection under the SMS have been benthic species.

If Ecology intends to modify the purpose of the Sediment Management Standards to be consistent with PBT initiatives designed to protect, in addition to benthic species, pelagic species, birds and mammals, the Navy believes this to be a major alteration in the purpose of the SMS. The Navy further believes that a potential change of this magnitude would require modifications in the methods to derive the SQS and CSL values, so that they would be protective of higher trophic level species. A change in the purpose of the SMS from protecting solely benthic species to protecting all members of a food web requires, in our opinion, extensive discussion and public comment prior to any such change in purpose of the SMS. The rationale and justification for any such expansion of the scope of the SMS must be clearly presented. It is unclear whether incorporation of procedures to evaluate ecological effects of PBTs on higher level organisms is appropriate within the historical scope and mandate of the SMS.

SPECIFIC COMMENTS

WAC 173-204-100 (7), p. 5. The goal of maximum acceptable human health threat from carcinogenic chemicals within the SMS and the Model Toxics Control Act (MTCA, which contains a maximum allowable risk of 10^{-6} for single chemicals and 10^{-5} for total risk from all chemicals) has a potential for conflict with national guidance for

acceptable risk ranges of carcinogenic chemicals at federal Superfund sites (acceptable range is 10^{-6} to 10^{-4}). This potential implies that site remedies acceptable under federal programs may not be acceptable under SMS. It should be clearly stated within SMS that the upper end of the acceptable risk range under federal programs is not acceptable under SMS.

WAC 173-204-130 (2), p. 8. We are aware that Ecology has attempted to minimize the differences between SMS and MTCA, nevertheless, differences remain. It would be useful to have a central location within SMS (possibly an appendix) where the differences are compiled in one location. This would serve as a useful reference for both Ecology and the regulated community.

WAC 173-204-200, Definitions, p. 11 - 18. In many locations in the draft SMS where toxicity testing and or benthic infauna procedures are described, a number of proposed changes have been made changing the word "shall" to "must" (WAC 173-204-310, p. 23, for example, has a number of such instances). Within the toxicity testing and benthic infauna protocols developed by the American Society of Testing and Materials (ASTM), the words "must", "shall", "may" and "should" have specific meanings. In order to improve clarity within the SMS, Ecology should define the words "must", "shall", "may" and "should", at least within the context of toxicity testing and benthic infauna analyses, then use the appropriate words as needed throughout the SMS. As an example, ASTM defines Amust≅ as expressing an absolute requirement, while "should" states that the specified condition is recommended and ought to be met if possible.

The definition of freshwater, low salinity and marine sediments is based on the salinity of sediment pore water. While we have no difficulties with the definitions presented, we believe it is appropriate to provide a reference within the SMS to one or more acceptable analytical procedures to measure salinity in sediment pore water.

The term "low salinity sediments" seems somewhat inappropriate for sediments with as high as 25 parts per thousand salinity. Consider changing this term to either "brackish sediments" or "estuarine sediments."

Please provide a definition for the term "biological resources." This is particularly important in light of our General Comment 4 regarding PBT chemicals and any proposed changes in the definition of the species the Sediment Management Standards are intended to protect.

In Definition 14 on page 13, the term "Department of Ecology" should be capitalized.

WAC 173-204-200(8), p. 12 and Footnote 62, p. 97: Footnote 62 describes a lipid and organic carbon normalized formula for calculating a BSF. This formula is applicable to nonionic organic chemicals, may possibly be applicable to ionic organic compounds such as phenolics, but is not be applicable to metals. Footnote 62 is also inconsistent with WAC 173-204-200 (8), the biota-sediment ratio (BSR), which provides several alternative methods for calculating a BSR. Footnote 62 should be modified so that it clearly indicates the chemicals to which the formula in the footnote is applicable, and discuss the possible problems in lipid and organic carbon normalizing ionic organic chemicals. The terminology in WAC 173-204-571 (3), page 97, including that of Footnote 62 and WAC 173-204-200 (8), p. 12 should be made consistent. Either call the relationship between a chemical concentration in aquatic biota and the chemical concentration in sediment a biota-sediment ratio (BSR) or a biota-sediment function (BSF) throughout the rule.

WAC 173-204-200(26), p. 15. It is unclear what the term "background" refers to in this definition. Is it the national background cancer rate (approximately 1 in 4) or the background cancer rate for people consuming fish from Washington? If it were the later, it would have implications for WAC 173-204-571. For example, if background was defined as the regional reference area contaminant concentration in biota and/or sediment, the tissue screening values and or sediment cleanup objectives would be adjusted to represent the incremental risk above regional background. The language in this definition should be clarified.

This definition of "no significant human health threat", as written in the draft SMS calls for a determination of risk to both the general population and highly exposed population groups. The draft SMS proposed computational procedures to define fish tissue and sediment concentrations of chemicals protective of humans in WAC 173-204-571, p. 96 - 97 permit the evaluation of only one exposure scenario, not two. Also, the draft SMS rule does not explicitly describe whether the exposure scenario presented in the draft SMS is protective of either the general

population or a highly exposed population group. An exposure scenario representing the exposure to contaminants of the general population would differ from the exposure scenario of a highly exposed population group. Any given chemical concentration in sediment and/or edible tissues of fish or shellfish would result in very different estimates of human health risks depending on the exposure scenario. The draft SMS rule should explicitly state whether the cleanup standards proposed in WAC 173-204-571 are protective of either the general population or a highly exposed population group.

WAC 173-204-310, (1)(b)(i)(A-F), Benthic Infauna Evaluation Methods, p. 22. The additional alternative benthic evaluation indices referred to in footnote 26 must be provided for review and comment prior to incorporation into the SMS. Furthermore, any statistical guidelines for comparing benthic infauna endpoints to reference area conditions should also be presented within the SMS. A statistical test for abundance is provided, but no statistical tests are provided for any of the other benthic infauna evaluation methods in this section.

We question the value of taxonomic analysis to the species level as opposed to the "lowest practicable taxon" guideline commonly used in calculation of benthic community indices. Not all taxa are readily identified to species, and the added accuracy gained in index calculation may not be worth the added time and expense, nor may it significantly modify the conclusions of the benthic community analyses. We recommend that benthic taxonomy proceed to the lowest practicable taxon, and not to the species level in all analyses as implied by footnote 26. We note that the narrative for benthic abundance evaluation at WAC 173-204-310 (2)(c) on page 23 calls for taxonomic identification to the lowest level possible, usually species. This statement implies that species level identification, while desirable may not always be required, a position which differs from that given in footnote 26.

WAC 173-204-320 (1), Applicability, p. 27 and Footnote 33. We recognize the need of Ecology to develop chemical sediment quality guidelines for all marine sediments in the State of Washington, not just sediments within Puget Sound. Although we cannot identify toxicological reasons which preclude the application of the existing SQS and CSL values to all marine sediments in the state, we question the technical defensibility of doing so with only minimal supporting toxicological evidence from non-Puget Sound marine locations. Perhaps Ecology=s review of marine sediment toxicology data could be expanded to the east coast of the United States as well as the west coast, as many of the species used in toxicity testing are present on both coasts. If such an expanded review finds no significant difference in sensitivity to chemicals between marine species elsewhere and the available Puget Sound data, we believe the existing chemical SQS and CSL values can be applied to all marine sediments in Washington.

WAC 173-204-320, Table III, p. 29-30. We are pleased to note that Ecology is using an updated AET database to derive the SQS and CSL values. However, the lowering of a number of the SQS and CSL values implies that many of the older values were underprotective of benthic biota. If Ecology believes that the original SQS and CSL values were in some cases underprotective, does Ecology intend to reevaluate sites where remedial decisions and sediment cleanups were based on the older SQS and CSL values?

Please define in a footnote the meaning of the term EP, found in parenthesis after the 100 mg/kg organic carbon SQS value for phenanthrene (equilibrium partitioning?).

WAC 173-204-320 (6), Nonanthropogenically Affected Sediment Quality Criteria, p. 32. If regional reference area or background sediment concentrations are to be used in some instances as the sediment quality guidelines, reference needs to be made here to the source of the data and the computational procedures used to derive nonanthropogenically impacted chemical concentrations in sediment.

WAC 173-204-330, Low Salinity Sediment Quality Standards, p. 32 - 33. We have already noted our opposition to the use of the Microtox test as a sediment quality assessment procedure in low salinity sediments. If Ecology desires to utilize chemical sediment quality guidelines such as the Cubbage (1997) values as an additional interpretive or screening tool in assessing low salinity sediment quality, the guidelines should be incorporated into the SMS, and made available for review and comment prior to finalizing the revisions of the SMS.

WAC 173-204-340, Freshwater Sediment Quality Standards, p. 33. The freshwater interpretation criteria discussed in footnote 37 must be made available for review and comment prior to its incorporation into the SMS. If Ecology desires to utilize chemical sediment quality guidelines such as the Cubbage (1997) values as an additional

interpretive or screening tool in assessing freshwater sediment quality, the guidelines should be incorporated into the SMS, and made available for review and comment prior to finalizing the revisions of the SMS.

WAC 173-204-350 (3), Sediment Quality Standards Inventory, p. 36. Please capitalize the term AEnvironmental Protection Agency.≅

WAC 173-204-520 (4), Minimum Cleanup Levels, p. 70. The sentence, "Cleanup screening levels and minimum cleanup levels based upon human health protection shall be that quality which corresponds to maximum acceptable human health threat." Should be changed to read, "Cleanup screening levels and minimum cleanup levels based upon human health protection shall be that quantity which corresponds to the maximum acceptable human health threat." It is unclear whether the quantity that corresponds to maximum acceptable human health threat is equivalent to the human health sediment cleanup objectives or minimum cleanup levels defined in WAC 173-204-571. Language should be added to this section to clarify this point.

WAC 173-204-571, Cleanup Standards for Human Health Protection, p. 94 - 98. The Navy has a number of specific concerns regarding the approach proposed to derive sediment cleanup standards for human health protection. Our technical concerns fall into two broad categories, the proposed fish/shellfish consumption and exposure scenario, and biota-sediment ratio issues. The Navy also has a concern regarding the utility of cleanup standards in remedial decision making under some circumstances. This comment is divided into three sections: consumption and exposure scenario issues, biota-sediment ratio issues, and remedial decision utility issues.

Fish consumption/exposure scenario issues. The Toy et al. (1996) consumption survey which form the basis of Ecology=s recommended marine fish consumption rates are based on Native American consumption rates. They represent Native American total fish and shellfish ingestion rates. The draft SMS does not provide any information regarding the consumption rates of other exposed populations. Specifically, the draft does not attempt to estimate consumption rates for non-tribal recreational fishermen, a population of great concern. Although we are keenly aware of environmental justice concerns, there is no evidence presented that the proposed consumption rate is comparable to, valid for, representative of or applicable to non-tribal fishermen consumption rates. This is true for both other minority groups and the recreational fishing exposure scenario, which at most sites consists of individuals from a number of ethnic and minority groups.

The Navy believes that while use of a fish consumption rate based on a Native American receptor population may be appropriate during some risk assessments, it would be inappropriate to use this rate for development of sediment cleanup/remediation levels unless a Native American population is identified as a receptor for a particular site.

We do not believe that the default fish consumption scenario provided in the draft SMS will result in point estimates of the fish tissue screening value, or the sediment cleanup objective. The calculation does not address the significant conservatism in the exposure duration, fraction ingested from contaminated source, and fish tissue concentration input parameters. In addition, it does not address the relevance of a default fish ingestion rate for a high consuming subpopulation of Native Americans to recreational anglers, which are the exposure scenario of concern at many (if not most) sites in Washington where fish consumption is a potentially complete exposure pathway. For the marine fish consumption pathway, the total fish consumption rates developed from the Toy et al. (1996) study are based primarily on consumption of anadromous fish (which make up over 80 percent of the mean consumption rate for total finfish); applying this consumption rate to fish species with higher levels of contaminants (such as bottom fish) will result in severe overestimation of risk, far in excess of a reasonable maximum exposure. It may also result in a situation where remediation could be required at a site, but where no significant decrease in human health risks from fish consumption would be observed after remediation, because the fish are bioaccumulating the majority of their body burden of chemicals outside of the site undergoing remediation.

The draft SMS incorporates no consideration of fisheries biology issues which could serve to produce a different fish ingestion rate. The marine fish ingestion rate incorporates anadromous fish consumption as the largest single portion of the total consumption. While anadromous fish comprise a substantial portion of the fish consumption scenario, the life history of anadromous fish indicates that a very large proportion of their contaminant body burdens is bioaccumulated from the north Pacific Ocean. Relatively little of their contaminant body burdens are accumulated in either the nearshore marine or fresh waters of Washington. By including anadromous species in the

consumption rates, the contaminant intake by and subsequent risk to humans from contaminant sources under the regulatory authority of Ecology is overestimated.

Other fisheries issues not considered include the inclusion of both freshwater and marine species in the marine fish ingestion rates derived from data in Toy et al. (1996), which serves to overestimate the consumption rate of marine species alone. The proposed scenario may not be a realistic exposure scenario for physically small sites with few fish, or for larger sites which have limited fish and shellfish resources. Use of the proposed consumption rates would overestimate risks for such locations. If the catch from anadromous salmon fisheries is reduced or eliminated due to endangered species considerations, what effect will that have on the proposed consumption rates? Catch rates change with time, resulting in changes in both the relative proportion of each species consumed and the absolute quantity of fish available for consumption.

Ingestion rates for the various fish species evaluated in Toy et al. (1996) are known to vary, but these different ingestion rates are not taken into account. At many sites, the largest human health hazard comes from ingestion of bottom fish, the species which are normally exposed to the higher chemical concentrations in sediment relative to chemical concentrations found in the water column. It would be inappropriate to use an ingestion rate based largely on anadromous salmonids to define sediment cleanup values from consumption of bottom fish, whose consumption rate is much lower. By their habitat requirements and feeding preferences, bottom fish are likely to bioaccumulate higher body burdens of contaminants from sediment than will pelagic (water column) fish species.

Risk assessment practices typically assume that only a fraction of the total fish consumed is obtained from any specific area of concern. This assumption is the basis for the inclusion of a "fraction ingested from contaminated source" term in the U.S. Environmental Protection Agency (1989) basic risk assessment formula. A fraction ingested term is missing from the default exposure scenario input parameters proposed by Ecology. Equations 1 and 2 (p. 96) should be expanded to allow for inclusion of an exposure factor representing the fraction ingested from the site. Toy et al. (1996) contains information that less than 100% of fish consumed come from any given source. Our concern is that the assumption that the seafood harvester will obtain all of their fish or shellfish from the site is unrealistic and may lead to a biased decision on whether sediments at the site pose a significant human health threat.

We recommend that the SMS include provisions for modifying the ingestion rates based upon site-specific information on the presence of fisheries resources at the site, harvest patterns, and the association of tissue concentrations to exposure to sediment-borne contaminants at the site. Basing a site-specific sediment cleanup decision on tissue data from anadromous fish is not technically defensible. Modification of the ingestion rates and exposure scenario from that proposed in the draft SMS would be considered an outcome of the first tier of the decision-making approach described in WAC 173-204-571 (1)(a).

The fish consumption and exposure scenario proposed in WAC 173-204-571 makes no provision for incorporation of site-specific information about seafood consumption or the sources of the seafood consumed. For this reason alone, the Navy does not believe WAC 173-204-571 serves as an acceptable method to calculate human health based sediment cleanup levels. The previously described problems with various portions of the consumption and exposure scenario leads us to conclude that the proposed approach to derive human health sediment cleanup standards is not sufficiently scientifically defensible to permit its use in the SMS rule.

<u>Biota-Sediment Ratio Issues.</u> Biota-sediment ratios (BSRs), irregardless of how they are calculated, have a large amount of variation associated with them. We do not believe that BSRs are sufficiently accurate to permit their use in a regulatory standard. One of the sources of variation in published BSR values which Ecology could evaluate to possibly reduce BSR variability and uncertainty is whether a given tabulated BSR value is calculated using a whole body animal to sediment ratio, or an edible tissue (e.g. fillet) to sediment ratio. An edible tissue based BSR for hydrophobic chemicals actually represents chemical partitioning between various lipid pools within the animal, not a sediment to edible tissue partitioning. This is because chemicals bioaccumulated from sediment do not directly enter the edible tissue, instead, they are transported from the site of uptake (gills or the digestive tract) to the edible tissue. The extra partitioning involved between tissue types may account for some of the observed variability in published BSR values.

The rationale behind the requirements for defining which species are or are not suitable for use in predicting bioaccumulation from a given sediment concentration (or conversely, predicting an

acceptable sediment concentration from a defined tissue residue in fish) is found in Connolly and Glaser (1998) and Landrum (1998). The route of exposure by which a fish bioaccumulates contaminants is the major determinant to the applicability of BSRs to predicting chemical concentrations in sediment or tissue. Fish which do not feed directly on sediment, or at least on benthic prey, are inappropriate species with which to try and make a connection between sediment chemical concentrations and residues in fish (Landrum 1998, p. 1-53 to 1-54). Fish BSRs assume an equilibrium between sediment and fish chemical concentrations. It is well documented that BSRs can vary with sediment type, location relative to a contaminant source, time, and species (Connolly and Glaser 1998, PTI Environmental Services 1995). To the extent that a single BSR value, irregardless of its source or derivation, does not describe the invariant equilibrium relationship implied by its use for all fish species of interest in a tissue residue based approach to sediment quality criteria development, the BSR value cannot be applied in the definition of sediment guidelines (Connolly and Glaser 1998).

The absence of or low correlation between sediment contaminants and body burdens in demersal or pelagic fish can be illustrated in literature values of BSRs for these types of fish. For example, Pelka (1998) observed that site-specific BSRs for PCBs in walleye (a pelagic species) averaged between 0.07 - 0.3, while PCB BSRs for carp (a demersal species) averaged between 0.4 - 0.6. These values are well below the 25th percentile biota-sediment accumulation factor (BSAF) for all fish species in the U.S. Army Corps of Engineers BSAF database (McFarland 1998), indicative of species whose contaminant body burdens either are not at equilibrium with the sediment or are not significantly exposed to sediment contaminants (e.g. their contaminant burdens come primarily from the water column or trophic transfer). This difficulty with the application of BSAFs and BSRs is also noted in the Tier II (WDOH 1996, p. 21) guidance for deriving human health based sediment quality criteria. Based on the difficulty in accurately relating sediment contaminant concentrations to tissue residues in non-benthic fish species, the Navy recommends at the very least to exclude demersal and pelagic fish from the tissue screening value and sediment cleanup calculations for human health, and recommends that WAC 173-204-571 be eliminated from the draft SMS.

Remedial Decision Utility Issues. The Navy has concerns that in some instances, the proposed approach for human health based sediment cleanup standards provides no useful information to the remedial decision making process at contaminated sediment sites, and may in fact be misleading regarding the magnitude of contamination problems for certain chemicals.

Using the exposure assumptions presented for Equations 1 and 2 of the draft SMS (page 96) and polychlorinated biphenyls (PCBs), whose cancer slope factor is 2.0 $mg/kg/day^{-1}$ as an example chemical, the maximum PCB concentration in fish which would not result in exceedance of a lifetime 1 H 10^{-6} incremental increase in cancer risk is 2.2 µg/kg (parts per billion) total PCB. This PCB concentration is as low or lower than the measured PCB concentrations in fish observed in the Puget Sound Ambient Monitoring Program (PSAMP) at all of the nearly fifty sampling locations monitored during the history of PSAMP, including reference sites minimally impacted by anthropogenic PCB inputs. Such an observation, if not properly presented to the general public, could lead to questions such as "Do we need to remediate all of Puget Sound, the Strait of Georgia and the Strait of Juan de Fuca under SMS and/or MTCA (which has a maximum acceptable risk level of 1 H 10^{-6} for individual chemicals, 1 H 10^{-5} for the total risk from all chemicals)?", or "Are Puget Sound fish unsafe to eat?"

Given the low tissue residues of PCBs in fish which could trigger sediment cleanup, the Navy questions whether Ecology intends to promulgate a rule which apparently indicates that all of Puget Sound contains fish with excessive PCB concentrations requiring sediment cleanup. For PCBs, both risk-based and background or reference area based method of identifying sediment cleanup standards result in PCB sediment standards which cannot be met and maintained using existing technology. We believe that a cleanup level which cannot be met is inappropriate for remedial decision making at contaminated sites. If Ecology truly believes in the need for the restrictive PCB human health based sediment cleanup standard being proposed, we recommend that Ecology provide the toxicological evidence which supports the need for the proposed PCB cleanup standard.

Finally, we recommend that for chemicals such as PCB and BaP, with human health risk-based sediment quality standards which are lower than Puget Sound sediment background concentrations of these chemical, Ecology consider defining a third class of sediment cleanup standards, in addition to the already proposed sediment cleanup objectives (a concentration based on background chemical concentrations in sediments from non-anthropogenically impacted reference areas), and sediment quality standards (the long-term target chemical concentration which Ecology would like to see remediated sites eventually attain). Our third proposed class of sediment cleanup standards is implementable standards, which would describe the actual concentrations to which a site would have to be remediated. Implementable standards would be based on the technical and economic feasibility of remedial activities, and would explicitly recognize that the remedial technology required to meet both a short-term sediment cleanup objective of Puget Sound background and a longer-term risk-based sediment quality standard may not exist.

WAC 173-204-571(3)(b), Multiple Site Unit Cleanups, p. 95. This section states that multiple site unit cleanup standards may be defined for a site. Site units are defined in WAC 173-204-200 (Definition 41, p. 17) where divisions are based upon consideration of unique locational, environmental, spatial, or other conditions. WAC 173-204-571 (5)(a) states that sites may be divided into units based upon the likelihood of exposure. However, a fairly rigid framework is presented for calculating sediment cleanup objectives and minimum cleanup levels which leads us to question how multiple site unit cleanup standards would be calculated and implemented. The only instance where flexibility in the approach to calculating site-specific sediment cleanup objectives appears is in WAC 173-204-571(3)(b)(iv) where the term "may" is used. Language should be added to WAC 173-204-571(3) and (4) which states other methods, approaches, and/or exposure factors may be used to derive cleanup standards.

WAC 173-204-571 (3), Cleanup Standards for Human Health Protection, Equations 1 - 4, p. 96 - 97. The text of this section should be modified to note that Equations 1 and 3 are only applicable for carcinogenic chemicals, while Equations 2 and 4 are applicable only to non-carcinogenic chemicals.

WAC 173-204-571 (3)(c), Area-Wide Sediment Quality, p. 97. The phrase "sediment quality shall be identified on an area-wide basis as determined by the department" does not provide the method by which area wide sediment quality is determined. Either additional language describing how area wide sediment quality is determined should be provided in the SMS or supplemental guidance material to the SMS is needed.

WAC 173-204-571 (5)(b), Exceedance of Cleanup Standards, p. 98. The phrase "greatly exceed the cleanup standard" is vague and subjects the potentially liable party to an undefined compliance standard. The section should be deleted or a more quantitative and/or statistical description of exceedance of the cleanup standard should be provided.

WAC 173-204-571 (4)(a), Minimum Cleanup Levels, p. 97 - 98. The minimum cleanup levels for contaminants in Table V-B are set at the lower of either five times the sediment cleanup objective or the 25th percentile Puget Sound sediment concentrations. For PCBs, the reference area concentration of 1.2 mg/kg OC is the 90th percentile of the reference area data for Puget Sound. Since the 25th percentile will be less than the 90th percentile, use of the 25th percentile as the minimum cleanup level does not appear to be of much value, unless it refers to the 25th percentile of all Puget Sound sediment data, and not the 25th percentile of only the Puget Sound reference area data. The source of the 25th percentile data should clearly be described in this section. The rationale for selecting five times the sediment cleanup objective as the minimum cleanup value also appears arbitrary and is inconsistent with the factor of ten that is used to set the cancer risk minimum cleanup level in subsection (b). It is recommended that the minimum cleanup level for chemicals in Table V-B be set at ten times the sediment cleanup objective.

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Akana, Trish Alicia

From: Greg Wingard [gwingard@earthlink.net]
Sent: Friday, January 14, 2000 4:31 PM
To: Trish Akana
Subject: MTCA comments Phase I

MTCAprinciples.doc MTCAgwcom1.1400.doc

Trish:

Some initial comments on the MTCA rule. More will be coming shortly. Thanks for the effort you have been putting out on moving the rule along. Hopefully we will be getting the rule out this year.

Greg Wingard,
Executive Director
Waste Action Project

reply 20
Page 1 of 7

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Principles for MTCA Revision

July 23, 1998

556 The Model Toxics Control Act is a law that was conceived, written, and enacted by and for the people of Washington State. Changes to the administrative rules that implement this law must be consistent with the spirit and intent of the law as enacted by the vast majority of voters in the State of Washington. A primary purpose of the revised rules should be to eliminate the potential for the accumulation of toxic wastes in the environment. The purpose of these principles is to provide guidence for the protection of human health, the environment and rights of the current and future generations.

557 1. All groundwater, potable or non-potable, belongs to the people and wildlife of the State of Washington. It is a valuable public and natural resource that must be aggressively protected. Use of groundwater for disposal of waste is not acceptable.

558 2. The people of Washington have the right to a clean environment and to have their health protected from exposure to hazardous chemicals. Metals and organic wastes, particularly those that bioaccumulate and that persist in the environment, are a primary concern. These include metals and organic wastes that cause cancer, birth defects, immune system damage, reproductive problems, neurological injury, hormone disruption and other problems. Any change to the MTCA rule must strengthen protection of the public and wildlife from such chemicals.

559 3. Petroleum waste clean-up must meet certain minimum goals. Free product must be removed and recycled or appropriately treated unless such removal is demonstrated to be not possible. Groundwater must be protected from contamination. Saturated or heavily contaminated soils must be removed, recycled, treated, or disposed of. Residual contamination must be subject to best available treatment technology. Natural biodegradation can only be used on remaining contamination after determining that such biodegradation is feasible; the process must be monitored, and successful results must be demonstrated within a five-year period. Otherwise, removal, recycling or active treatment must follow. Protective limits must be set to protect groundwater from secondary effects of biodegradation, such as oxygen depletion and accumulation of metals caused by potential anaerobic conditions. The limit on oxygen depletion of groundwater should be determined by analyzing the background oxygen level in the groundwater formation and setting a limit of 10% less oxygen than that level. Potentially liable parties must not allow TPH contamination to migrate through groundwater, contaminating an ever greater amount of this precious resource.

560 4. Institutional controls for MTCA clean-up sites can only be used where it can be demonstrated that the institutional control(s) will last for the period of time that the waste will remain a hazard. Institutional controls can not be used to allow contamination to migrate off the area of the property defined as the MTCA site. It is a crime against our descendants to allow increasing amounts of land, sediment, surface, and groundwater to be contaminated to the extent that use is restricted, or a perpetual danger.

561 5. Clean-up standards must be based on and protective of the most sensitive populations, including pregnant women, unborn children, children and most sensitive wildlife and plant species.

562 6. In implementing MTCA, Ecology and Potentially Liable Parties must demonstrate permanent elimination of contact with Bioaccumulative Contaminants of Concern, or demonstrate such total elimination is not possible.

563 7. The Act provides that public participation in decisions related to MTCA is a primary public right. That right must be maintained and maximized in any changes to the rules, and in the process for proposing, considering and adopting changes. Public participation must fully address social and environmental justice, including addressing ethnic, and economically disadvantaged populations in proximity to MTCA sites.

564 8. The people of Washington have a right to permanent clean-ups. Contamination cannot be left as a financial burden, threat, or limit on the use and enjoyment of property by future generations, merely to benefit the present one.

565 9. Each proposed change to the MTCA rule must be evaluated for its benefit, lack of benefit, or potential to cause harm to salmonids, and to any other species that is listed as endangered or is a candidate for listing. Officials at every level of state and local government have paid lip service to the need to protect salmonids and other at-risk species. In spite of this, specific consideration of the impact on salmonids and other at risk species from the MTCA rule changes has not occurred.

566 10. As a matter of the legal basis of our Statehood as ratified by the Legislature, obligations under treaties and Executive Orders as issued by the Governor of the State of Washington, Tribal sovereignty must be recognized and addressed in any change to the MTCA Rule. This includes, but is not limited to, meeting the government to government protocol as already established in the State of Washington and recognize Tribal environmental agencies and any standards they have established, or are considering.

xxx

To: Jim P., Curtis D., Pete K., Trish A.

From: Greg Wingard

Re: Our favorite subject, MTCA

February 5, 1999
with minor revision January 14, 2000

567 The MTCA rule process, as carried out over the last years for this rule making has had the impact of greatly enhancing the ability of industry to influence the rule, while virtually assuring that the public would remain uniformed and largely without the ability to participate and provide informed input. It is incomprehensible to me that a statute that demands active meaningful public participation would go through the biggest rule change since enacted with two thirty day comment periods scheduled months apart. Although the comment period was extended, Ecology has set a new record, in creating a comment period that included at least four federal holidays, including the three most commonly associated with out of town travel and extended vacation.

While I believe all of us share a concern about getting this rule out; the time for reviewing and commenting on the rule and associated Draft Environmental Impact Statement has not been sufficient. For example, in spite of being on all the lists for participation related to this matter, I did not get a copy of the DEIS until I got back in town from Christmas vacation. Thanks to Pete Kmet, for forwarding me a copy.

568 The public participation plan should focus its first step on how to present to the public, in understandable form, each change being proposed in the rule, and how each either maintains or improves the level of protection afforded in the present rule. This demonstration of equivalent or better is in keeping with the spirit and letter of the PAC recommendations which indicated that there would not be a decrease in the level of protection afforded.

569 As you know there are a number of areas in the rule that are of particular concern. First off, releases from MTCA sites to surface waters must not be allowed to violate surface water quality standards. It is ridiculous for us to have spent the level of effort and money that we have on diverting industrial and non-point source pollutants out of our surface waters and then turn around and allow polluters to violate the water quality standards from non-active operations and facilities. Also, any MTCA sites that have discharges to waters of the state require a National Pollution Discharge Elimination System permit to do so.

570 While there has been some modest improvement in the TPH cleanup provisions, industry continues to clamor for the right to abandon contamination in the ground and walk away. Ecology has failed to take a strong enough stance on the issue of AKART. A critical and accurate picture of this failure is provided in the February 1999 issue of Scientific American at

570 cont. page 39, Technology and Business, Not Cleaning Up. The articles premise is that faster, cheaper ways to restore polluted ground are largely shunned by business with active assistance from government. One technology highlighted by the article is Steam Enhanced Extraction, which is particularly suited to the removal of solvents, gasoline and heavy oil and oil like wastes like creosote. The article documents from actual cleanups that the technology can perform cleanup up to ten times faster or more that the traditional pump and treat technology, (copies of this article have been supplied to Ecology, and are incorporated in these comments by reference). Yet at petroleum cleanup sites in our state, the option industry always compares to their preferred cleanup plan is the standard pump and treat technology. We need to take the best of what is available and put it to work, for us, our environment and the children that we are planning on leaving all this crap to when we exit the scene. For that reason we are strongly in favor of retaining AKART language in section 720 and believe that removal of that language would be inconsistent with prudent management of the state public water resources and other existing law dealing with water pollution. Please explain why Ecology continues to allow polluters to do inferior clean up of petroleum contaminated sites, when cost effective, efficient methods, such as steam enhanced extraction, are available.

571 Another major issue is the current language regarding Area Wide Point of Compliance. It is my strong belief that alternative points of compliance can only be allowed with Ecology approval, oversight and formal public participation. Alternative points of compliance by their very nature will involve public resources and it is not appropriate or consistent with the MTCA statute to allow such alternate compliance locations as a private deal between Ecology and polluters with no formal participation by the public, whose resources are being impacted by the decision. Please explain Ecology's rational for the current form of the Area Wide Point of Compliance, and how the public right to participate in decision making regarding impact to public resources is maintained.

572 Also in the area of public participation, the rule revision to require ten people or more to request a hearing. While this may be fine in a densely populated urban environment, it is an undue burden in rural or industrial areas where the number of people adjacent to a site or paying attention to a particular site are very few. An example of the latter, the Lidco waste site in Kent, where for the last five or so years, I have been the only person out of the "public" to provide comment on the site. While I agree that eliminating needless public hearings is useful, doing so at the expense of those who have fewer than nine family members, or don't happen to belong to social clubs or environmental organizations is not acceptable and contrary to equal protection under the law. Public participation should guarantee that people who are impacted by toxic sites have the ability to participate in decision making that, by its very nature, will impact their lives. At some sites this will by necessity involve less than ten public participants, or requesters.

573 Another major issue regarding the rule revision relates to implementation. Ecology has been unable to implement the current rule. One sign of this is the massive backlog of independent cleanup reports waiting for agency review. Under the revised rule, Ecology is encouraging more independent cleanups while the Governors budget is calling for massive reductions in the Toxic Cleanup Program including the loss of a significant portion of the existing program staff. How will the agency implement the rule under these conditions?

The answer to this question is of primary importance to the public in commenting on the rule.

574 Another concern related to independent cleanups is best illustrated by the SeaCon Cement Kiln Dust site independent cleanup in South Park, on the Duwamish River, just outside of Seattle. In the "independent cleanup" of this site, CKD was used for pre-loading building pads, the CKD was disturbed with no provision for buttoning up the material in the event of storm events, and site work was carried out immediately adjacent to a Chinook salmon bearing stream in the winter, during the time that Chinook were running. As a result of this stupidity on the part of King County DDES and SeaCon, there were major breaches on both the north and east side of the site, discharging CKD into Hamm Creek, the Duwamish River, and a major wetland adjacent to the site, that is in direct hydraulic connection with Hamm Creek. The pH discharge into the wetland exceeded a pH of 12, and downstream of the site, in Hamm Creek the pH exceeded 9. It is also worth mentioning that this site is supposed to be a major demonstration of brownfields cleanup. If this is how brownfields works, it has no support from the environmental community. It is also worth mentioning that in spite of the massive releases, Ecology was not seen at the site, did not fine the company and generally seemed to avoid any involvement with the site, preferring to leave King County DDES to their own devices.

575 I support the language in the current revision of Section 300 that details what should be reported under MTCA. One of the primary purposes of the PAC was to improve the clarity and ease of use of the rule. For those people out there who are trying to figure out if they have a problem and what their responsibilities are this section is very helpful. Industry comments to the contrary are disingenuous, only serve to make the rule more confusing for the public, and should be ignored.

576 Likewise, the current revision language in Section 330 dealing with the criteria that Ecology will use to remove a site from the MTCA list should remain as is. The language appears to reflect current policy and clarifies for the public and site owners who have limited resources what the bottom line is for limiting the liability associated with site contamination. Clarity on this section is absolutely imperative for those who want to do the right thing in regard to their site contamination, and its removal would only benefit those polluters who hope to get away with something. It also provides a degree of assurance to the public that certain minimal standards are being met in order for a no further action letter to be issued by Ecology.

577 The current language in Section 350 under number 8, d, iv, requires treatment, removal or containment for soils at current or potential future residential areas, schools and day care centers. The removal of this language would be clearly unacceptable as it provides a very modest (in my mind too modest) level of protection to the most sensitive populations ie., pregnant women, the children they are carrying, infants and young children. Allowing any alternative cleanup methodologies that rely heavily on paper controls rather than engineered or active control and elimination is not acceptable and would constitute a significant lowering in the level of protection afforded to those most vulnerable to impact. One change to the existing language that should be made is to add public and private parks to the list for the same reasons already given. Even though the duration of exposure may be limited, people tend to use their favorite parks on a

577 cont. continual basis, which could constitute a significant risk for the many young people using our public and private parks. Also, with the implementation of the American Disabilities Act, many people who constitute the most sensitive population, are actively encouraged to use public and private parks, thus these lands should be maintained in a near pristine condition.

578 In Section 360, the definition of the disproportionate cost test is unacceptable. The new definition does not meet what I believed the agreement represented by the PAC (or son of PAC) was, which was that the word substantial could be removed, but it was understood disproportionate meant a significant difference in cost had to be demonstrated before a more permanent remedy could be rejected. In the existing revision language, the implication is that if it costs more at all it can be rejected. This is not acceptable and could be the grounds for the environmental community contesting the rule if not modified.

Additional comments will be submitted by the Waste Action Project, shortly.

Greg Wingard,
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Akana, Trish Alicia

From: Lyndynr@cs.com
Sent: Monday, January 17, 2000 11:13 AM
To: TAKA461@ecy.wa.gov
Cc: lroberts@techsolvcg.com
Subject: MTCA Rule Revisions

From: Larry Roberts
TechSolv Consulting Group

Trish:

The following are my general comments regarding the proposed MTCA rule:

579 The Proposed Rule has not met the underlying objectives for the rule revisions. Ecology has stated that the fundamental goal for revising the rule is to "make the business of environmental cleanups fairer, easier to understand, more flexible, less ambiguous and less expensive." As a consultant that has worked with MTCA since its promulgation, the Proposed Rule is far more complex and difficult to use. For example, the pathways for development of cleanup levels are far more convoluted and full of road blocks. The Proposed Rule gives a false sense that site clean ups can be risk-based; however, the amount of restrictions placed on each path for using alternative methods to develop cleanup levels removes the intended flexibility.

580 The complexity of the Proposed Rule will increase the cleanup costs at most sites and not meet the stated objective of making cleanups "less expensive". With the degree of complexity for developing cleanup levels, it is hard to imagine that the intended flexibility could be used in any where but large and complex sites. Ecology has admitted in the associated Small Business Economic Impact Statement that cleanup costs are anticipated to increase for most sites. The stated anticipated cleanup cost increase of approximately 20 percent for service stations clearly contradicts the underlying objectives of the rule revisions. In addition, the lowering of several of the already highly conservative Method A cleanup levels will make it more costly and difficult to achieve closure at many sites.

581 The Proposed Rule will result in overly burdensome financial and site use restrictions on small businesses or small sites. For example, the use of any of the "modified" methods to determine TPH cleanup levels appears to trigger mandatory institutional controls. For sites undergoing property transactions, these restrictions are either unacceptable, or cause substantial diminution of property value. In addition, the reductions to the Method A cleanup levels in the Proposed Rule will further increase the financial burden for cleanups at small businesses.

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Weyerhaeuser
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January 17, 2000

Ms. Trish Akana
Rules Coordinator
Toxics Cleanup Program
Department of Ecology
P.O.Box 47600
Olympia, WA 98504-7600

Re: Comments on Proposed Amendment to the Model Toxics Control Act Regulation

Dear Ms. Akana:

Thank you for the opportunity to provide comments on the proposed amended Model Toxics Control Act Cleanup Regulation (MTCA regulation). Weyerhaeuser has participated in the process of amending the MTCA regulation since 1995. Our representative, Kevin Godbout, was an active participant in the 1995-96 MTCA Policy Advisory Committee (PAC). Weyerhaeuser has managed over twenty site investigations/remedial actions under the MTCA program. Our internal expertise with this program is supplemented with routine support from a number of technical and legal consultants. The insights gained from this practical experience and broad knowledge base have been incorporated into our comments.

The Key Issue

582 As with prior drafts of this MTCA regulation modification, a single issue dominates the comments we will offer. That issue is the efficacy of Ecology's effort to translate consensus PAC recommendations into proposed rule language. Our comments will detail many sections of the regulation where the agency has incompletely implemented or simply ignored outcomes agreed to by the PAC. This intransigence, combined with other unilateral agency rule amendments, has yielded a product which will not meet the underlying intent of the 1995 legislative study bill to "fix" MTCA. It will not accomplish the "net gain in the speed, effectiveness, and public and environmental protectiveness of contaminated site cleanups" which the PAC felt was achievable and to which the legislature certainly aspired.

We expect Ecology will receive many critical comments on the draft regulation. These comments will be from the narrow group of experienced professionals most knowledgeable about the regulation. These should be treated as customer complaints. The agency should accept this real-world view of the draft rule deficiencies and determine that significant changes must be made.

583 As a starting point the agency must reconcile any MTCA revision with the PAC outcomes. Our view is that the *Final Report of the Model Toxics Control Act Policy Advisory Committee*,

100 Anniversary

letter was e-mailed on 1/18/00

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December 15, 1996 (hereafter the *Final Report*), should serve as the literal blueprint guiding regulation development. Weyerhaeuser looks forward to be a positive contributor in this activity.

Endorsement of Comments by Western States Petroleum Association

We have intentionally chosen not to develop extensive comments on sections of the draft regulation pertaining to total petroleum hydrocarbon contaminated site investigation and cleanup requirements. We endorse comments submitted by the Western States Petroleum Association.

Format of Comments

The format of our comments will be a statement of the issue of concern, followed by a more detailed discussion of the problem presented by the proposed language, and concluding with a proposed remedy. Major issues are discussed first, followed by more detailed comments addressing specific sections of the rule.

Major Issues

584 Comment #1 <u>The Draft Rule does not adhere to PAC Recommendations</u>

Discussion - The history of this rule amendment activity cannot be forgotten. ESHB 1810 sanctioned creation of the PAC and set the basic scope of work. The broad stakeholder group addressed many difficult issues and consensus recommendations to improve the MTCA emerged. The PAC was touted as the model on how to tap into expertise, rationally discuss complex issues, and decide on the best policy and regulatory improvements. Ecology was a full participant in the PAC and signatory to the final Report. However, in spite of over three years of on-going discussions and rule drafting, there are important PAC recommendations which have not been faithfully translated into proposed rule language. Much of the current disconnect occurred after Ecology took the rule in-house and began drafting language that had not been negotiated or agreed upon by the stakeholders. The issues concern both substance (i.e., accuracy of incorporating the principle) and clarity of regulatory language.

In spite of the statement in the Washington State Register preamble (WSR 99-22-077) addressing the sources of new language, there are many places in the rule where language has been added or revised at the agency's own initiative (i.e., where the source is not the PAC negotiations, outcomes related to the TPH Project Oversight Group process, the Science Advisory Board "recommendations," or the Governor's Executive Order 97-02). While some of these "housekeeping" changes are inevitable, other proposed revisions impose major new process and policy initiatives, and some have the effect of undercutting PAC outcomes. Moreover, in some sections, Ecology uses the guise of "new science" to excuse many changes. This certainly was not part of the PAC agreement. Weyerhaeuser has no way to verify whether the changes reflect the actual recommendations of the SAB and the POG, or to ascertain whether these two groups have reviewed and approved of the proposed language. It is our understanding, however,

that some cleanup levels, particularly those related to petroleum products, have been specifically challenged by the POG as indefensible.

Remedy - Ecology should make a good faith effort to revise the MTCA so that they are clearer, easier to use, and consistent with the intent of the PAC.

585 Comment #2 The "technically possible" criterion for evaluating cleanup actions is unclear and inappropriate.

Discussion - Throughout the proposed rule, Ecology has established "technical possibility" as the default standard for evaluating cleanup actions (e.g., see feasibility study language in –350(8)(b)(ii), (8)(c)(ii)(B), (9)(e)(ii), and language in the Institutional Controls section at –440(5)). Most cleanup alternatives are technically possible, but based on the disproportionate cost analysis, are often not technically practicable. Ecology's insistence on this approach unnecessarily restricts options for potentially liable parties (PLPs) and imposes additional conservatism in the regulation. For example, where risk to human health and the environment is prevented by controlling site access, a more costly "technically possible" solution is unnecessary.

Remedy - This concept should be removed from the draft rule.

586 Comment #3 The current rule contains a hierarchical preference for the handling of hazardous substances at a site.

Discussion - The PAC recommended that the hierarchy be removed as stand-alone criteria, and that it serve merely as a guide to long-term effectiveness of cleanup alternatives and as remedial options to be considered as appropriate (see page 74 of *Final Report)*. Moreover, the preference for treatment would be effectuated by applying a disproportionate cost test to the potential remedial alternatives. In sections -350 and -360, Ecology has removed the hierarchy and then reinserted it piecemeal in various places. See, e.g., -350(8)(c)(ii), (9)(b)-(c), (10)(a)-(g), and -360(3)(a)-(c). The revised rule does not accurately reflect the PAC recommendation of the role to be played by the disproportionate cost test (re-read page 75 of the *Final Report*).

Remedy - In order to be consistent with PAC recommendations, the remedy selection hierarchy should be removed as stand-alone criteria, and the disproportionate cost test applied as it was intended by the PAC.

587 Comment #4 The draft rule fails to incorporate the PAC site-specific risk assessment recommendations.

Discussion - One concept that was clearly articulated in the PAC recommendations was the ability to perform site-specific risk assessments for commercial properties and other land uses (See discussion beginning on page 59 of the *Final Report*). This concept is lost in the Cleanup Standards Section. There is no discussion in sections -720, -730, -740, -745, -750 about how different land use scenarios, such as commercial or agricultural land use should be evaluated. It appears that the only options are Method A,

587 cont.

B, or C for either Unrestricted or Industrial land use. The current draft rule fails to implement these recommendations as follows:

- Throughout the rule, cleanup standards are often defined incorrectly as only including cleanup levels. Cleanup standards also include remediation levels.
- Throughout the rule, there is language that implies that the only options for PLPs are cleanup levels based on residential or industrial land use. This is a major oversight that will be misinterpreted by users of the rule
- In spite of specific PAC recommendations to the contrary, there is no language that allows a PLP to calculate a commercial cleanup level (see pages 59 and 70 of *Final Report*).
- There is no language in the rule that implements the PAC recommendation for Alternative Reasonable Maximum Exposure Scenarios. Specifically, for child exposure scenarios the cancer risk goal should be $1x10^{-6}$ and for adult scenarios the cancer risk goal should be $1x10^{-5}$ (see page 74 of *Final Report*).
- Ecology has also attempted to place restrictions on when and how alternate Reasonable Maximum Exposure Scenarios can be used.

Remedy - The Draft Rule must be changed to incorporate the PAC Site-specific Risk Assessment recommendations.

588 Comment #5 <u>The Draft Rule fails to incorporate the PAC concept of "Remediation Levels".</u>

Discussion - Ecology has historically used the concept of "cleanup action level" as an unofficial method for recognizing that, under certain conditions, cleanup levels could not be achieved due to cost, impracticability, or for other relevant reasons. One goal of the PAC was to recognize the validity and necessity of cleanup action levels, now called "remediation levels," and "to authorize their use to implement remedy selection." (see page 79 of *Final Report*). Language was to be included in the rule recognizing that remediation levels, when selected as part of a cleanup action plan, would be protective of human health and the environment even though there might be hazardous substances left at the site in concentrations above cleanup levels (see page 79 of *Final Report*). Subsection -350(11) attempts to capture this concept, setting out when a cleanup action may include a remediation level. However, here and elsewhere in the rule where cleanup levels are discussed, Ecology has eroded the opportunities to develop and use remediation levels as a tool of remedy selection (examples are detailed in the Section Specific Comments). Remediation levels may be developed using site-specific information. The inclusion of the concept in select portions of the rule is confusing. The concept should be incorporated consistently throughout the rule in order to make it usable

Remedy - The concept of how cleanup levels and remediation levels should be developed and utilized in the MTCA process must be integrated throughout the entire rule.

589 Comment #6 <u>Ecology's proposal to utilize the Cleanup Level in effect at the time the final Cleanup Action Plan is issued is inefficient and unfair</u>

Discussion - At -702(12), the "grandfather clause," Ecology proposes to determine the applicable cleanup level for a release at the time the final cleanup action plan is issued,

589 cont.

rather than at the time the remedial investigation is undertaken or the feasibility study is prepared. If the cleanup level is raised, there may be no problem. However, if the cleanup level is lowered after initiation of the RI/FS and before the final cleanup action plan, it is possible resources will have been expended for studies or actions that may have to be repeated using different standards. This can be particularly onerous and costly at a large site with multiple waste streams and constituents of concern, or at a site where one or more interim remedies have been undertaken and completed prior to the issuance of a final cleanup action plan. This is certainly not in keeping with the PAC recommendation that cleanups be faster and cheaper, if studies must be repeated and additional dollars expended. The effective date of the order or agreement to conduct the RI/FS should be the point at which the applicable cleanup level is grandfathered, as this will allow the parties to rely on the work undertaken without fear of a change of standards during or after the work. Moreover, any actions that must be undertaken that stall the implementation of a remedy (such as redoing studies or investigations) may have the effect of delaying reuse or redevelopment of abandoned or unused industrial property, contrary to the goals of the PAC directives related to areawide contamination/brownfields.

Remedy - Where a cleanup level has been revised after a release is under a remedial investigation, the cleanup level that was in effect at the time of the issuance of the order or agreement to undertake the RI/FS should be the one that is applied to the release.

590

Comment #7 <u>The proposed sections on Terrestrial Ecological Evaluation Procedures are generally inconsistent with PAC recommendations on applicability, technical content, and pace of implementation.</u>

Discussion – Important policy and technical problems presented in this draft rule include:

- The draft rule language will result in almost all sites requiring institutional controls. This is an unintended consequence of the way the terrestrial ecological rule language off-ramps are defined. There is only one off-ramp that does not require an institutional control.

- The consensus expectation during the PAC process was that only a few sites would be evaluated using the site-specific evaluation process (see page 30 of the *Final Report*). Our view is that the screening concentrations are so low in this rule draft that the PAC expectation cannot practically be met. If sites are forced to start the ecological evaluation process using the screening numbers it is going to be nearly impossible to develop other values that are less stringent. This will result in a large number of sites being cleaned up based on ecological risk cleanup/remediation levels.

- The draft rule is troublesome because it assumes populations of ecological receptors are being adversely affected at every site. This is especially true for commercial and industrial property. The rule assumes that ground not covered with a building, road, or a parking lot will have ecological receptors being exposed and harmed. This approach does not take into account that commercial

590 cont.

and industrial property is generally in active use, and with broad flexibility to develop or modify at any time. This rule provides a real incentive for landowners to destroy all potential habitat when developing property in order to avoid being subjected to the ecological evaluation portion of MTCA.

- The goal of the ecological evaluation process is to protect populations of ecological receptors from significant adverse effects. This concept is lost in the draft rule language. The focus in the draft is on individual receptors and toxicity end points that may result in population impacts. The rule does not provide a framework for evaluating the qualitative and quantitative ecological information to determine the site-specific significance to populations, if any.

- This draft rule makes a number of assumptions about organisms that result in extremely low screening levels. There has been no discussion from a policy point of view how these numbers have been developed or should be applied. In Oregon, for example, concentrations of contaminants in soil are not considered significant from an ecological risk perspective unless they are 50 times higher than the screening numbers or if there are obvious impacts.

- The quantitative approach used in -7492 and -7493 contains many policy and technical issues that have not been discussed by the PAC or SAB. Moreover, it is highly questionable whether the technical underpinnings of this draft would meet the -702 *Quality of Information* requirements. The irony is that if promulgated, any new information to address site-specific ecological evaluations must be scrutinized based on -702. This is inconsistency must be reconciled.

- There has been little, if any, policy or technical discussions concerning agricultural property. We recommend that agricultural land and other heavily disturbed areas be considered "industrial/commercial" properties for purposes of applying Simplified Evaluation screening levels (their classification is currently unclear). While industrial/commercial properties are only expected to protect wildlife, not plants or soil biota, the owners/operators of agricultural lands are in the best position to determine the best conditions to foster crop production and to select what crops are to be grown.

- Site-specific assessment tools are not currently available to readily measure the impacts of chemical constituents on populations of ecological receptors. The current rule does not explicitly recognize the shortcomings, the associated uncertainty, and the overall qualitative nature of the current state of the science. The current focus on bioassays and trying to generate quantitative site data is a very uncertain process confounded by a variety of factors.

- Subsection -350(10) includes no explanation or framework describing how information developed as part of the section -7490 *Terrestrial Ecological Evaluation* should be used in remedy selection. The PLP is supposed to generate information concerning impacts to ecological receptors but site managers have no

590 cont.

way of evaluating or making sense of the information in the context of the overall cleanup and the overall goals of MTCA. This was brought up during the PAC process and Ecology agreed that it was an issue. This is now a major problem.

Remedy - Because of the many unresolved issues the terrestrial ecological evaluation process should be removed from the rule and treated as guidance for a trial period of two years. After the trial period, regulatory language taking account of "lessons learned" could be proposed for the MTCA.

591 Comment #8 Dermal Exposure should not be included as a default route of exposure due to scientific uncertainty and the lack of discussion during the PAC process.

Discussion - There is little if any technical justification for including dermal exposure as a default MTCA equation for all chemicals. Ecology should not add these routes of exposure based on brief technical discussions by the SAB. In addition, there has been no forum for discussing the policy issues associated with adding dermal exposure to MTCA (e.g., the threshold question on when should it be evaluated). There is also clearly not enough scientific information for dermal exposure to meet the "quality of information" requirements identified in -702. For example, there currently is not one dermal toxicity value in IRIS or HEAST. As a result, in addition to all of the exposure factors, every proposed dermal toxicity value must be reviewed and approved by the SAB, DOH, and EPA. Furthermore, the discussion during the PAC process focused on evaluating other routes of exposure in certain situations when performing a site-specific risk assessment. There was never a discussion on the merits of adding dermal as a default route of exposure in the rule.

Remedy - Language relating to dermal exposure should be removed from the draft rule.

592 Comment #9 The vapor exposure pathway was not discussed during the PAC process and should not be included in the draft rule.

Discussion - The vapor exposure pathway is similar to the dermal pathway in that it was never discussed during the PAC process and there has been little, if any, consideration by the SAB. In some cases it may be appropriate to evaluate vapors as an additional route of exposure. That judgment should be made on a site-specific basis.

Remedy - This pathway should only be included in the rule as it relates to POG TPH recommendations.

593 Comment #10 The Quality of Information standards in Section -702 developed during the PAC process must be applied to any portion of the rule that Ecology has modified based on new scientific information.

Discussion - The PAC developed specific criteria regarding the quality of new information that everyone (including Ecology) must address when introducing new science or information into the MTCA process. This standard is being ignored as it relates to the dermal route of exposure, exposure factors, toxicity values, and ecological risk assessment. It is inappropriate for Ecology to choose to include requirements and methodologies in the rule for which there is little, if any, scientific support. The dermal,

593 cont.

vapor, and quantitative ecological risk assessment parameters and assumptions have not been discussed from a policy perspective or by the full SAB. Ironically, in each of these sections Ecology has stated that if a PLP wishes to change any of the values then they must subject the new information to the Quality of Information criteria in -702.

Remedy - The Quality of Information standards should be applied uniformly to all new science incorporated into the rule.

Section Specific Comments

594

-200 *Definitions*

Comment #11 The definition of "cleanup standards" should be clarified so that it includes remediation levels and conditional points of compliance.

Discussion – PAC recommendations concluded that remediation levels and conditional points of compliance are protective when combined with institutional controls.

Remedy - The language should be changed to read: "Hazardous substance concentrations that protect human health and the environment ("cleanup levels" and "remediation levels"); The location on the site where those cleanup levels must be attained ("points of compliance" and "conditional points of compliance"); and...."

595

Comment #12 Definitions related to statistical treatment of analytical data that have been added to the rule should be deleted.

Discussion - Ecology's Statistical Guidance for Site Managers document acknowledges many acceptable alternative statistical approaches for evaluating site data. As such, the selective incorporation of two approaches (e.g., Cohen's Method and Land's Method) in the rule is inappropriate. The likely result will be increased confusion and decreased flexibility.

Remedy - The definitions for "Cohen's Method" and "Land's Method" should be deleted.

596

Comment #13 The definition of "points of compliance" should be changed to include the concept of "remediation levels".

Discussion - Remediation levels may be developed using site-specific information. The inclusion of the concept in select portions of the rule is confusing. The concept should be incorporated consistently throughout the rule in order to effectuate fully the intent of the PAC.

Remedy - The definition should be changed to read: '"Point of compliance" means the point or points where cleanup levels or remediation levels established in accordance with WAC 173-340-720 through 173-340-760 shall be attained.'

597 Comment #14 The definition for "Probabilistic Risk Assessment" is inconsistent with the PAC recommendation.

Discussion - The use of Monte Carlo Simulation is already limited to "informational purposes only". There is no reason to add more restrictions.

Remedy - The last sentence in the definition should be deleted.

598 Comment #15 The definition of "Unrestricted site use conditions" is inconsistent with PAC recommendations.

Discussion - This definition appears to be related to the Unrestricted Land Use (URSLA) that was discussed and rejected by the PAC. It was subsequently reinserted unilaterally by Ecology.

Remedy - The definition of "Unrestricted site use conditions" should be removed.

599 Comment #16 The definition of "wildlife" should be modified.

Discussion - The definition of "wildlife" should exclude non-native pest species such as starlings or opossums.

Remedy - The definition of "wildlife" should be changed to: "'Wildlife" means any nonhuman vertebrate animal other than fish or non-native pest species.'

600 **-320 *Site Hazard Assessment***

Comment #17 The proposed expansion of the Site Hazard Assessment process for terrestrial ecological evaluation is inappropriate.

Discussion - The purpose of the Site Hazard Assessment process is to help prioritize sites in the state for evaluation, not to make a determination of how the site should be evaluated for human health and ecological risk assessment purposes. The inclusion of this requirement also results in an overemphasis on terrestrial ecological risk. The requirement in -320(4)(g) is adequate. It is more appropriate to generate this information as part of the Remedial Investigation.

Remedy - Subsection -320(4)(h) should be deleted.

601 **-350 *Remedial Investigation and Feasibility Study***

Comment #18 This rule section should be clarified so it is obvious that future site development will be a factor in determining if a terrestrial ecological evaluation should be performed.

Discussion - The language in subsection -350(7)(c)(iii)(F)(II) should be modified to make clear that other objectives, such as developing a property, would result in no exposure and effectively eliminate the need to perform an ecological evaluation. This concept was discussed extensively and agreed upon during the PAC process.

601 cont.

Remedy - The language should be changed to read: "Where appropriate, a terrestrial ecological evaluation may be conducted so as to avoid duplicative studies of soil contamination that will be remediated to address other concerns, such as protection of human health. This may be accomplished by evaluating residual threats to the environment after remedies for human health have been developed or based on other future site development activities or uses that will eliminate, reduce, or otherwise control risks posed to terrestrial ecological receptors."

602 Comment #19 One example presented in Subsection -350(7)(c)(iii)(F)(III), directing when a terrestrial ecological evaluation should be performed, is unclear.

Discussion - It is not clear what is meant by the word "delay" in the last example.

Remedy - The language should be changed to read: "...; or a site where the development of a human health based remedy is expected to be a lengthy process, and postponing the terrestrial ecological evaluations would cause further ~~delay or~~ harm to the environment."

603 Comment #20 Subsection -350(9)(c)(i) contains wording that would allow Ecology to require a permanent groundwater cleanup action even where it is demonstrated to be impractical.

Discussion - The language in this subsection should be modified so that practical ability is included in the determination.

Remedy - The language should be changed to:"...where a permanent cleanup action is practical ~~or~~ and is deemed by the department to be in the public interest."

604 Comment #21 Subsection -350(9)(d) seeks to impose a new requirement for certain land uses which is inconsistent with PAC discussions and recommendations.

Discussion - The PAC never established a minimum requirement for cleanup actions for any particular land use. The residential scenario is the most conservative reasonable maximum exposure scenario and is thus used as a starting point in -740. In fact, there were numerous discussions during the PAC process concerning land use such as urban residential where the Method B cleanup levels would not be appropriate.

Remedy - This language should be deleted.

605 Comment #22 Subsections -350(9)(3)(ii) and -440(5) are ambiguous but appear to express a preference for some sort of a cleanup action at a site rather than relying on institutional controls.

Discussion - This language suggests that institutional controls can never be used as a cleanup action component if another alternative is technically possible (which would almost always be the case). In fact, there are many situations, such as with natural attenuation, where use restrictions coupled with physical measures would be adequately protective of human health and the environment, at a much lower cost, and more quickly than with a "technically possible" remedy.

Remedy - This "requirement" should be tied into the disproportional cost test.

606

Comment #23 Subsection -350(9)(e)(ii) establishes technical impossibility as the decision basis rather than technical impracticability.

Discussion - By only considering whether a remedy is technically possible, Ecology has ignored the requirement to rely on the disproportionate cost test in analyzing remedies.

Remedy - This language should be modified to read: "Cleanup actions shall not rely primarily on institutional controls and monitoring where it is technically ~~possible~~ practicable to implement a cleanup action..."

607

Comment #24 Subsection -350(10) includes no explanation or framework describing how information developed as part of the section -7490 *Terrestrial Ecological Evaluation* should be used in remedy selection.

Discussion - It is extremely important that the language in -350 provides site managers and PLPs with principles of how the information generated through the ecological risk evaluation process should be used and interpreted. These principles are vital because there is no equivalent to the human health "risk range". In the absence of decision criteria or principles Ecology site managers will default to the screening levels. This would be an unacceptable outcome.

Remedy - The following language (taken from the State of Pennsylvania's Ecological Risk Language), or something similar, should be added to the rule to clearly identify key factors that should be considered when evaluating the results of an ecological risk assessment and the implication for potential remedies:

> At many sites, risks to unmanaged habitats (e.g., areas that are not landscaped) are likely to be low because of human activity/use (such as residential, commercial or industrial), which may preclude the existence of unmanaged habitats.
>
> - Substantial acclimation capacity of natural populations to exposure to low or moderate concentrations of chemical residuals.
>
> - Most remedial actions cause substantial injury to areas of concern beyond toxicological impacts, as well as impacts to previously unimpacted areas along the perimeter of the remediation area.
>
> - Natural systems are self-organizing, and attempts to manage these processes to produce a particular result require long-term management, and even then can result in less than desirable results.
>
> - Compliance with waste management regulations and human health standards would require remediation of elevated levels of constituents that pose a risk to human health. Such compliance would also protect ecological health to a certain degree.

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- Management actions themselves can have ecological impacts. Risk managers should seek options that minimize destruction of the existing ecosystem. Comparative ecological risk assessment may be useful in evaluating options.

- Risk managers should recognize that eliminating a chemical stress, may not improve an ecosystem or ecological resource affected significantly by another stress, such as lack of habitat.

- Ecological risk management actions must strive to protect the variety and function of ecosystems. Some populations and communities are key to ecosystem function, but not necessarily all individuals or populations of each species of plant or animal are essential.

Furthermore, when managing ecological risks final decisions should: (1) maximize net environmental benefits, (2) enhance the function of ecosystems, (3) reflect public input, (4) be guided by ecologically appropriate endpoints, and (5) be cost-effective.

608 Comment #25 <u>Subsection -350(10)(d) creates a requirement that is outside the PAC report.</u>

Discussion - Subsection -350(10) describes the criteria to be applied in evaluating cleanup alternatives, including effectiveness over the long-term, -350(10)(d). The rule requires a demonstration of long-term effectiveness, including an evaluation of the consequences of a potential failure. Such a requirement is outside the PAC report, and would be costly and burdensome for a PLP. This requirement is further complicated by Ecology's definition that long-term means "as long as hazardous substances that exceed cleanup levels are estimated to remain on site." Although the PAC authorized use of the hierarchy as a guide to long-term effectiveness, it did not mandate pre-remediation studies and analyses as contemplated by the language at section -350(10)(d).

Remedy - This requirement should be modified so that it is consistent with concepts agreed to by the PAC.

609 Comment #26 <u>The cleanup level and remediation level concepts presented in Subsections -350(11)(a) and -350(13)(a) are incorrect.</u>

Discussion - Subsections –350(11)(a) states that: "Remediation levels are not the same as cleanup levels. While cleanup levels are selected for all sites, remediation levels may or may not be selected, depending on the situation." It is not clear why cleanup levels will be selected for all sites. Subsection -350(13)(a) makes a similar statement. These statements are inconsistent with the PAC recommendations for site-specific risk assessment. For example, how could a cleanup level for commercial or recreational property be selected when, as the rule is currently written, a cleanup level for these land uses does not exist? In order to determine the cleanup standard for a commercial

property, it will be necessary to develop a site-specific remediation level. Note that the PAC report stipulated cleanup levels could also be developed based on site-specific risk assessment.

Remedy - This language should be removed. The concepts and approaches for site-specific risk assessment identified in the PAC report should be implemented.

610 Comment #27 Subsection -350(12)(c) incorrectly identifies acceptable human health risk levels for remediation levels.

Discussion - Remediation levels may be based on different reasonable maximum exposure scenarios and different receptors (e.g., adult rather than a child) than are used for developing cleanup levels. Consistent with the PAC report recommendations (page 25 of *Final Report*), a $1x10^{-6}$ risk level should be used for children exposure scenarios and a $1x10^{-5}$ risk level should be used for non-residential adult exposure scenarios.

Remedy - The language should be changed to read: "The acceptable risk level for remediation levels shall be $1x10^{-6}$ carcinogenic risk level for children exposure scenarios, a $1x10^{-5}$ carcinogenic risk level for non-residential adult exposure scenarios, and a noncarcinogenic hazard quotient of 1 for all scenarios ~~the same as that used for the cleanup level~~."

611 Comment #28 Subsection -350(13)(a) makes broad statements about cleanup levels that are incorrect because the ecological risk evaluation process has not been considered.

Discussion - It appears that there has been very little if any consideration of how ecological risk should be integrated with section -350. The terrestrial ecological risk evaluation process presents screening levels but does discuss how these levels are different from cleanup levels or even if it is possible to develop a remediation level. In addition there are exclusions which result in off ramps from the process without the use of numerical standards.

Remedy - Section -350 should be modified to be consistent with other portions of the rule.

612 **-360 *Selection of Cleanup Actions***

Comment #29 The language describing the disproportionate cost analysis should be consistent with the PAC recommendations.

Discussion - The PAC recommended a disproportionate cost analysis be the basis for selecting a remedy. The methodology for performing a disproportionate cost analysis is found in subsection -360(3)(c). The process as written is needlessly inflexible. Site-specific information should be part of the analysis where appropriate, which will be in almost all cases.

Remedy - The components and approach for the disproportionate cost analysis should be rewritten so that it is consistent with PAC recommendations.

613 **-380 *Cleanup Action Plans***

Comment #30 Subsection -380(1)(a)(iv) implies that "remediation levels" are different from cleanup standards.

Discussion - The rule language implies that a "remediation level" is different from a cleanup standard. A "remediation level" is a cleanup standard that will also include an institutional control.

Remedy - This subsection should be changed to: "Cleanup standards ~~and, where applicable, remediation levels~~, for each hazardous..."

614 **-410 *Compliance Monitoring***

Comment #31 The "remediation level' concept has not been incorporated into Subsection -410(1)(b).

Discussion - This is another example of how the remediation level concept is not integrated into the draft rule. A cleanup standard can be either a cleanup level or remediation level.

Remedy - This language should be changed to read: "Confirm that the interim action or cleanup action has attained cleanup standards ~~or remediation levels~~ and, if ..."

615 Comment #32 Subsections -420(3)(c) and -420(3)(f) identify review criteria that should be modified.

Discussion - Changes regularly occur in state and federal laws and with analytical techniques. Insignificant changes should not trigger an evaluation of the chosen remedy(ies).

Remedy - The language in -420(3)(c) should be modified to: "~~New~~ Substantial changes in standards or procedures under this chapter and under applicable state and federal laws for hazardous substances present at the site"; and in -420(3)(f) the language should be changed to: "The availability of substantially improved analytical techniques to evaluate compliance with cleanup levels."

616 **-440 *Institutional Controls***

Comment #33 Subsection -440(4) imposes requirements associated with institutional controls that are inconsistent with PAC recommendations.

Discussion - Subsection -440(4) describes those situations in which institutional controls will be required, including whenever the cleanup level is based on a land use other than residential. This was not a PAC recommendation. This requirement fails to recognize the many land use restrictions that are an inherent part of other regulations, for example zoning requirements, the Growth Management Act, and other non-MTCA related controls, that obviate the need for deed restrictions in many cases. This requirement suggests that all non-residential sites that are remediated will have a deed restriction imposed, even where Ecology has determined that the cleanup level is protective of

human health and the environment. Note that -440(4)(d) is one of the few places in the draft rule where it does articulate the concept that cleanup levels can be based on land uses other than residential.

Remedy - Proposed language in subsection -440(4) should be withdrawn and replaced with language that is consistent with PAC recommendations.

617 Comment #34 <u>The "technically possible" criterion presented in Subsection -440(5) for evaluating cleanup actions is unclear and inappropriate.</u>

Discussion - Throughout the proposed rule, Ecology has established "technical possibility" as the default standard for evaluating cleanup actions. Most cleanup alternatives are technically <u>possible</u>, but based on the disproportionate cost analysis, are often not technically <u>practicable</u>. Ecology's insistence on this approach unnecessarily restricts options for PLPs and imposes additional conservatism on the regulation. Moreover, it is in direct contravention of the PAC recommendation.

Remedy - This language should be changed to conform to the PAC recommendation. The necessary language revision would be: "...rely primarily on institutional controls and monitoring where it is technically ~~possible~~ <u>practicable</u> to implement a cleanup action..."

618 Comment #35 <u>Subsection -440(8)(c) language concerning restrictive covenants is unclear.</u>

Discussion - The subsection reads: "The use of legal or administrative mechanisms that do not include restrictive covenants is intended to apply to situations where the release has affected properties near the source of the release not owned by a person potentially liable under the act and it is not possible to obtain a restrictive covenant on the property." It is not clear what is meant by the phrase "it is not possible to obtain". It is always conceptually possible to obtain a restrictive covenant but in many cases it may not be economically or logistically viable.

Remedy - The language in this subsection should be changed to: "...release not owned by a person potentially liable under the act and it is not <u>practicable</u> ~~possible~~ to obtain a restrictive covenant on the property."

619 Comment #36 <u>Subsection -440(11) addressing financial assurances is unclear with respect to PLP groups.</u>

Discussion - Where a site has more than one PLP, and the PLPs are in fairly disparate financial circumstances, it is unclear how far the guaranty of the more financially stable PLP is intended to go. In other words, a PLP should not be expected to provide financial assurance for those portions of the site or those releases for which the PLP has no or only partial liability. It may be necessary to develop more detailed requirements and exemptions in a guidance document.

Remedy - The language in this subsection should clarify that a PLP's obligation to provide financial assurance should extend only to its portion of liability at a site, and a financially stable PLP should not be used as a surrogate for less stable PLPs.

620 **-700 *Overview of Cleanup Standards***

Comment #37 The Overview section (-700) does a very poor job of communicating how remediation levels and site-specific risk assessment fit into the process.

Discussion - The rule stipulates that a remediation level may be selected but does not provide any information about how or when this is done. Someone who has not followed the PAC process would have no concept of how remediation levels and site-specific risk assessment fit into the process. One who has followed the process would be surprised by the inadequacies of the rule.

Remedy - This section needs to be rewritten to conform to the PAC recommendations, including cross-references where applicable.

621 Comment #38 Subsection -700(2) defines a cleanup level but goes beyond the definition found in Section 200.

Discussion - According to this language, in addition to the concentration, a cleanup level also defines the area or volume of the medium to be addressed in the cleanup action. What is the source of this additional requirement? It was not a PAC recommendation.

Remedy - This definition should be deleted.

622 Comment #39 In subsection -700(3)(a) the term "Cleanup standards" is defined as a cleanup level but fails to discuss "remediation levels."

Discussion - The concepts and uses of cleanup levels and remediation levels should be consistently incorporated throughout the rule.

Remedy - This language should be modified to include the PAC remediation level concepts.

623 Comment #40 Subsection -700(4) should be modified so that it is consistent with the PAC Report recommendations.

Discussion - Subsection -700(4)(a) describes the relationship between cleanup standards and the actual amount of cleanup required. It states that: "This part provides uniform methods state-wide for identifying cleanup standards and requires that all cleanups under the act meet these standards". This statement is inconsistent with -700(4)(b) which recognizes that "remediation levels" may be used.

Remedy - This proposed language should be removed.

624 Comment #41 Subsection -700(5) does not incorporate the PAC recommendations for site-specific risk assessment.

Discussion - Subsection -700(5) states that: "These rules provide three approaches for establishing cleanup levels: Methods A, B and C." The approaches that are presented in this section do not identify what approach can be used to develop cleanup levels for land used for purposes other than residential or industrial or how remediation levels fit into the process.

Remedy - This language should be modified to be consistent with the PAC recommendations concerning the use of site-specific risk assessment, alternative land uses, and remediation levels.

625 Comment #42 Subsection -700(7) does not incorporate the "remediation level" concept.

Discussion - Subsection -700(7) explains the process for demonstrating compliance with cleanup standards, but fails to acknowledge the validity of remediation levels and conditional points of compliance.

Remedy - In order to comply with the PAC recommendations, Ecology should provide references and cross-references to these concepts and their use in the remedy and cleanup level selection processes.

626 **-702 *General Policies***

Comment #43 Ecology policy desires should not be added to the rule.

Discussion - This section defines the policies and principles that Ecology will follow when establishing cleanup standards. Subsection -702(3) states that, in order to comply with MTCA policies, cleanup standards and cleanup actions "...shall be established which provide conservative estimates of human health and environmental risks that protect susceptible individuals as well as the general population." We have been unable to ascertain the source for this statement. This appears to be another instance where Ecology has used the overviews to state a conservative interpretation of the law, rather than that embodied in the statute, in the PAC report, or in any of the other sources used to revise the rule.

Remedy - Subsection -702(3) should be removed from the rule.

627 Comment #44 Subsection -702(5) presents an incomplete definition of what is protective of human health and the environment.

Discussion - Subsection -702(5) states that only cleanup actions that achieve cleanup standards under Methods A, B or C "...shall be presumed to be protective of human health and the environment." The PAC Report clearly states that a cleanup action is protective of human health and the environment even where hazardous substances are left on-site at concentrations above cleanup levels (i.e., at remediation levels) so long as the cleanup action complies with other requirements of the regulation (see page 35 of the *Final Report*). The PAC authorized the use of remediation levels, but the revised rule has not incorporated the concept in a comprehensive fashion in order to implement the PAC Report appropriately.

Remedy - The language should be removed from the rule.

628 Comment #45 Subsection -702(9) inappropriately introduces new objectives for cleanups.

Discussion - Subsection -702(9) describes the relationship between cleanup levels and cleanup actions, but again relies on vague language and makes statements that have no

discernible source. Ecology's proposed rule language that the rules are "...intended to promote thorough cleanups rather than long-term partial cleanups or containment measures..." is inaccurate and an attempt to impose the hierarchy that the PAC specifically recommended be eliminated.

Remedy - The language should be removed from the rule.

629 Comment #46 Ecology's CLARC Table should be updated annually.

Discussion - Regarding subsection -702(11) we concur that the sections mentioned should be updated at least once every five years. However, there is no mention how often the Method A, B, and C cleanup levels published by the department via CLARC will be updated.

Remedy - These tables should be updated at least annually to reflect any changes of toxicity information in IRIS or HEAST.

630 Comment #47 The "burden-of-proof" language in Subsection -702(14) is unclear and is inconsistent with PAC recommendations.

Discussion - Subsection -702(14) describes burden-of-proof requirements that currently apply to persons proposing to use Method C cleanup levels or conditional points of compliance, and expands the application of that requirement to persons who propose to use an alternate reasonable maximum exposure scenario and site-specific exposure parameter values. There is no explanation as to what the proposed language means or any standard as to how it will be judged. If these are requirements for cleanup actions then they should be included in section -350. Subsection -702(14) alters the carefully negotiated agreement for the use of site-specific risk assessment made by the PAC.

Remedy - The language should be modified or deleted.

631 ***-704 Use of Method A***

Comment #48 Method A should be able to be used for sites with more than a few hazardous substances.

Discussion - Ecology has unilaterally restricted the use of Method A to sites with "few hazardous substances." This was not a PAC recommendation, nor does Ecology suggest that it came from the POG or the SAB.

Remedy - This restriction should be removed, as Ecology has demonstrated no relation between this restriction and the protection of human health and the environment.

632 ***-705 Use of Method B***

Comment #49 Method B overview language is misleading.

Discussion - The subsection -705(1) language is very misleading because it says that a PLP shall use Method B unless they qualify for Method C. In fact, PLPs have other options which should be identified here.

Remedy - This language should be modified so that it is clear that a PLP has the choice of different methods for determining cleanup standards.

633 ***-708 Human Health Risk Assessment Procedures***

Comment #50 Specific rule language agreed upon by the PAC has been modified.

Discussion - Subsection -708(3)(c) should contain rule language that was agreed upon by all parties. In fact, the consensus language has been modified with additional verbiage that is inconsistent with the original language. For example, the PAC report says that cleanup levels can be developed for commercial sites (see pages 24-35 of *Final Report*). Ecology added the following sentence that attempts to eliminate this possibility: "Land uses other than residential and industrial, such as agricultural, recreational, and commercial, shall not be used as the basis for a reasonable maximum exposure scenario for the purpose of establishing a cleanup level."

Remedy - The rule language presented in the PAC report should be included here. All other edits should be removed.

634 Comment #51 Subsection -708(8) should discuss the two models for lead.

Discussion - The current draft does not discuss lead toxicity and the use of the IEUBK model. This model has been reviewed and approved by the SAB. In addition, the SAB also approved the use of the EPA model for worker exposure scenarios.

Remedy - Both of these models should be identified as being acceptable for use at MTCA sites.

635 Comment #52 The language in Subsection -708(8)(c)(ii)(B) is outdated and technically incorrect.

Discussion - The linear multistage model (LMS model) has been rejected by USEPA as a default approach in its recent Carcinogen Risk Assessment Guidelines.

Remedy - It should be modified to the following: "~~The linearized multistage extrapolation model shall be used~~ Extrapolation models and associated assumptions based on the most recent U.S. Environmental Protection Agency risk assessment or toxicological guidance shall be used to estimate the slope of the dose-response curve unless the department determines that there is clear and convincing scientific data which demonstrates that the use of an alternate extrapolation model or assumptions is more appropriate."

636 Comment #53 The PAC recommended cancer risk goals should be incorporated into the discussion of remediation levels.

Discussion - The PAC report recommends that different cancer risk goals be used for different exposure scenarios (see pages 24-25 of *Final Report*). Language should be added to -708(10)(b)(ii) that clearly states that the cancer risk goal for non-residential

exposure scenarios is $1x10^{-5}$. This cancer risk goal would only be applied when the exposure scenario was not residential.

Remedy - Language should be added to -708(10)(b)(ii) that clearly states that the cancer risk goal for non-residential exposure scenarios is $1x10^{-5}$.

637 Comment #54 Site-Specific risk assessment criteria should be clarified.

Discussion - In subsection -708(10)(c) the term "significantly" is ambiguous and should be defined so that the trigger for adding other pathways is presented. Furthermore, given the constraints on changing any of the parameters in the models presented in the rule, it would be appropriate only to consider additional pathways in site-specific risk assessment and not in situations where a PLP has changed inputs into the default model to modify a cleanup level.

Remedy - The term significantly should be defined.

638 Comment #55 Statement on "significant figures" in Subsection -708(12) should remain.

Discussion - The current draft strikes the provision that risk assessment results be presented using one significant figure. This was not a PAC recommendation.

Remedy - This language should not be deleted.

639 ***-720 Ground Water Cleanup Standards***

Comment #56 General Comment on Ground Water Cleanup Standards Language, Section -720

Discussion - In drafting section -720, Ecology appears to have ignored several of the PAC recommendations regarding ground water. As a policy matter, it is difficult to comment on Section -720 because the bulk of the language was not negotiated in the PAC process. Ecology has attributed many of the changes to the POG process or to the SAB, but without something substantive to review from either group it is impossible to confirm this attribution. Moreover, in conversations with representatives of the POG it is clear that some of these levels were actually challenged by the POG as indefensible. Ecology must be held to the same standard of review for any "new science" it wishes to incorporate, as it would demand of a PLP.

Remedy - Where Ecology has unilaterally acted to impose more conservative restrictions on groundwater cleanup standards, or on any other media for that matter, such revisions are unacceptable.

640 Comment #57 The amended Section -720 fails to provide clarity or simplicity in order to facilitate its application to sites.

Discussion - As rewritten by Ecology, Section -720 is more complex and difficult to apply than the prior rule. Unless Ecology can provide guidance it is difficult to see how the rule will be able to be applied in the field. For example, there are sites in the State of

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Washington where it is highly unlikely that groundwater will ever be a source of drinking water. The MTCA regulation recognizes this in allowing the development of an alternate reasonable maximum exposure scenario to incorporate site-specific factors. However, Ecology has failed to clarify how these alternate risk scenarios can be incorporated into the development of cleanup levels at a particular site. The PAC recommended the development of guidance on this issue, and the confusion and complexity of the proposed rule make it clear that such guidance is needed.

Remedy - Ecology should reopen negotiations to draft language for Section -720 or, in the alternative, convene a workshop or task force to draft guidance documents to clarify the process contemplated by Ecology.

641 Comment #58 <u>The new standard to protect soil biota is inappropriate.</u>

Discussion - Subsection -720(1)(d) describes situations under which more stringent requirements may be imposed on ground water cleanup levels. Subsection -720(1)(d)(iii) states that: "Concentrations that eliminate or minimize the potential for damage to soils or biota in soils which could impair the use of the soil for agricultural or silvicultural purposes." This is a new requirement that was not discussed during the PAC process.

Remedy - This requirement should be removed.

642 Comment #59 <u>The proposed compliance statistics changes presented in Subsections -720(10)(d-f) are not related to the PAC process and are better left in guidance.</u>

Discussion - Subsections -720(10)(d-f) provide various options for dealing with statistical methods of demonstrating compliance. It is not clear how the addition of this language improves on or clarifies the existing process because PLPs have the ability to use these statistics under the current rule. The current language identifies compliance goals, some statistical techniques for evaluating site data, and acknowledges that other methods could be acceptable to the department. The purpose of developing the "Statistical Guidance for Site Managers" document was to identify other methods that are approved by the department. Examples of problematic language include:

- The proposed language for dealing with site data below the practical quantitation limit for example, mandates which methods must be used and does not provide flexibility. This is in contrast with the Ecology guidance which does provide some flexibility. PLPs should always have the ability to use ½ of the sample quantitation limit if they so choose.

- When comparing site data to the three-fold criteria the PLP should have the ability to compare the maximum detected site concentration to the cleanup/remediation level in instances when the maximum detected concentration is greater than the cleanup/remediation level 95% UCL statistic.

The rules should be modified to make it clear that these are appropriate methods and that other methods are also acceptable.

Remedy - The language in -720(10)(d) should be changed to: "When data analysis procedures for evaluating compliance are not specified in an applicable state or federal law, the following procedures are acceptable ~~shall be used~~."

643 ***-730 Surface Water Cleanup Standards***

Comment #60 Surface water requirements not approved by the PAC should be eliminated.

Discussion - The ecological provisions in subsection -730(4)(b)(ii) were never discussed during the PAC process. Discussions regarding ecological-risk focused solely on terrestrial organisms because the appropriate stakeholders were not present to discuss surface water or sediment issues.

Remedy - This language should be removed.

644 Comment #61 Subsection -730(7) See comment for -720(10)

645 ***-740 Soil Cleanup Standards***

Comment #62 Subsection -740(1) describes "Unrestricted land use soil cleanup standards."

Discussion - The unrestricted land use (URSLA) language was rejected by the PAC and should not be used in the rule.

Remedy - The title should be changed to: "~~Unrestricted land use~~ soil cleanup standards."

646 Comment #63 Subsection -740 does not incorporate the PAC recommendations regarding site-specific risk assessment and the use of remediation levels.

Discussion - Subsection -740(1) states that: "Unless a site qualifies for use of an industrial soil cleanup level under WAC 173-340-745, soil cleanup levels shall use this presumed exposure scenario and be established in accordance with this section." Subsection -740(4) states that: "Except for qualifying industrial properties Method A and Method B, as described in this section are the only methods available for establishing soil cleanup levels at sites." These statements are misleading at best and the omission of the concept of remediation levels implies that a PLP can only choose between residential and industrial cleanup levels.

Remedy - This section must incorporate the PAC recommendation for site-specific risk assessment, remediation levels, and land that is not used for residential or industrial purposes (see pages 24-25 of the *Final Report*).

647 Comment #64 New default exposure pathways should be eliminated.

Discussion - Subsections -740(3)(b)(iii)(C) and -740(3)(c)(iii) require consideration of vapor and dermal pathways for petroleum products. These requirements go beyond the

PAC recommendation that additional pathways be considered when a Modified Method B or Modified Method C cleanup level results in significantly higher values for cleanup levels than would be calculated under standard methods. Moreover, there has been insufficient technical and policy analysis to support these changes. This same concern affects cleanup levels in subsections -745 and -750.

Remedy - The language should be removed from the rule until policy discussions have been held, and appropriate scientific information has been provided and demonstrated to meet the burden of proof requirements of the rule. If that has occurred, Ecology should make such information available for public review and it should be referenced.

648 Comment #65 The default information for dermal exposure in the rule (Subsection-740(3)(c)(iii)) has not been evaluated to determine if it meets the quality standard for new scientific information presented in Subsection -702(15) and (16).

Discussion - All new scientific information proposed by Ecology or PLPs must meet the "quality of information" requirements identified in the rule. For example, if a toxicity value is not on IRIS, HEAST, or NCEA then any proposed value has to be developed based on the procedures identified in -708(8)(c). Since there are no dermal toxicity values on IRIS, HEAST, or NCEA this process must be completed for every chemical. There are other components of the dermal analysis that must undergo scientific scrutiny on a chemical-by-chemical basis.

Remedy - Dermal exposure information should be removed from the rule.

649 Comment #66 Dermal exposure (Subsection-740(3)(c)(iii)) issues that have not been addressed.

Discussion - The rule states that: " ..dermal contact with the soil shall be evaluated whenever the proposed changes to the standard Method B equations or default values would result in soil cleanup levels that are high enough that dermal contact could become a significant potential exposure pathway. When conducting this evaluation, the following equations and default exposure assumptions shall be used." There are two problems with this language. As a practical matter, if a site-specific risk assessment is performed it is likely that the exposure frequency or duration will change. This change would also occur for the dermal route of exposure. Therefore, these default assumptions for exposure frequency and exposure duration for example, will not be used.

Remedy - Dermal exposure information should be removed from the rule.

650 Comment #67 Subsection -740(3)(c)(iv) seeks to include vapors as a default exposure pathway.

Discussion - This was not discussed during the PAC process. Vapors may be an issue at some sites and should be identified as a potential reason for additional protection under -740(4)(e).

Remedy - This section of the rule should be removed.

651 Comment #68 Subsection -740(7) See comments for -720(10)

652 ***-745 Industrial Soil Cleanup Levels***

Comment #69 See comments under subsection -740, above. Most are equally applicable to this section.

653 Comment #70 Subsection -745 does not incorporate the PAC recommendations regarding site-specific risk assessment and the use of remediation levels.

Discussion - The language in Subsection -745(4) is confusing because it appears that the only option other than Method C Industrial is to use Method B in -740. The PAC did not impose such a restriction.

Remedy - In order to be consistent with the PAC Report, it should also state that a PLP could perform a site-specific risk assessment using an industrial scenario to develop a remediation level.

654 Comment #71 - There are a number of technical problems associated with dermal exposure in Subsection -740(5)(c)(iv)

Discussion – Problems in the draft regulation include:

- The dermal exposure factor assumptions for gastrointestinal (GI) absorption (for soil ingestion) and GI absorption (to adjust oral toxicity values) should be consistent. In fact, the GI absorption value for soil ingestion will almost always be less than the value for adjusting the oral toxicity value.
- The exposure frequency has been changed from 40% to 68%. Changing the default exposure frequency (frequency of contact) has never been discussed and is unacceptable.
- PAHs should not be evaluated via dermal exposure (per EPA guidance) because they are point-of-contact carcinogens. This also means that there should be no adjustment of the oral toxicity values.

Remedy - Dermal exposure information should be removed from the rule.

655 Comment #72 Section -747, Deriving Soil Concentrations for Groundwater Protection, uses methodology that is inappropriate under many site conditions.

Discussion - Subsection -747(2). It is well established that distribution coefficients for metals are not constant and may vary with pH, eH, and other conditions. No technical references are provided for the metal K_d values presented in Table 747-1. The EPA Soil Screening Guidance (USEPA, 1996) presents metal K_d values as a function of pH. The K_d values presented for As, Cr^{+6}, Hg, Ni, Se, and Zn are similar to values presented in the EPA document for pH values of 6.8. K_d values for cadmium and chromium are lower than the those presented by EPA even for pH values as low as 4.9. For some metals, such as mercury, the K_d can change significantly depending on pH and as such, appropriate K_d values should be used. It is requested that the table be replaced or expanded significantly to provide K_d values that reflect variability relative to chemical

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conditions. It seems unreasonable to assume that all soils in Washington (basalt, gravel, sand, fill material, etc.) would have the same travel time for a contaminant in soil. Doing so would lead to results that are not consistent with actual site conditions.

Subsection -747(3). Two standard leach tests are required in the second standard method, SPLP (EPA Method 1312) and TCLP (EPA Method 1311). The Method 1312 leaching procedure uses an unbuffered extraction fluid that is based on geographic location. For Washington, the extraction fluid used has a pH of 5. The prepared sample is immersed in the extraction fluid for 18 ± 2 hours at 23 ± 2° C and the leachate analyzed. The Method 1311 was designed to characterize waste for disposal purposes (e.g., WAC 173-303-090) and tries to represent conditions the material would find if placed in a landfill. If the pH of the material is greater than 5, then an extraction fluid with a pH of 2.88 is used (the extraction fluids must be monitored to ensure the proper pH). The prepared sample is immersed in the extraction fluid for 18 ± 2 hours at 23 ± 2° C.

With the different extraction methods it can be expected that the results may not be similar. Unless there is evidence that subsurface conditions at a site are better reproduced using the more acidic TCLP leaching procedure, we believe that EPA Method 1311 is not appropriate and request that it not be required to derive soil concentrations that are protective of groundwater.

While the PAC did recommend that alternative methods be made available for determining soil cleanup levels based on the protection of groundwater, it was not the PAC recommendation that the 100X model be eliminated, only that alternatives be made available for those circumstances in which the 100X formula was inapplicable (too protective or not protective enough). The formulae developed by Ecology presumably are the result of an internal and unilateral determination made by Ecology and its SAB. The effect of these new formulae would be a wholesale revision to the Method A tables which was not intended by the PAC and NOT part of the recommendations. In some cases the formulae are wholly inapplicable.

Remedy - The formulae should be revised and the 100X rule should be reinserted and made available for those instances in which it is appropriate. Moreover, those levels in the Method A tables that have been adjusted based on these formulae should be revised and recalculated by more appropriate formulae than those developed unilaterally by Ecology. In addition to its other shortcomings, this subsection is complex, confusing, and potentially costly and does not reflect the goals of the PAC.

656

-7490 through -7494 Terrestrial Ecological Evaluation Process

Comment #73 The subsection -7940(3)(c) definition for commercial property does not reflect PAC consensus.

Discussion - The first criterion is incorrect because property could be zoned for industrial as an example, but be used for commercial purposes. The second criterion is vague. It is not clear if other traditional commercial uses such as recreational use (e.g., golf course,

656 hotels/motels, etc.) would meet this definition which clearly they should. The real focus should be on whether or not the property is actively or intensely used.

Remedy - The language should be modified so that it incorporates the concepts of intensive use.

657 Comment #74 Subsection -7940(3)(d) attempts to introduce new constraints on institutional controls.

Discussion - Requirements associated with institutional controls should be included in Subsection -440. In addition, this requirement was not discussed during the PAC process.

Remedy - This language should be removed.

658 Comment #75 The terrestrial ecological point of compliance (Subsection -7940(4)) is inconsistent with the PAC recommended flow chart and guidance

Discussion - Subsection -7940(4) dealing with point of compliance is inconsistent with the PAC recommended flow chart and guidance where 6 feet was identified as the maximum depth of concern for terrestrial ecological receptors. If subsurface soil is excavated there will no longer be any habitat over the excavation. If excavation is occurring it is likely that development will also occur which will also eliminate habitat.

Remedy - The language should be modified to eliminate any consideration of contamination greater than 6 feet deep.

659 Comment #76 Subsection -7941(1)(c)(i) incorrectly translates a PAC consensus recommendation.

Discussion - In the PAC-approved flow chart these criteria read: there is less than 1.5 contiguous acres of undeveloped land within 500 feet of the area of contamination. The definition in the rule is an attempt to expand the previous definition.

Remedy - The language should be modified to make it consistent with the PAC flow chart.

660 Comment #77 The definition for "undeveloped land" in Subsection -7941(1)(c)(iii) is inappropriate.

Discussion - The definition of "undeveloped land" is inappropriate because it focuses on the presence of an exposure barrier rather than on the likelihood that wildlife populations would be present. Heavily disturbed areas, which are not characterized by native vegetation, should not be considered to be significant habitat for purposes of ecological risk evaluations. Agricultural lands, play fields, mining areas, unpaved industrial property used for staging heavy equipment, and heavily landscaped areas with active application of pesticides or herbicides (e.g., golf courses, plantings around commercial developments), are all examples of areas which are probably inappropriate to characterize as "undeveloped land" (see Exclusions in -7941) or "habitat" (see Simplified Evaluation -7942).

Remedy - The definition should be modified and take into account the likelihood of wildlife populations being present.

661 Comment #78 <u>The definition for "Semi-Native Vegetation" in Subsection -7941(2)(c)(ii) should be clarified.</u>

Discussion - The rule states that: "Semi-native vegetation" means a plant community that includes at least some vascular plant species native to the state of Washington." This definition should modified so that the phrase "at least some" is clarified.

Remedy - The definition should be changed to: "Semi-native vegetation" means a plant community <u>in which</u> ~~that includes~~ at least <u>60% of the area</u> contains ~~some~~ plant species native to..."

662 Comment #79 <u>Subsection -7491(2)(a)(I) proposes a criterion which was not discussed during the PAC process.</u>

Discussion - The draft rule states that: "The site is located on, or directly adjacent to, an area where management or land use plans will maintain or restore native or semi-native vegetation...." It is inappropriate to suggest that PLPs must make different decisions at their sites based on their neighbors' potential future land use. The concept discussed during the PAC process was that the presence of existing sensitive habitat in the vicinity of the site might be a potential concern. This modification raises difficult land use issues because a PLP would have to make decisions based on surrounding property over which he has no control.

Remedy - The language should be modified to: "The site is located on, or directly adjacent to, an area where management ~~or land use~~ plans will maintain ~~or restore~~ native or semi-native vegetation..."

663 Comment #80 <u>Subsection -7942(1)(b) identifies goals for the simplified terrestrial evaluation that are different from the overall goals identified in -7940(3).</u>

Discussion - Subsection -7942(1)(b) states that: "The process is structured with an intent to protect terrestrial wildlife at industrial or commercial sites, and terrestrial plants, soil biota and wildlife at other sites, as provided under WAC 173-340-7490(3)." In fact, Subsection -7940(3) does not say that one of the goals is to protect soil biota.

Remedy - The rule language should be modified to: "The process is structured with an intent to protect terrestrial wildlife at industrial or commercial sites, and terrestrial plants, ~~soil biota~~ and wildlife as other sites, at provided under WAC 173-340-7490(3)."

664 Comment #81 <u>Subsection -7492(1)(d) is inconsistent with the PAC flow chart and guidance.</u>

Discussion - A PLP could use the Simplified Evaluation screening numbers as cleanup levels. A PLP could perform site-specific bioassays to evaluate toxicity and/or bioaccumulation. A PLP could also perform a voluntary site-specific evaluation.

Remedy - The draft language should be adjusted to incorporate these options.

665 Comment #82 <u>The current rule language in -7490 through -7494 should be subjected to the standards for new scientific information.</u>

Discussion - Subsection -7493(7) demands that modifications to default values meet the quality of new scientific information criteria appearing in -702(14). Yet, the quantitative approach used in -7942 and -7943 contains many policy and technical issues that have not been discussed. <u>It is very unlikely</u> that any of this information will meet the -702 quality of information requirements. The current rule though, presumes that any new information must be scrutinized based on -702.

Remedy - The terrestrial ecological evaluation portion of the rule should be subjected to criteria and standards for new information.

666 ***<u>-750 Cleanup Standards to Protect Air Quality</u>***

Comment #83 <u>Expansion of ambient air cleanup standards to indoor air is inappropriate</u>.

Discussion - The extension of the air cleanup standards to encompass indoor air, in addition to ambient air, is duplicative of WSHA and OSHA regulations and is an unnecessary expansion of MTCA. In instances where there are workers, indoor air concentrations should be below federal and state occupational exposure standards. In addition, this approach was never discussed during the PAC process.

Remedy - This section of the rule should be limited to ambient air.

667 ## Additional Issues

In addition to specific rule recommendations, the PAC *Final Report* recommended that Ecology develop guidance to address various gaps or omissions in the program or the regulation. For example, in several places Ecology is directed to develop guidance to better interpret the rule and the program goals. Other specific examples include direction to develop mechanisms to improve the dispute resolution mechanisms available to PLPs, to address unidentified PLPs earlier in the process, and to review mechanisms for funding technical assistance. While the priority remains to fix the base regulation, we would encourage Ecology to plan for the completion of these essential work products.

Thank you again for your consideration of Weyerhaeuser's comments and proposed revisions. If you have any questions, please feel free to call me at 253-924-3426.

Sincerely,

Ken Johnson
Washington Regulatory Affairs Manager

Cc Jim Pendowski
Dan Silver

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Johnson, Ann Marie D (ADOC)

From: Johnson, Ann Marie D (ADOC)
Sent: Tuesday, January 18, 2000 9:00 AM
To: Trish Akana
Subject: RE: Comments on proposed MTCA amendments

Hard copy to follow

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Chevron

January 17, 2000

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P. O. Box 6004
San Ramon, CA 94583-0804

Site Assessment and
Remediation Group
Phone (925) 842-9500
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Ms. Trish Akanan
Washington Department of Ecology
P.O. Box 47600
Olympia, WA 98504

Re: Comments to MTCA Rule Revision

Dear Ms. Akanan:

On behalf of Chevron, I received and reviewed the MTCA proposed Rule Revisions. I wanted to take this opportunity to provide specific comments on the new *Terrestrial Ecological Evaluation Procedures* (TEEP, WAC173-340-7490 to –7494), and provide some additional general comments.

668 Chevron commends the Department of Ecology for proposing a reasonable and practical approach to dealing with terrestrial ecological risk issues. Exclusion criteria, while conservative, are presented in a clear and logical manner. The proposed TEEP are straightforward and consistent with other States' protocols and policies. We also appreciate the effort performed by the State of Washington for validating these procedures
669 (i.e., pilot study) and sharing its results with interested stakeholders prior to promulgation. The pilot study results are consistent with our conclusion that the TEEP will be useful for focusing limited ecological risk assessment resources on those sites that actually have the potential for impacting ecological receptors.

670 One modification we would suggest to the proposed TEEP is to explicitly include "residential" property under the exclusionary language in WAC 173-340-7491. As written, the TEEP is not clear on how residential properties (i.e. home sites) will be considered under the "contiguous undeveloped land" definition under WAC 173-340-7491 (1) (c) (iii). Residential development clearly has its own impacts on ecological receptors (e.g., cultivation of ornamental plants, herbicide and pesticide use on soil invertebrates and native plants, fences and roads on wildlife movement). We believe roads, sidewalks and other structures (e.g., fences) common to residential communities greatly reduce the potential use of the area by native wildlife, plants and soil organisms and as such, residential developments should not be considered "contiguous undeveloped land" for purposes of this regulation.

671 A second modification that we would suggest is that you reduce the requirement for institutional controls. In our opinion institutional controls are requested far to frequently in the MTCA rewrite in general, and here appear to be needed in every occasion where contamination is to be left in place, particularly if there will ever

letter recd by e-mail 1/19/00

671 cont. by any exposed land in the future. There are costs associated with deed restrictions. This section fails to take into account that plants help in the bioremediation process and are beneficial to the environment.

672 One unresolved issue is why the "East Kent Chevron" site was not excluded during Ecology's internal pilot test. Our preliminary review indicated that this site should have been excluded. Please provide the rational for the denial of the exclusion to help us understand how this rule will be interpreted.

It is our understanding that the purpose of the MTCA rewrite is to make environmental cleanups fairer, easier to understand, more flexible, less ambiguous and less expensive. Chevron would like to see a response from Ecology to the following questions:

673 1. Is it WDOE's opinion that the current rule is easier to understand? Is it the general opinion of your staff and the public that this document is an improvement over old MTCA? Have any case studies been run? Chevron believes that this rule is far more complex and leaves much more open to the interpretation of the WDOE case worker, allowing for a more subjective implementation of the regulations.

674 2. Please provide two or three case examples of how a Method B or Method C cleanup level will be arrived at and demonstrate that this is a process improvement.

675 3. Clearly WAC 173-340-440 states that institutional controls will be applied when hazardous substances remain at the site at concentrations which exceed Method A or B cleanup standards, or the cleanup standard is established using Method C, or the cleanup level is based on an assumption of land use other than residential. When cleaning up the average service station (commercial) will there ever be a case when a deed restriction will not be required? Does Ecology understand that a deed restriction is a deterrent to redevelopment and may raise complicated property issues? Does Ecology understand that this requirement indirectly necessitates Method A cleanup of all properties that are not owned by the PLP?

676 4. It appears that WDOE will have the latitude to establish separate cleanup levels for small businesses. If we are to be protective of the environment, the regulation must be enforced uniformly, not on the subjective basis of "who can pay". One of the re-write goals was to reduce costs. How can Chevron use this rule to reduce cost – please provide specific case examples.

677 5. What is the basis for the selection of a CERCLA screening model (over all other models available) to select the revised Method A cleanup numbers? Were any other models tested?

678 6. Was any historical evaluation done on completed remediations within the state of Washington to determine if numbers used as cleanup standards in the past were too restrictive, or damaging to the environment? If so, please provide the specific case examples.

679 7. Groundwater is considered drinking water in the reasonable maximum exposure scenarios, with only minor exclusions. Clearly all groundwater in the state of Washington is not drinking water. Why has WDOE made the establishment of cleanup levels for nonpotable groundwater so technically complex that it requires the use of a site specific risk assessment? The fact that you cannot get a permit to drill a drinking water well in King County should exclude the entire region. The ASTM RBCA provides for Tier 1 cleanup levels for both soil and groundwater based on a variety of pathways, why was this model not adopted?

680 8. Please take a site-specific example and model how the WDOE envisions the Tier 2 and Tier 3 levels will be implemented. We would like to see the cleanup levels derived from the model proposed.

681 9. Why can't institutional controls be judged by the same remedy selection standards, including protectiveness and the long-term effectiveness used to judge other cleanup actions? The proposed amendment says that you cannot rely on institutional controls and monitoring? Why?

682 10. The proposed amendment allows a PLP to use Method C only when "all practicable methods of treatment are used". If Method C, and non-treatment based cleanup action meets appropriate remedy standards, why must treatment be required? If a treatment-based cleanup is not required for operating industrial properties (such as terminals) then please clarify this language within the rule.

Chevron appreciates the opportunity to comment and looks forward to continuing working with Department of Ecology on these regulations. Please contact me at 925-842-9500 if you have any questions regarding these comments. We look forward to your response.

Sincerely,

Ann Marie D. Johnson
Site Assessment and Remediation
Project Manager

TESORO

Tesoro Petroleum Companies, Inc.
3450 South 344th Way, Suite 100
Auburn, Wa. 98001-5931
253 896 8709
253 896 8861 Fax

January 17, 2000

Trish Akana
Rules Coordinator
Toxics Cleanup Program
P.O. Box 47600
Olympia, WA 98504-7600

Sent by Fax to : 360 407-7154

Subject: Tesoro Petroleum Companies, Inc. Comments on Proposed Amendment to the Model Toxics Control Act Regulation – Chapter 70.105D RCW

Dear Ms. Akana:

Tesoro has completed a review of the subject proposed rule and encloses our comments for the department's consideration. We have identified the major issues and have provided specific recommendations for addressing each.

The current draft raises significant policy considerations that should influence the department's decision as to the timing for proceeding to final regulations. Tesoro did not directly participate in the MTCA Policy Advisory Committee (PAC); however it appears that important PAC recommendations are not reflected in this draft. We question whether the department should proceed with adoption with knowledge that significant questions exist as to the extent, and manner, in which the PAC recommendations were incorporated.

Tesoro is a member of the Western States Petroleum Association (WSPA) which is submitting comments. We endorse the WSPA comments.

Tesoro appreciates the department's consideration of our recommendations. If there are any questions please feel free to contact me.

Sincerely,

Gene Burden
Senior Vice President
Government Relations

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Tesoro Comments Regarding Proposed Modifications Chapter 70.105D RCW

683

CLEANUP STANDARDS WAC 173-340-702 (4) General policies. As currently written, no boundaries are placed on the universe of "potential" future uses. By our reading, essentially any possibility remains available under this scenario, including those that could be extraordinarily unlikely. Institutional controls, including property deed restrictions, can effectively and permanently restrict potential future uses of land and resources thereby creating a smaller subset of expected future uses. Tesoro believes tools such as institutional controls should remain available to cleanup action decision-makers. Accordingly, an expectation of reasonableness should be placed on the regulatory framework.

RECOMMENDATION: Requests the following revision be made to this subsection: *"Current and potential site and resource uses. Cleanup standards and cleanup actions selected under this chapter shall be established that protect human health and the environment for current and REASONABLY EXPECTED potential future site and resources uses."*

684

COST CONSIDERATIONS. Under the proposed rule (WAC Proposed 173-340-702 (6) costs, except as otherwise provided under federal and state law, are specifically described as "*...not a factor in determining what cleanup level is protective of human health and the environment...*" The next sentence directs that "*...cost may be appropriate related to cleanup standards such as point of compliance...*"

Comment: The relationship of no cost consideration for determining cleanup level that is protective of human health and cost being appropriate for cleanup standards at point of compliance deserves clarification. We suspect that the intent is to provide flexibility for cost considerations in defining cleanup standards at certain locations affected by a contaminated site.

RECOMMENDATION: Clarification of this section's description of cost in relation to cleanup levels and cleanup standards.

685

EXPECTATIONS FOR CLEANUP ACTION ALTERNATIVES. WAC 173-340-370 (7) (c). Natural attenuation processes often require some time to be manifested in monitoring data. In addition, monitoring data that exist when cleanup alternatives are being selected may not be sufficient to document natural attenuation that is, in fact, already occurring. The best professional judgment of the Department and the potentially liable party (PLP) should be used to determine if site conditions are amenable for natural attenuation. If so, natural attenuation as a cleanup action alternative should be available for consideration even if existing data have not definitively demonstrated that contaminant degradation is already occurring.

RECOMMENDATION: The following language to be added to subsection (c) of this section: "*There is evidence that natural attenuation is occurring and will*

685 cont.

continue to occur at a reasonable rate at the site, OR, THAT SITE CONDITIONS ARE SUCH THAT NATURAL ATTENTUATION CAN REASONABLY BE EXPECTED TO OCCUR; and"

Numerous references within the proposed regulation indicate a diminished appreciation for the selection of natural attenuation as a cleanup action alternative. As a result the following new subsection is recommended:

"(e) NOTWITHSTANDING THE PROVISIONS SPECIFIED ELSEWHERE IN THIS CHAPTER, NATURAL ATTENUATION SHALL BE CONSIDERED A VIABLE CLEANUP ACTION ALTERNATIVE WHEN ACTIVE CLEANUP MEASURES ARE DEEMED TECHNICALLY OR ECONOMICALLY INFEASIBLE. INSTITUTIONAL CONTROLS SUFFICIENT TO PROTECT HUMAN HEALTH AND THE ENVIRONMENT SHALL BE REQUIRED WHEN NATURAL ATTENUATION IS SELECTED AS THE PREFERRED CLEANUP ACTION ALTERNATIVE."

686

GROUND WATER CLEANUP STANDARDS. WAC 173-340-720 (1)(a) Tesoro finds no basis to conclude, as the default condition, that ground water downgradient from a cleanup site should be considered as a drinking water source if the site's background ground water quality would not support that use. While this concept is recognized in other portions of the proposed regulation, we believe it is necessary to establish that principle at the beginning of the ground water cleanup standard section.

RECOMMENDATION: Request this subsection be revised as follows: *"...The department has determined that at most sites use of ground water as a source of drinking water is the beneficial use requiring the highest quality of ground water and that exposure to hazardous substances through ingestion of drinking water and other domestic uses represents the reasonable maximum exposure, SO LONG AS THE SITE BACKGROUND GROUND WATER QUALITY COMPLIES WITH APPLICABLE DRINKING WATER STANDARDS."*

687

GROUND WATER CLEANUP STANDARDS. WAC 173-340-720(c) Subsection (c) from the existing MTCA regulation has been deleted from the draft rule. This subsection recognizes that there are instances where shallow ground water has an extremely low probability of being used as a drinking water source, and where it is more appropriate to set ground water cleanup standards with protection of adjacent surface water as the most appropriate receptor. In any risk-based corrective action process the exposure pathways that have the greatest opportunity to be completed should be assessed. If the surface water exposure pathway is complete, while the human drinking water pathway is not complete, then ground water clean up standards should be established that are protective of surface water as the receptor.

RECOMMENDATION: The existing language should be retained in the new regulations.

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688

GROUND WATER CONSIDERATIONS. This is one of the Department's most perplexing suggestions. The current rule (WAC 173-340-720 (2)) provides for cleanup standards for beneficial use of ground waters where there is a demonstrated low probability of potential as a source for drinking water. The proposed amendments result in a situation where virtually all ground water will have to be considered as a source for drinking water which is inaccurate, inflexible, overly burdensome (on the regulated community as well as the department) and is not a practice followed by most jurisdictions. \

RECOMMENDATION. The regulations should make it clear that drinking water is not considered the default beneficial use unless there is a reasonable expectation that the exposure pathway could be completed.

689

INSTITUTIONAL CONTROLS AND NATURAL ATTENUATION. WAC 173-340-350 (9)(b)(ii) Other Requirements. There is an opportunity to modify the proposed language to achieve consistency with the Department's rationale for monitored natural attenuation as described in WAC 173-340-370 (7). It is critical to recognize that, in some cases, monitored natural attenuation is the most cost-effective permanent corrective action consistent with the Department's mandate for protection of human health and the environment. However, in many cases monitored natural attention may require a restoration time frame that is longer than some active cleanup measures. Tesoro believes it is inappropriate to instill a bias against monitored natural attenuation strictly on a temporal basis. Accordingly, we ask that consideration of technical and economic feasibility be included in this referenced section.

RECOMMENDATION: Subsection (ii) of this section be revised as follows: *"Provide for a reasonable restoration time frame WHILE CONSIDERING THE TECHNICAL AND ECONOMIC FEASIBILITY OF THE SELECTED CLEANUP ACTION ALTERNATIVE."*

690

INSTITUTIONAL CONTROLS. WAC 173-340-440 (5).

We believe subsection 173-340-440 (5), as written, effectively eliminates the use of institutional controls because in essentially every case it is "technically possible" to implement a "more permanent" cleanup action. Even if it is "possible" to implement a more permanent (i.e. active) remedial measure, it certainly is not always either technically or economically feasible to do so.

RECOMMENDATION: Requests that this subsection be removed.

691

INSTITUTIONAL CONTROLS. WAC 173-340-350 (9)(e)(ii). This subsection prevents reliance on institutional controls in instances where it is "technically possible to implement a cleanup action alternative that uses a more permanent cleanup action for all or a portion of the site" In almost every instance it "technically possible" to implement either an active or passive remedial action. In some instances, however, it is not technically or economically feasible or practical to do so, and institutional controls should be the preferred alternative.

RECOMMENDATION: This subsection should be struck from the final regulation, in that it effectively eliminates the use of institutional controls.

692

LIMITATION OF METHOD C SOIL CLEANUP TO INDUSTRIAL PROPERTY. The proposed changes to WAC 173-340-706 (1) would modify current rules on soil cleanup which extend the opportunity for application of Method C with no limitation on property category. Under (1)(b) of the proposed rule this would now only be available where the area under consideration is industrial property.

Comment: The limitation to only industrial property seems counter to risk based corrective action approach. Property use is certainly an important consideration; however it is one of many factors in evaluating alternative cleanup levels.

RECOMMENDATION: No changes be made to the current rule in this area.

693

LONG TERM EFFECTIVENESS. WAC 173-340-350 (10) (d). In recognition of the long-term effectiveness of natural attenuation as one of the alternative cleanup methodologies that are part of the "cleanup toolbox", we recommend that it be specifically added to the hierarchy of cleanup actions.

RECOMMENDATION: Modify language in this section as follows: "...The following types of cleanup action components may be used as a guide, in descending order, when assessing the relative degree of long-term effectiveness: Reuse or recycling; destruction or detoxification, immobilization or solidification, NATURAL ATTENTUATION; on-site or off-site disposal in an engineered, lined and monitored facility;

694

Media Evaluations. Proposed WAC 173-340-720 (c) appears unnecessary. We are unaware of any misunderstandings regarding the need to make any RBCA proposals be contingent on a media by media evaluation and believe this new section adds "unnecessary bulk" to an already formidable rule.

Recommendation: This section be deleted.

Tesoro Comments on Model Toxics Control Act Regulations
January 17, 2000

695

NATURAL BACKGROUND LEVELS. Under the current WAC 173-340-700 (4)(d) cleanup levels shall be established at a concentration equal to the natural background concentration. The proposed regulations change this as follows:

"...In some cases, cleanup levels calculated using the methods specified in this chapter are less than natural background levels or levels that can be reliably measured. In those situations, the cleanup level shall be established at a concentration equal to the practical quantitation limit or natural background concentration.

Comment: We believe the department intends that this regulation is to be interpreted to mean that the cleanup level will be to the practical quantitation limit where background levels are less than can be reliably measured and that the cleanup level will be to the background level when it exceeds the reliably measured levels.

RECOMMENDATION: "..."In those cases where the natural background levels are less than can be reliably measured, the cleanup level shall be established at a concentration equal to the practical quantitation limit. Otherwise, the cleanup level shall be equal to the natural background concentration..."

696.

NONPOTABLE GROUND WATER – CLEANUP LEVELS. WAC 173-340-720(7). This section requires that nonpotable ground water must flow into surface water to be eligible for classification as nonpotable. We see no basis for placing this restriction on nonpotable ground water. When ground water does not meet drinking water standards, it should be declared nonpotable regardless of whether it flows into surface water or not. We find no rationale for specifying a particular receptor to make the classification of potable or nonpotable.

RECOMMENDATION: Subsection (ii) should be removed from the draft.

697

TECHNICAL AND ADMINISTRATIVE IMPLEMENTABILITY WAC 173-340-350(10) (f). We note that in almost every case, any alternative is technically possible. However, most of those alternatives may be either ineffective or far more costly than other alternatives that would be equally protective of human health and the environment.

RECOMMENDATION: Request the section be amended as follows: "Ability to be implemented including consideration of whether the alternative is technically ~~possible~~ AND ECONOMICALLY FEASIBLE, availability of necessary off-site facilities...."

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698

TREATABILITY STUDIES. WAC 173-340-350 (13)(c)(v). The proposed regulation would preclude the use of monitored natural attenuation in conflict with the principle described the proposed WAC 173-340-307(7). Tesoro believes it is appropriate to clarify the recognition under MTCA that the combination of monitored natural attenuation and institutional controls is effective in protecting human health and the environment. However, this type of alternative often requires a longer implementation period than do active remedial measures.

RECOMMENDATION: Revise this section as follows: "Extending the restoration time frame shall not be used as a substitute for active cleanup actions, when such actions are practicable, UNLESS THE EXTENDED CLEANUP ACTION ALTERNATIVE, IN COMBINATION WITH APPROPRIATE INSTITUTIONAL CONTROLS IMPLEMENTED DURING THE EXTENSION PERIOD, CAN BE SHOWN TO BE EQUALLY PROTECTIVE OF HUMAN HEALTH AND THE ENVIRONMENT."

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Page 7 of 7

WSPA
Western States Petroleum Association

Daniel T. Riley
Northwest Regional Manager

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NINETY YEARS OF SERVICE
to the Petroleum Industry in the West
1907-1997

January 17, 2000

Ms. Trish Akana
Rules Coordinator, Toxics Cleanup Program
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Re: Comments on Proposed Amendment to the Model Toxics Control Act Regulation

Dear Ms. Akana,

Thank you for the opportunity to comment on the proposed amended Model Toxics Control Act Regulation. The Western States Petroleum Association (WSPA) is a trade association whose members conduct much of the production, refining, transporting and marketing of petroleum and petroleum products in the Western United States. Our members have participated extensively in the 5-year process to improve the MTCA regulation. Following this cover letter are specific comments on some of the more critical issues to our members.

WSPA appreciates Ecology's hard work and effort in developing the proposed regulations. However, the proposed amendments fall woefully short of the goal to make MTCA "fairer, easier to understand, more flexible, less ambiguous and less expensive". WSPA recommends that Ecology either significantly modify the proposed amendments so that they are reflective of the Policy Advisory Committee recommendations, or withdraw the notice of proposed rule making and reconvene negotiations to develop the rule in accordance with RCW 34.05.310. We make this recommendation fully aware that everyone, including our members, has spent a significant amount of time in this effort. We all wish to see this process reach its conclusion, but it is far more important to have a regulation that will work for all involved.

The proposed rule is unacceptable for many reasons. Although it professes to include a process for establishing risk-based cleanup levels, it does not include even the minimal elements of the RBCA process. Additionally, the proposal for developing cleanup levels relies on models that use extremely conservative assumptions, resulting in cleanup levels that are inconsistent with Ecology's experience under MTCA. Furthermore, at the vast majority of sites, cleanup levels are based on ingestion of water, an exposure scenario that is inappropriate for many sites. With regard to remedy selection, the proposed amendments ignore the PAC recommendations regarding the elimination of the bias towards active remediation. As a result of these and other issues, the rule fails the standard that Ecology set for itself; that environmental cleanups would be fairer, easier to understand, more flexible, less ambiguous and less expensive.

WSPA members are committed to working with Ecology to develop a cleanup regulation that will serve the needs of business, the environmental community and the state. We are available to discuss our recommendations or participate in any venue to conclude the MTCA effort.

Sincerely,

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isues\mtca\mtca comments.doc

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Comments by the Western States Petroleum Association on Amendments to the Model Toxics Control Act Regulation Proposed by the Department of Ecology

January 17, 2000

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Introduction

On November 17, 1999, the Department of Ecology (Ecology) formally issued a notice of proposed rulemaking to amend the Model Toxics Control Act (MTCA) regulation.[1] The purpose of the amendments is to "[i]mplement changes recommended by the Policy Advisory Committee in its December 1996 report to the legislature and ecology; comply with other laws and the governor's executive order on regulatory reform."[2]

The Western States Petroleum Association (WSPA) is a trade association whose members conduct much of the producing, refining, transporting and marketing of petroleum and petroleum products in the western United States. WSPA has a strong interest in the implementation of MTCA. It has participated in the 5-year effort to improve the program from the beginning. Two WSPA members served as alternates on the Policy Advisory Committee; WSPA has been an unofficial member of the Duwamish Brownfields/TPH Project Oversight Group; and WSPA members or representatives have participated in numerous discussions and negotiations with Ecology and other MTCA stakeholders.

In the fact sheets that accompanied the release of the proposed amendments, Ecology states: "It is intended that these changes will make the business of environmental cleanups fairer, easier to understand, more flexible, less ambiguous and less expensive."[3] As Ecology has noted, these goals were the focus of all of the recommendations made by the Policy Advisory Committee.[4] WSPA fully agrees with Ecology and the Policy Advisory Committee. These goals succinctly describe the objectives of MTCA reform, and they provide a standard by which we should evaluate the proposed amendments.

699 WSPA appreciates Ecology's hard work and dedication in developing the proposal. We know that it represents a great effort by many talented people within the department. However, the proposed amendments fall woefully short of the goal to make MTCA "fairer, easier to understand, more flexible, less ambiguous and less expensive." Although we believe that this objective remains within reach, we do not believe that it can be achieved by Ecology merely reviewing and responding to public comment on the proposal. As presently drafted, the proposed amendments would make MTCA worse, not better.

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[1] WSR 99-22-077 (Nov. 17, 1999) (Proposed Amendment).

[2] Proposed Amendment at 92.

[3] Fact Sheet: Proposed Changes to the Model Toxics Control Act Cleanup Regulation (Nov. 1999).

[4] Rule Authorization Document, Revisions to Chapter 173-340 WAC Model Toxics Control Act (Mar. 1997).

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Recommendation

WSPA recommends that Ecology either significantly modify the proposed amendments so that they are reflective of the Policy Advisory Committee recommendations or withdraw the notice of proposed rule making, and reconvene negotiations to develop the rule in accordance with RCW 34.05.310.

WSPA makes this recommendation fully aware that everyone, including our members, wishes to see this process reach its conclusion. It has already taken far too long. Although we are all tired, the incredible commitment of time and talent by so many hundreds of individuals, businesses and organizations should motivate us to make sure we get it right.

Discussion

As the following discussion shows, adoption of the proposed amendments would be a major step backward for the MTCA program. The many stakeholders who have participated in the effort to improve MTCA are entitled to something better. However, before discussing the substantive flaws in the proposal, a review of the process that has led us to this point would be helpful.

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Ecology Did Not Fulfill Its Commitment to Negotiate the Terms of the Rule

When Ecology commenced the process to rewrite the MTCA regulation, it committed itself to engage in a negotiated rule making.[5] However, it has not fulfilled that commitment. That is particularly unfortunate; since real improvements to MTCA have always been achieved by negotiation among all stakeholders.

1995-1996: The Policy Advisory Committee

The effort to improve MTCA began in 1995, when the Legislature passed ESHB 1810.[6] That legislation directed Ecology to establish the Policy Advisory Committee (PAC) "to provide advice to the legislature and the department on administrative and legislative actions to more effectively implement the model toxics control act...."[7] "In conducting its review the committee shall, wherever possible, operate on a consensus basis and, when consensus is not possible to achieve, the committee should encourage the development of recommendations that are broadly supported within the committee."[8]

Over a period of approximately 17 months, the PAC met 25 times as a full committee. Four subcommittees, focused on risk assessment, remedy selection, independent cleanups and implementation, and a number of task forces, met even more often. As required by the

[5] WSR 97-10-092 (May 21, 1997).

[6] Laws of 1995, ch. 359.

[7] ESHB 1810, ∋ 1(1).

[8] ESHB 1810, ∋1(4).

Legislature, the PAC submitted its final report on December 15, 1996.[9] The report addressed 28 issues, making specific consensus recommendations for most of them.

702 As a member of the PAC, Ecology consistently indicated to other PAC members that its intention was to adopt a rule that would implement the PAC's recommendations. In 1997, Ecology reiterated this commitment: "The overarching direction from the Committee is a clear expectation that Ecology amend the rule. Throughout participation as a member of the Committee, Ecology's commitment has been to do a rule; to remain as faithful as legally possible to language already negotiated; and to bring the parties together to negotiate language where the Committee did not develop proposed rule." Ecology stated that "[t]o ignore the recommendations would be a breach of faith and would thwart the intent of the legislation that created the Committee process."[10]

703 *1997-1998: Ecology's First Draft*

However, the rule development process has involved very little negotiation. Instead, Ecology formed an External Advisory Group with which it occasionally consulted as it wrote the rule language itself. Ecology's interaction with the External Advisory Group was not a negotiation in any sense of the word. It certainly was not a negotiation as contemplated under the Administrative Procedures Act. The intent of a negotiated rule making is to "seek to reach consensus on the terms of the proposed rule";[11] in other words, to develop consensus-based rule language that is filed as the proposed rule for official public hearing and comment.[12]

In February 1998, Ecology released a pre-proposal draft rule that was the culmination of its internal rule writing process. That draft was almost universally criticized as overly complex and unworkable, and as failing to reflect the recommendations of the PAC. Eventually, even Ecology admitted that the February 1998 draft was fundamentally flawed. It invited stakeholders to participate in a series of negotiations in the summer of 1998, and specifically encouraged parties to submit alternative rule language for those negotiations.

704 *1998: Limited Negotiations and Ecology's Second Draft*

For a brief period, then, Ecology did conduct a negotiated rule making. Among the ground rules for the negotiations, it was agreed that "[t]he focus is to draft specific rule language AT THESE SESSIONS, and reach a consensus among those at the table."[13] However, these negotiations failed to address key elements of the amendments. And although specific rule language was agreed upon in a few instances, for the most part, Ecology reserved for itself the authority to unilaterally draft language – or even change language that had been agreed upon.

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[9] Final Report of the Model Toxics Control Act Policy Advisory Committee (Dec. 15, 1996).

[10] Rule Authorization Document, Revisions to Chapter 173-340 WAC Model Toxics Control Act (Mar. 1997).

[11] RCW 34.05.310(2)(a) (emphasis added).

[12] Office of Financial Management, A Guide to Negotiated Rule Making, Appendix A.

[13] Guidelines for MTCA PAC Rule Facilitation (July 27, 1998) (emphasis in original).

705 *The Proposed Amendments Fail to Improve MTCA*

As noted above, Ecology has said that the intent of MTCA reform is to make the business of environmental cleanups fairer, easier to understand, more flexible, less ambiguous and less expensive. The proposed amendments will not meet this goal. In fact, if implemented in its current form, the proposal would result in longer, more complex and more expensive cleanups. More importantly, these longer, more complex and more expensive cleanups will not result in better protection of human health and the environment.

The priority of both the potentially liable person and Ecology in a environmental cleanup should be the protection of human health and the environment. A major challenge is to maintain this protection within the reality of limited public and private resources. In order to achieve maximum benefits to human health and the environment, a cleanup regulation must be based on sound science and must ensure that finite resources are focused on those sites (and the specific aspects of sites) that pose the greatest risk to human health and the environment.

706 A cleanup regulation must also contain the elements of certainty, clarity and consistency so that PLPs, prospective purchasers, lenders, the general public, and others can accurately gauge the true cost and benefits of the cleanup. A rule that lacks certainty, clarity and consistency may have the effect of discouraging some PLPs from voluntarily entering into the cleanup process.

707 After having read the proposed amendments, we conclude that it is unlikely that the revised rule could meet its stated goals with just a small number of fixes or language changes. Unfortunately, we believe that the department needs to take a step back and look at the intention of the revisions, at the recommendations of the PAC and the POG, and at the need to make the rule a truly risk-based system before proceeding any further with the process.

Following is a discussion of major aspects of the proposed amendments that we believe need to be addressed. Included are examples of the rule's excessive complexity and incompatibility with a risk-based decision making process. We emphasize that these are merely examples; this is not an exhaustive list of all revisions to the proposed amendments that would be necessary for the rule to meet its goal of making MTCA fairer, easier to understand, more flexible, less ambiguous and less expensive.

708 *Risk-Based Cleanup*

The proposed amendments contain the structure of a three-tiered system for establishing cleanup levels. Accordingly, Ecology has claimed in the fact sheet for petroleum cleanups that the amendments contain a risk-based approach based on the nationally recognized ASTM Risk-Based Corrective Action (RBCA) model[14]. However, a close examination clearly reveals that the similarities are almost entirely superficial and that the proposed amendments fail to incorporate even the basic principles of the ASTM RBCA model. The ASTM RBCA[15] contains

[14] Fact Sheet: Proposed Changes to the Model Toxics Control Act Cleanup Regulation – Petroleum Cleanup (November 1999).

[15] ASTM E1739-95e1 Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites, © 1997 American Society for Testing & Materials.

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three key elements that are largely missing in the proposed amendments; allowance for a reasonable assessment of potential exposure, cleanup levels based on complete exposure pathways, and a tiered-system for setting cleanup levels with significant flexibility at the higher levels.

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It is simply not possible to have a risk-based program that does not allow for a realistic evaluation of potential risks. Foundational to the problems in the proposed amendments is the very limited ability to evaluate and use realistic exposure scenarios in establishing cleanup levels. MTCA (and the ASTM RBCA) provides for the use of Reasonable Maximum Exposure (RME) scenarios based on estimates of current and future resource uses. However, MTCA subsequently establishes that groundwater use as drinking water will be the RME at most sites, allowing for only very limited exceptions. The criteria for demonstrating that groundwater is not a reasonable current or future source of drinking water are very narrowly defined and result in the over-classification of a number of groundwater resources. This stipulation of almost all groundwater as drinking water is over-conservative and is inconsistent with the RME definition of "reasonably expected to occur at a site under current and potential future site use"[16]. This is particularly true given the current understanding of attenuation processes and the natural degradation of petroleum compounds over time.

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Under the ASTM RBCA process, it is fully anticipated that cleanup levels at many, if not most, sites will be based on RMEs other that groundwater ingestion. The proposed MTCA amendments contain only a very limited ability to establish cleanup levels based on non-drinking water RMEs. Further, establishing cleanup levels based on non-drinking water utility is technically complex. For example, the establishment of cleanup levels for non-potable groundwater requires the use of a site-specific risk assessment[17]. By comparison, the ASTM RBCA provides for Tier 1 cleanup levels for both soil and groundwater based on a variety of exposure pathways including ingestion, direct contact, and transport to other media. This results in a system that is more useable for all sites.

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The three tiered-system for establishing cleanup levels in the proposed amendments is not comparable to the ASTM RBCA process. Method A contains very conservative cleanup levels based exclusively on the RME of groundwater as drinking water. Cleanup levels for other exposure pathways are not included. There are two methods for establishing Method B and C cleanup levels; standard and modified. In several of the fact sheets, Ecology has indicated that site-specific information can be used in establish cleanup levels and according to Section 700(5)b, Modified Method B provides for the use of site-specific information to change selected default assumptions. However, a review of the Modified Method B for groundwater reveals that the changeable assumptions are not in fact site-specific, but rather are various toxicity factors that do not result in site-specific cleanup levels tailored to the risks at a site[18]. The only site-specific information used in establishing groundwater cleanup levels is the use of TPH

[16] Proposed Amendments, p. 157. Section 708 (3)(b).

[17] Proposed Amendments, p. 169. Section 720 (7)(b)(i)(C).

[18] Proposed Amendments, p. 167. Section 720 (4)(c).

reply as Page 6 of 10

711 cont. composition to set a fraction-based level. Further, an initial review suggests that the output of the Method B and C equations is very similar to the Method A values. This is completely inconsistent with the ASTM RBCA model in which site-specific information is used to reduce uncertainties assumed in the conservative Tier 1 calculations regarding exposure or fate and transport of constituents. This adjustment of exposure or modeling features to address site specific uses and conditions is done without changing the target risks and level of health protection. Under an ASTM RBCA approach, the result of using site specific information in Tier 2 or Tier 3 is frequently higher cleanup levels. In fact the primary flexibility in the higher tiers within MTCA is allowed solely for purposes of establishing remediation levels or for justifying a remedy selection.

712 ***The Remedy Selection Process***

The proposed amendments regarding remedy selection are not consistent with the recommendations of the PAC and do not meet the goal of making cleanups more equitable, more flexible, easier to understand, less ambiguous, and less expensive. The current remedy selection process contains a number of competing concepts that must be evaluated including "permanent solutions", "technically possible", and "practicable". These concepts should be replaced to the maximum extent possible by one simple concept; cleanup to the extent necessary for protection of human health and the environment.

713 The remedy selection process is clearly biased toward active remediation as opposed to selecting cleanup actions based on protection of human health and the environment. For instance, the proposed amendment states that "[c]leanup actions shall not rely primarily on institutional controls and monitoring where it is technically possible to implement a cleanup action alternative that utilizes a more permanent cleanup action for all or a portion of the site."[19] This provision is plainly inconsistent with the PAC's recommendation (reflected in section 350 subsection (9)(e)(iii) of the proposed amendments) that "institutional controls [be] judged by the same remedy selection standards, including protectiveness and long-term effectiveness, as are used to judge other cleanup actions."[20] Although application of the PAC-recommended remedy selection standards would not be expected to often lead to cleanup actions based primarily on institutional controls, such a categorical proscription is unjustified. If a cleanup action based on institutional controls is protective of human health and the environment and meets the other standards for selection of a remedy (e.g., is permanent to the maximum extent practicable, etc.), it should be acceptable.

714 This provision seems to preclude the use of an "industrial use" designation even where such a designation would fully protect human health and the environment. For example, how would this provision apply to an industrial site with moderate to high levels of soil contamination that are shown to not present a contact risk to humans or wildlife, and to not present a risk to a

[19] Proposed Amendments, p. 120. Section 350 (9)(e).

[20] PAC Report, p. 33.

beneficial use of groundwater? At this type of site, the obvious remedy would be to place an institutional control on the site that restricts its use as industrial only. The proposed amendments, however, appears to preclude the selection of this cleanup action; instead, it appears to require a remedy that is "technically possible" (e.g., excavation), regardless of the risk posed by the site.

715 Another example is the categorical requirement to use a technology-based remedy, such as AKART. This requirement is illogical where a non-treatment-based remedy meets the applicable remedy selection standards (including permanent to the maximum extent practicable), and is inconsistent with the PAC recommendation to eliminate the priority given to treatment technologies in remedy selection. Moreover, it is contrary to the PAC recommendation "to limit, to the extent allowed by law, the instances when an AKART analysis must be conducted in addition to the remedy selection analyses required by WAC 173-340-360."[21]

716 Yet another example of the bias for active treatment is found in the criteria for use of Method C. The proposed amendments retain a requirement of the current rule that a PLP may use a risk-based method C cleanup level only after "all practicable methods of treatment are used."[22] If method C levels are protective of human health and the environment, and a non-treatment-based cleanup action meets the applicable remedy selection standards (including permanent to the maximum extent practicable), what is the logical justification for requiring treatment? The retention of this language is inconsistent with the PAC recommendation to eliminate the priority given to treatment technologies in remedy selection.[23]

717 An additional issue of concern is the use of conditional points of compliance. Section 720 (subsection (9)(c)) states that a conditional point of compliance can be used "[w]here it can be demonstrated under WAC 173-340-350 through 173-340-390 that it is not practicable to meet the cleanup level throughout the site within a reasonable restoration time frame". Use of the concept of practicability muddles what should be the overriding issue in establishing cleanup standards – whether moving a point of compliance to a property boundary (or to a point beyond the property boundary for that matter) presents an unacceptable level of risk to human health and the environment. The section then goes on to say that "[w]here a conditional point of compliance is proposed, ... all practicable methods of treatment are to be used in the site cleanup."[24] As discussed above with respect to the use of Method C cleanup levels, if a cleanup standard is protective of human health and the environment, and a non-treatment-based cleanup action meets the applicable remedy selection standards (including permanent to the maximum extent practicable), there is no logical justification for requiring treatment. Moreover, such a requirement is inconsistent with the PAC recommendation to eliminate the priority given to treatment technologies in remedy selection.

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[21] PAC Report, p. 35.

[22] Proposed Amendments, p. 155. Section 706 (1)(a).

[23] PAC Report, p. C-46.

[24] Proposed Amendments, p. 170. Section 720 (9)(c).

718 *Cleanup Levels*

The proposed amendments regarding cleanup levels have resulted in an extremely conservative approach that is inconsistent with the stated intent of making cleanups more equitable, more flexible, easier to understand, less ambiguous, and less expensive.

719 Of particular concern are the changes to Method A Soil Cleanup Levels for TPH as gasoline and BTEX compounds. These changes are based on an overly simplistic model that ignores basic principles of how hydrocarbons act in the environment. The model uses overly conservative values for input parameters that result in redundant conservatism. The results of the model suggest that the current Method A Soil Cleanup Levels are not adequately protective of groundwater. However, a large number of sites have already been remediated using current Method A Soil Cleanup Levels. We are aware of no empirical evidence that suggests that the existing cleanup levels have been unprotective. What this comparison between empirical evidence and the model results demonstrates is the inappropriateness of the model and assumptions used to generate the Method A Soil Cleanup Levels.

720 Furthermore, it is this same model that is used to develop Standard Method B Soil Cleanup Levels. There is essentially no difference in Method A and Standard Method B Soil Cleanup Levels, except that Method B allows for use of a fraction-based approach for TPH. In order to insert any flexibility into the process and move away from Method A Soil Cleanup Levels, the Modified Method B must be utilized. Although the alternatives described under Modified Method B contain flexibility, they will require a substantial effort that may not be appropriate for many sites. In other words, a complicated and expensive Modified Method B cleanup level must be calculated just to establish cleanup levels equivalent with current Method A Soil Cleanup Levels. It is difficult to understand how these changes meet the stated intent of the proposed amendments.

721 Additionally, the establishment of cleanup levels lacks significant flexibility. This is primarily due to the use of groundwater as drinking water as the Reasonable Maximum Exposure (RME) at the vast majority of sites. The criteria for demonstrating non-potability[25] are overly narrow and prevent a realistic assessment of potential exposure pathways and the selection of cleanup levels based on a reasonable determination of potential risk. Realistically, cleanup levels at a large percentage of sites should be based on RMEs such as groundwater discharging to surface water, vapor transport to outdoor or indoor air, or direct contact with soils. This would be consistent with risk-based programs in numerous other states where non-drinking water pathways frequently drive the establishment of cleanup levels. The combination of very conservative models and assumptions, along with the inability to use realistic RMEs produces cleanup levels that are unnecessarily conservative and result in cleanups with much higher costs than are necessary to protect human health and the environment.

[25] Proposed Amendments, p. 164. Section 720 (2).

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Most of the flexibility allowed regarding establishment of cleanup levels is only permitted for setting remediation levels or for evaluating a proposed remedy. When conducting this type of an evaluation the default RME (drinking water) can be changed to reflect a more reasonable exposure scenario for the site[26]. However, cleanups involving remediation levels are not considered permanent solutions and require the use of institutional controls. Thus this apparent flexibility is not available for establishing actual cleanup levels.

Conclusion

As stated above, the proposed rule is unacceptable for many reasons. Although it professes to include a process for establishing risk-based cleanup levels, it does not include even the minimal elements of the RBCA process. Additionally, the proposal for developing cleanup levels relies on models that use extremely conservative assumptions, resulting in cleanup levels that are inconsistent with Ecology's experience under MTCA. Furthermore, at the vast majority of sites cleanup levels are based on ingestion of water, an exposure scenario that is inappropriate for many sites. With regard to remedy selection, the proposed amendments ignore the PAC recommendations regarding the elimination of the bias towards active remediation. As a result of these and other issues, the rule fails the standard that Ecology set for itself; that environmental cleanups would be fairer, easier to understand, more flexible, less ambiguous and less expensive.

[26] Proposed Amendments, p. 182. Section 740 (3)(c)(v).

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Newlon, Tom

original

To: Trish Alicia Akana (E-mail)
Cc: Warren Hansen (E-mail); Leavitt, Elizabeth; Agid, Paul
Subject: Port of Seattle Comments on Proposed MTCA Amendments

Trish:

Attached are the Port of Seattle's comments on the proposed MTCA regulations. As you know, we have been involved in the PAC/EAG/POG processes from the beginning and have provided input in various forms. I believe we have maintained a consistent theme regarding the need for rules that are protective yet at the same time not so burdensome that they discourage the type of development-driven cleanup that makes up most of the remediation activities in Washington. The concept of facilitating voluntary/independent cleanup activities has never been more important than now, following the passage of Initiative 695. The State of Washington simply will not be allocating major new resources for enforcement-lead cleanup activities. So, how do the proposed regulations measure up? I am afraid the degree of complexity added to the regulations and the numerous unnecessary, extraneous considerations that PLPs are forced to work through make the proposed rule much more of an impediment than it needs to be. Specific instances that will be a problem for the Port of Seattle and other brownfields developers are called out in our comments. We request that you review these comments with an eye towards making cleanups work, rather than making sure that every conceivable scenario is fully addressed in some fashion directly in the rule.

In terms of format, Attachment I is a summary of our earlier comments, with a statement regarding whether the comment was addressed in the current proposed version of the rule. To the extent the comments were not addressed, we request that the needed changes be made in the final rule. Additional, new comments are included in Attachment II.

Please confirm by return e-mail to both me and Warren Hansen (cc'd above) that you have received this e-mail and can open the attachments. We will also be sending a hard copy, but you will not receive that till later in the week. We look forward to a continued positive working relationship with Ecology on these issues.

Tom Newlon

Atthment I.doc

Attachmt II.doc

Tom

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ATTACHMENT I

EVALUATION OF RESPONSES TO THE PORT OF SEATTLE COMMENTS ON THE DECEMBER 1998 DRAFT PROPOSED AMENDMENTS TO MTCA.

January 17, 2000

The identification and discussion of issues presented by the Port of Seattle (Port) to the Department of Ecology based on the December 1998 draft proposed amendments to MTCA are presented below. Following each comment is boxed text describing how Ecology has addressed the comment in the final proposed amendments, dated November 1999. Note: The page numbers cited in this document should be referenced to the December 1998 draft proposed MTCA amendments. However, please note that page numbers in boxed text refer to page numbers in the Proposed Amendments as published in the November 1999 Publication ECY 99-606 (salmon-colored cover).

Comments were transmitted to Ecology by the Port in three separate memoranda:

Subject	Date	Author(s)
Comments on Draft MTCA Regulations	February 1, 1999	Thomas A. Newlon
Port of Seattle Comments Concerning Proposed MTCA Rule (12/14/98 draft)	February 12, 1999	Elizabeth Leavitt Thomas A. Newlon
Additional Port of Seattle Comments on MTCA Draft Rule	April 2, 1999	Thomas A. Newlon

COMMENTS ON DRAFT MTCA REGULATIONS (February 1, 1999)

723

Point of Compliance Issues, Introductory Thoughts. WAC 173-340-720(10)

During the PAC deliberations, point of compliance issues were identified as key components of a package of changes designed to stimulate brownfields cleanups. *See* PAC Report at 34, 37. Ecology was instructed to allow for points of compliance beyond property boundaries to facilitate areawide cleanups, and to allow for offsite and groundwater/surface water interface points of compliance in situations that were specified in some detail in the PAC Report and deliberations. Further, the PAC sought to simplify the process by limiting, "to the extent allowed by law," the instances in which an AKART analysis must be included in addition to the basic remedy selection analysis of –360. The draft regulation falls short relative to these mandates in some significant respects.

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Conditional Point of Compliance Limitations

The draft regulation includes a requirement that a conditional point of compliance is not available unless a demonstration is made that "all practicable methods of treatment are . . . used in the site cleanup." -720(10)(c). This is a remedy selection requirement that has somehow found its way into a section defining conditional point of compliance. This process of sprinkling remedy selection dictates here and there in the regulation outside of the remedy selection provisions is one that Ecology cannot seem to let go of. It is a backhanded way of dealing with policy issues that should be dealt with up front in remedy selection. There is no need for the addition of this language, as the remedy selection provisions make it clear that selected remedies must be protective of human health and the environment and must be permanent to the maximum extent practicable. Achieving these requirements will generally mean that practicable treatment methods will be employed. So at best, the requirement is extraneous and redundant. At worst it will have the effect of causing substantial confusion, and will in some instances require an analysis in addition to the remedy selection analysis already required. This is exactly the type of complication that in reality will add nothing to the protectiveness of the MTCA program and, when added in with other complicating requirements of its ilk, has the potential of turning off the voluntary cleanup tap at some sites. The PAC did not ask for it. It is not necessary. It should come out.

Comment not addressed. Language requiring "all practicable methods of treatment" remains in Section 720(9)(c). It should be deleted.

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AKART Issues

The AKART provisions of the PAC Report are not followed in the draft regulation. The only justification I have heard for maintaining AKART as a requirement is that an Assistant Attorney General (who does not routinely work in the MTCA arena) has determined that AKART is an ARAR. This question has been before the PAC and the EAG for years now, and we have consistently asked for a written determination from the Attorney General's office on the subject. We only received word on his opinion nearly *three years* after the MTCA reform process was started, and we still have seen nothing in writing. Lacking any kind of analysis on this issue, I asked Preston Gates and Ellis to provide the attached analysis of the question. It confirms the view many of us have long expressed on this question: even if AKART is indeed an ARAR in some or even most instances, it is not of necessity an ARAR in *every* instance where discharges to surface water occur, and should therefore not be included in the regulation as an absolute requirement.

The PAC Report directs Ecology to "limit, to the extent allowed by law, the instances where an AKART analysis must be conducted . . . ." This direction has not been followed in the draft regulation. The language equating AKART to "permanent to the maximum extent practicable" includes the caveat that the remedy must employ "at least ground water containment measures to eliminate or minimize releases to surface water." Once again,

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Ecology staff has layered in a remedy selection item where it does not belong. This time it is in direct contradiction of a PAC requirement. There is certainly no legal requirement that containment measures be a threshold requirement to meet "permanent to the maximum extent practicable." This is simply the policy preference of certain Ecology staff who apparently disagree with the breadth of the PAC recommendation. As with the extraneous requirement noted above concerning conditional points of compliance, it will do no incremental good (if Ecology believes containment is needed to meet remedy selection requirements, require it at each site where it is needed) and it has the potential for harm in the same way as noted above.

Comment not addressed. AKART requirement still retained. It should be deleted.

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Point of Compliance for "Sites Near Surface Water"

The provisions of –720(10)(d)(ii) related to "sites near, but not abutting, surface water" are faithfully reproduced from our small group discussions and agreement on this topic. I understand that Ecology is making a special effort to solicit comments on offsite points of compliance issues raised by Greg Wingard in our small group discussions. I have attached a copy of an article on encouraging brownfields cleanups that is germane to this topic. Requirements of the type that have been included in earlier drafts of the regulations should be avoided. The PAC's desire was to allow for offsite points of compliance as a mechanism to help out with difficulties that arise most frequently in urban/industrial areas with small parcels and ubiquitous low-grade groundwater and soil contamination. These are the areas that can be profitably cleaned up and restored to productive use if the rules do not throw up too many obstacles.

The compromise language in the current draft is quite sensible in that it allows two or more parcels to be combined (with the full agreement of the property owners) and treated in the remedy selection process as if they were one. It does not allow for further spread of contamination between its current extent and a more distant point of compliance, so there should be no concern that it provides a "license to pollute." A mechanism such as that provided for in –720(10)(d)(ii) is absolutely essential if the pace of cleanups is to quicken in areas such as the Duwamish Industrial Corridor and the Ballard/Interbay Northend Manufacturing and Industrial Center which have a large number of small property owners. Without the ability to aggregate properties for cleanup decisionmaking, cleanup in these areas will continue at its current moribund pace.

A final comment related to sites near surface water concerns Figure 720-2. The decision "diamond" describing the issue of property owner permission for a surface water interface point of compliance asks the question as follows: "Will property owners between source and surface water give permission for contaminating their property?" This is not an accurate depiction of what –720(10)(d)(ii) involves. The downgradient property owner is not permitting additional spread of contamination (which is prohibited by the regulation). His property is *already* contaminated. He is giving permission for the remedial decisionmaking process to treat his or her property in an aggregated fashion with one or more upgradient properties in determining cleanup measures to ensure that standards are met at the point of compliance. More properly stated, the question should ask, "Will property owners between

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source and surface water give permission for use of an off-site conditional point of compliance?"

Comment partially addressed. The "decision diamond" figure was removed. However, new language under 720(9)(d)(ii) (page 171) makes reference back to (9)(d(i) [note: in previous draft these were numbered (**10**)(d)(ii) and (**10**)(d)(I)]. This imposes the same conditions on ground water cleanups for sites near, but not abutting, surface water as required for sites abutting surface water. These requirements include the AKART requirement in (D) and the requirement not to violate sediment quality values (E). These requirements should be deleted.

727

Ground Water Compliance and Dilution

The language of subsection –720(10)(e)(ii) related to the use of dilution estimates in determining compliance at the surface water/ground water interface does not follow the PAC recommendation. The language concerns use of an upland groundwater monitoring well to measure compliance, and the need to estimate what the concentrations of contaminants will be at the actual point of compliance when that point is the surface water/ground water interface. I was involved with those discussions during the PAC deliberations and the topic was discussed at length during at least one PAC meeting. The language used in the PAC Report was discussed in detail. The Report states as follows on the subject:

> These revisions [the new MTCA regulations] *should* also allow an estimate of the dilution that occurs between the upland monitoring well and the point of discharge to surface water to be used to calculate the cleanup level at the point of compliance. Because estimating the dilution that may occur between an upland monitoring well and nearby surface water may be difficult, Ecology should consult with affected stakeholders in identifying appropriate procedures. Ecology should also consult with affected stakeholders in developing regulatory language and guidance. PAC Report at 34 (emphasis added).

The language of the draft regulation makes use of a dilution estimate discretionary with Ecology by saying that Ecology "*may* consider an estimate of dilution . . . ." The regulation then goes on to describe factors to consider in determining whether to allow for consideration of dilution. In order to properly implement the PAC recommendation, the language should say that Ecology *will* consider dilution estimates. The factors for consideration currently in the draft are certainly appropriate for evaluation in determining *how much* of a decrease in contaminant concentration to attribute to dilution over the distance between the monitoring well and the surface water/ground water interface. If there are significant ground water "shortcuts" in place, then the dilution allowance may be quite small or even nonexistent. However, existence of ground water shortcuts should not be used as a basis for disallowing any consideration of dilution whatsoever. The PAC Report is clear that Ecology needs to develop appropriate procedures and regulatory language to implement the regulation. Those procedures and language should not simply hand over to Ecology staff the ability to unilaterally decide that any consideration of dilution is inappropriate. That would be in direct contravention of the PAC direction related to dilution

727 cont.

and point of compliance determination. Instead, the procedures and implementing language should identify considerations related to determining how much dilution is actually occurring so that the compliance determination is accurate. That is the context in which Ecology was directed to consider "shortcuts" and other site-specific considerations.

Comment addressed (page 171).

PORT OF SEATTLE COMMENTS CONCERNING PROPOSED MTCA RULE (12/14/98 draft) (February 12, 1999)

This memorandum provides technical comments to supplement the comment memo of February 1, 1999 from Tom Newlon. Comments are listed according to page where the subject language appears in the draft document. The POG consensus process is still not complete, so we will be providing an additional set of comments when those remaining matters are resolved. Those comments will also include some additional matters related to risk assessment and the new ecological standards.

728

1) Page 29, 173-340-360 Selection of cleanup actions

A general comment concerning remediation levels - It is difficult to understand when RL's are used, how they are used, what conditions they are used under, etc. One significant problem is that important RL expectations/conditions are distributed throughout the rule. First, there is no explanation in the RL section that the average RL will just be a Method B/C cleanup equation with modified exposure parameters. This is located in the cleanup standards section. Next, the exposure parameters' that one is allowed to alter are located in 708, (page 86). Third, there is nothing in -360 that says that RL's require institutional controls until cleanup standards are achieved. This information can found tucked into Section 440(4)(a). All of this information needs to be brought forward into 360.

Comment 1 Addressed. An improved discussion of cleanup and remediation levels is now included in Section 350 (page 120) of the 1999 Proposed Amendments. Cleanup level and remediation levels are also defined in Section 200 (pages 106 and 111).

729

2) Page 29, 173-340-360 Selection of cleanup actions (5) Commercial gas stations

The formula here is inconsistent with POG decisions and the TPH tiered/fractionated approach. The equation is incorrect: Dermal is not incorporated and there is no one RfD for petroleum. It would be best to have this equation removed and reference the petroleum equations in sections 740, and 745. It might be best to leave the conditions/expectations here and also cite the exposure parameters that can be changed to calculate this cleanup level (ABW, FOC, DUR, SIR).

Comment 2 Addressed. Rule still needs to be clearer about exposure parameters that can/cannot be changed based on standard/modified approaches.

730

3) Page 34, 173-340-370 Cleanup alternatives

(1)(g) "The department expects that natural biodegradation of hazardous substances may be appropriate at sites where"...

Ecology uses the term "natural biodegradation" when the term "natural attenuation" would be more appropriate here. Natural biodegradation is one of many processes that occur under the whole process of natural attenuation. In the context of TPH, the POG has discussed this to include all types of attenuation, not limited to biodegradation.

Comment 3 Addressed (page 126).

731 4) Page 34, 173-340-370, (f) (left column):

"The department expects that, for facilities adjacent to a surface water body, active measures will be taken to prevent/minimize releases to surface water via surface runoff and ground water discharges in excess of cleanup levels."

Our understanding is that this provision is intended to avoid impacts to surface water bodies from groundwater discharges without distinguishing between methods. This language should therefore be broadened to state: "The department expects that, for facilities adjacent to a surface water body, the need to protect adjacent surface water quality will be evaluated and that natural degradation or active treatment processes will be identified, as appropriate, and maintained to help assure that water quality is not degraded."

Comment 4 not addressed. The recommended language should be incorporated as this provides for a broader range of options needed at many of these types of sites (page 126).

732 5) Page 41, 173-340-430 Interim Actions

"An interim action is distinguished from a cleanup action in that an interim action only partially addresses the cleanup of a site"

This definition is not accurate in that the interim actions do not necessarily "only partially address" site cleanup. A full RI/FS may show that the chosen interim actions result in addressing the total cleanup of the site. The provision should not give the impression that interim actions *always* necessitate further cleanup once further site evaluation is completed.

Comment 5 not fully addressed. 430(4)(b) states that "Interim actions shall be followed by additional remedial actions unless compliance with cleanup standards has been confirmed at the site." However, this should be moved to (3) (Relationship to the cleanup action) and more fully discussed to indicate that if administrative requirements are met and the interim action achieves the target cleanup or remediation level, then it may constitute the extent of the cleanup or remedial action.

733 6) Page 69, 173-340-700 (2) – What is a cleanup level?

Text should be added explaining how a "cleanup level" differs from a "remediation level".

Comment 6 Addressed. An improved discussion of cleanup and remediation levels is now included in Section 350 (page 120) of the 1999 Proposed Amendments. Cleanup level and remediation levels are also defined in Section 200 (pages 106 and 111).

734 7) Page 70, 173-340-700 Cleanup standard overview

(5)(b) discussion of standard B and modified B as tiers.

It would be very helpful if Ecology could provide a table in the rule that explains the differences between cleanup levels and remediation levels as well as standard and modified methods. A preliminary table is attached and is currently entitled

734 cont.

"Exposure and fate and transport parameters that can be changed in deriving cleanup levels and remediation levels". See Attachment A.

Comment 7 mostly addressed. Language describing exposure parameters and those that may be changed has been added to Section 708 (10) on page 160. However, the recommended table was not incorporated and the Port still believes that the use of a table to clarify allowed changes for the different standard and modified methods would help Ecology meet its obligation to make the rule understandable an more usable by the regulated community.

735

8) Page 70, 173-340-700 (5) – What methods can be used to set cleanup levels?
The user does not necessarily have to develop a CSM when using Method A. Method A only requires an identification of involved media. Other methods may require a full CSM development. This distinction should be made.
(b) – states that Method B is the standard method for determining cleanup levels. Method A could also be considered a "standard" method (or routine?). Method B should be described as a procedure for calculating a cleanup level (rather than looking up a cleanup level).

Comment 8 not addressed: The Port recognizes that a conceptual model may be needed for Method A to the extent that one must determine which media to evaluate (soil, ground water, etc.) However, it still needs to be made clear that a detailed CSM is not needed for Method A. Language should be added under (b) so the user understands that Method B (and C) cleanup levels must be calculated (i.e., they are not "look-up" values) in contract to Method A.

736

9) Page 71, 173-340-700 (c) (right column, top):
Language should indicate that the terrestrial ecological risk pertains to *soil* cleanup levels or selecting *soil* cleanup actions.

Comment 9 addressed.

737

10) Page 72, 173-340-700(8): TPH overview:
The POG is working on a revised TPH overview. This subsection should be replaced with the version to be proposed by POG.

Comment 10 partially addressed. The Port understands the POG has several additional comments on the TPH Overview as it appears on pages 151 and 152 of the November 1999 Proposed Amendments. Those recommended changes are supported by the Port.

738

11) Page 76, 173-340-704 – Beginning under WAC 704 –
States that Method A may be used to establish cleanup levels at sites undergoing routine cleanup actions as defined in WAC 173-340-200. It is unclear why the use of a particular Method for establishing a cleanup level should be limited to all the conditions set forth under the definition of "Routine Cleanup Action" on page 13 (Section 200). Recommendation: Improve the definition (mainly the 2nd bullet which relates the acceptability of Method A to the type of cleanup action!), and/or indicate

738 cont.

when Method A *should* be excluded: for exposure pathways or unique receptors not considered when setting the Method A CULs.

Comment 11 mostly addressed. An improved definition of "routine cleanup action" has been included in Section 200 (page 111). However, neither the definition nor the language in Section 704 list excluded exposure pathways or examples of unique receptors (other than terrestrial ecological)

739

12) Page 81, 173-340-708 Human Health Risk Assessment Procedures
HEAST is no longer an acceptable reference for toxicity values. We suggest that Ecology delete the references to HEAST from the rule. See also page 84 of the draft rule.

Comment not addressed. References to HEAST still appear on pages 158 and 159.

740

13) Page 81, 173-340-708 Human Health Risk Assessment Procedures
The bullet on BCF and the octanol water partitioning coefficient is not recommended by the POG as stated on this page.

Comment 13 addressed. Bullet is no longer present.

741

14) Page 82, 173-340-708 Human Health Risk Assessment Procedures
(3) RL's vs CULs: This section is confusing. Consider separating the two sections to explain what parameters can be used for CULs and what can be used for RLs. See Attachment A for this presented as a table. See comments on RLs above.

Comment 14 partially addressed. Additional language has been provided on page 160 (10)(b) explaining exposure parameters for (i) cleanup levels and (ii) remediation levels. However, the recommended table was not included and this would be extremely useful.

742

15) Page 84, 173-340-708 Human Health Risk Assessment Procedures
(7)(f) references EPA guidance documents for deriving toxicity values. This language should be broadened to allow use of TPH RfDs developed by the POG and Ecology.

Comment 15 not addressed. Ecology needs to advise the user as to the appropriate source or RfDs for TPH.

743

16) Page 85, 173-340-708 (9) Bioconcentration factor
The use of BCF and OW partitioning coefficient is not workable for all chemicals. This section needs to be broadened to have more flexibility to use additional literature information and/or empirical testing.

Comment 16 addressed (page 160).

744

17) Page 86, 173-340-708 Human Health Risk Assessment Procedures

744 cont.

(10)(c) This section assumes what exposure pathways are. It might be helpful to clarify this section by adding a conceptual site model discussion into this section. There is currently a definition on page 7 that could be brought back into this section.

Comment 17 addressed. The conceptual site model is discussed on page 157 and new language was included in the definition (page 107).

745

18) Page 91, 173-340-720

"The values for ethylbenzene, MTBE, naphthalene, toluene, TPH and xylene are based on Policy Oversight Group (POG) preliminary recommendations for petroleum cleanup levels" Xylene value is an issue. POG remains silent on Ecology's decision to change xylene number to 1,000 ug/L as opposed to the MCL. Ecology also needs to provide basis for carcinogenic PAHs cleanup level and provide a definition of carcinogenic PAHs in Section 200.

Comment 18 partially addressed. The reference to POG recommendations has been deleted. However, the POG continues to provide Ecology with several comments on the Content of Table 720-1 that are endorsed by the Port. These include the need to provide cleanup values for chemicals listed in Table 830-1.

746

19) Page 94, 173-340-720(3)(a)(ii) –

At some locations, extraction of groundwater for a potable supply could result in rapid intrusion of water containing high dissolved solids; even through this condition might not currently exist. Comment: Allow for a demonstration of likely rapid salt water intrusion as another means of evaluating the aquifer as a potential drinking water resource.

Comment 19 not addressed. The Port continues to maintain that Ecology should consider aquifers that would be readily degraded by salt water intrusion if tapped as a potable supply should be included in the evaluation [page 164, 720(2)(b)].

747

20) Pages 96 and 98, 173-340-720 Ground Water Cleanup Standards

Bottom of page - "it must be demonstrated that biological degradation of the calculated petroleum concentration would not result in exceedances of the maximum contaminant levels in Chapter 245-290 WAC, such as iron and manganese". While this is a worthy goal, it will end up being a procedural nightmare for site owners and Ecology. To place it into the rule will shut down petroleum cleanups. The reasons are:

1) Iron and manganese are naturally higher during natural attenuation processes during petroleum degradation.

2) Washington State has naturally high Mn and Fe concentrations in ground water above the MCL.

Comment 20 not addressed. Port continues to encourage Ecology to consider the implications of making these blanket requirements without considering site-specific conditions.

748

21) Page 97, 173-340-720 Ground Water Cleanup Standards (5)(b)(iii) "Nonaqueous phase liquid limitation."

For **organic hazardous substances** and petroleum products, the cleanup level shall not exceed a concentration that would result in nonaqueous phase liquid being present in or on the ground water."

The phrase "at the point of compliance" should be added to the above sentence.

Comment 21 not addressed (page 167). This is an extremely important issue to the Port and regulated community. There was never any intention to extend a comprehensive requirement to eliminate NAPL throughout the site. The NAPL limitation has always been considered "hand-in-hand" with the derivation of the cleanup level; and as such must only be met at the point of compliance. This distinction is extremely important and needs to be made clearly in the rule language.

749

22) Page 97, 173-340-720(5)(b)(iii) – upper left:

The POG agreed that prohibitions should be reworded such that "the cleanup level" must be sufficiently stringent so as not to allow NAPL. This has been done. However, the prohibition should be clarified by stating that "measurable or recoverable" NAPL should not be present in or on the ground water "at the point of compliance." This would clarify that trace amounts such as a sheen in a bailer are not intended to be addressed by this provision.

Comment 22 not addressed (page 167). The recent proposed language [page 167, (iii)] still refers to "a lack of a film, sheen, or discoloration of the groundwater... [as a means of determining] compliance with this requirement." The Port believes it is the absence of a measurable or recoverable NAPL layer that better indicates compliance, as the other listed characteristics can result from a variety of sources other than elevated petroleum groundwater concentrations in the saturated zone.

750

23) Page 99, 173-340-720 – right column, near bottom (8)(a)(ii):

The criteria in provisions **(6)** (b)(v), (vi) etc. The appropriate cross reference appears to be to **(7)**(b)(v), (vi) etc. Same reference occurs again on page 100, near bottom of left column.

Comment 23 addressed.

751

24) Page 99, 173-340-720 Ground Water Cleanup Standards (8) What are the cleanup levels for non-potable ground water? (b)(ii)

Cross reference to (6)(b)(v)-(viii) is to subsections that do not exist. Did Ecology intent it to be to (7)(b)(v)-(viii)?

Comment 24 addressed [page 169, (7)(b)(ii)]. Renumbering resulted in (6)(b) being the correct reference.

752

25) Page 103, 173-340-720(d)(iii)(A) (When it is appropriate to allow for dilution):

Site specific factors should not include dewatering during construction or maintenance activities if they are non-routine. Cleanup levels need to be based on

752 cont.

predictable site components. Special construction or maintenance-related issues can be addressed through other regulation and permitting processes.

Comment 25 addressed. Section no longer makes reference to special construction or maintenance-related elements.

753

26) Page 106, 173-340-730(1) – 3rd paragraph on page:
"Where no value is available from published standards, natural background or the practical quantitation limit is used for the cleanup level." This sentence is overly restrictive and represents an unwarranted change in Ecology practice with respect to Method A's applicability to surface water.

Comment 26 not addressed (page 174). Although the language has been changed somewhat [" for a hazardous substance deemed an indicator hazardous substance for surface water under WAC 173-340-708(2) and or which there is no value in applicable state and federal laws, a concentration that does not exceed the natural background concentration or the practical quantitation limit, subject to the limitations I this chapter."]; the language is still overly restrictive and represents a change in Ecology's practice. This requirement should be deleted.

754

27) Page 113, 173-340-740 Unrestricted land use soil cleanup standards
3rd full paragraph in first column - "For leaching or vapor exposure, the cleanup level applies throughout the site since leaching or vapor movement could occur at any depth."
The provision should apply only to vadose zone soils.

Comment 27 addressed for vapor, not for leaching. The relevant language still appears on page 183, (6)(b) and (c) under Modified Method B. According to (6)(b): "soil cleanup levels based on the protection of groundwater shall be established in the soils throughout the site." (6)(c) states: "..for soil cleanup levels based on protection from vapors, the point of compliance shall be established in the soils throughout the site from the ground surface to the upper-most ground water saturated zone..." The latter language should also apply to leaching, since this process also occurs within the vadose.

755

28) Page 116, 173-340-740 Unrestricted land use soil cleanup standards
Equation 740-2. This soil cleanup level uses exposure parameters that represent a child exposure scenario for carcinogenic effects. This error was made in the current MTCA and should be modified to reflect standard procedures.

Comment 28 not addressed. The same exposure parameters are included in the proposed language as they appear in earlier versions of the rule.

756

29) Page 116, 173-340-740 Unrestricted land use soil cleanup standards
Equation 740-3. The **Exposure** parameter, which actually comprises several parameters needs clarification.

Comment 29 addressed (page 181).

757 30) Page 117, 173-340-740: Unrestricted land use soil cleanup standards
Equation 740-4. GI absorption efficiency will need an explanation somewhere. See also Equation 745-4 on page 128.

Comment 30 not addressed. A brief paragraph describing the assumptions about GI absorption efficiency could be included in Section 708 under (10) Exposure Parameters.

758 31) Page 117, 173-340-740 Unrestricted land use soil cleanup standards
Equation 740-5. IFS and SFS will need explanation somewhere in the document.

Comment 31 addressed. IFS and SFS no longer appear in equation 740-5.

759 32) Page 117, 173-340-740 Unrestricted land use soil cleanup standards
(v) Soil vapors. The volatile definition here is inconsistent with Table 830-1. Which napthalenes should be sampled for?

Comment 32 addressed. Volatiles definition has been included in Section 200 and specifies the various naphthalenes.

760 33) Page 117, 173-340-740 Unrestricted land use soil cleanup standards, (C)(II) "Sites using Method A soil cleanup levels, but establishing higher soil remediation levels will need to protect....."
This sentence's meaning is unclear. Does it mean – "sites that establish soil remediation levels higher than Method A will need to protect . . . ."?

Comment 33 addressed. It appears this language has been removed from the description of Method A.

761 34) Page 118 173-340-740 – left column fourth bullet:
"Using an *active* vapor extraction system etc.." There are *passive* vapor control/barrier systems that are just as effective in controlling vapor intrusion into buildings. This appears to be a remedy selection issue rather than a factor in evaluating cleanup levels. This provision should more appropriately be put in remedy with a cross reference here.

Comment 34 addressed. This language has been deleted.

762 35) SECTION 173-340-745 –
Many of the same technical clarifications are needed for soil cleanup standards for industrial properties as for Section 740.

763 36) Page 128, 173-340-745 Soil Cleanup Standards for Industrial Properties
Equation 745-3. "*Exposure*" needs better definition.

Comment 36 addressed.

764 37) Page 129, 173-340-745 Soil Cleanup Standards for Industrial Properties(D), 2nd paragraph.

The paragraph references equation 745-6, but that equation does not exist.

Comment 37 addressed. No reference to equation 745-6 exists in the current draft.

765 38) Page 132,

Equation 747-2: note that the term foc has two means in MTCA. 1) fraction of organic carbon and 2) page 115 (Equation 740-1) frequency of contact. This inconsistency should be resolved.

Comment 38 addressed. FOC was changed to FOE (Frequency of Exposure) in equation 740-1 (page 179) and other equations in Sections 740 and 745.

766 39) Page 132 173-340-747. Equation 747-2: Definition of Koc:

Indicates that the Koc values listed in table 747-1 may be used to calculate default Kd values, but table 747-1 lists Kd values for metals only. Do they mean Table 747-4?

Comment 39 addressed.

767 40) Page 133, 173-340-747 Deriving soil concentrations for ground water protection.

We understanding that either a TCLP or a SPLP test can be used for TPH. This should be clarified in the rule.

Comment 40 addressed.

768 41) Page 133, 173-340-747 Deriving soil concentrations for ground water protection, (4) and (5) What is the non-aqueous phase liquid (NAPL) four-phase partitioning model?

This section provides too much detail in a manner that is too prescriptive. Four-phase model parameters may change, and new modeling methods may be developed. The rule should simply reference the four-phase model as an acceptable tool to be used for TPH (and other organics with Ecology approval). The model involves the use of a spreadsheet (vs calculator) so it makes no sense to place all the equations in the rule. In addition, the equations may change as the model continues to be improved. Finally, the model does not help one develop soil concentrations for ground water protection in the strictest sense. Instead, one inputs a TPH soil concentration (from one's site) and the output is a groundwater value. This value is then compared to an acceptable ground water number. It is an iterative process. One continues to use the spreadsheet until the user finds a TPH soil number that is protective of ground water.

This section should be reduced, with the bulk of the detail saved for guidance. This section should specify the necessary parameters, default values and set the rules for how default values can be modified.

Comment 41 partially addressed. The Port recognizes Ecology's need to provide details regarding the four-phase model. However, Section 747 as presented in the Proposed Amendments is still difficult to understand or apply. The Port endorses the POG's comments and proposed revisions to Section 747 which address a number of these concerns.

769 42) Page 137, 173-340-747 Deriving soil concentrations for ground water protection, (8) What is an empirical demonstration and how is it used to derive soil concentrations?, (c)(i) "the soil concentration is less than or equal to the soil value predicted by the empirical demonstration;"

This sentence should be clarified to more clearly state how Ecology expects empirical demonstrations to be performed.

Comment 42 not addressed. The idea contained in the sentence in (d)(iii)(A) [page 195] is implicit and should be deleted to avoid confusion. Also, under (d)(iii)(B), the words "or equal to" should be inserted after "Ground water concentrations must be less than.."

770 43) Page 137, 173-340-747 Deriving soil concentrations for ground water protection, (9) What is residual saturation?

This section still does not meet the POG's intent and can be misleading. The logical flow of this process needs to be re-arranged so that it reflects POG consensus. The section should start with introductory language that clearly states when this applies. If Method A CULs have been attained, for example, this should not be an issue. The rule says that if NAPL accumulates on ground water, it must be cleaned up to the extent practicable. The POG's concern was related to the fact that with the fractionated approach, TPH cleanup levels of 100,000 mg/kg can be calculated. It was the POG's intent to prevent that concentration if it resulted in the accumulation of free product on ground water. This section leads one to believe that in order to prove that NAPL will not form on ground water, one must pass either Table 747-2 or conduct a site-specific measurement or an empirical demonstration. This places a burden of testing on any TPH soil concentration greater than the screening levels in 747-2. This is not what the POG intended. Again, aside from the no NAPL in ground water provision, there is no provision in MTCA that disallows NAPL accumulation in soils. Thus, it is important to explain the intent of this section in (a). It may also be important to provide more clarity in (ii) that there are simple tools available to determine if NAPL is on ground water. For example, if there is a well, is there NAPL in the well? If there is no well, is there a buffer zone between saturated soil and ground water?

Comment 43 partially addressed. Section (5)(a) still needs to include language that 1) excludes Method A, and b) describes the intent reflected in the Port's original comment. The language also needs to emphasize that the Table 747-2 values are screening levels only and are based on "worst-case" coarse sand and gravelly soils and should not be viewed as mandatory cleanup levels.

771 44) Page 147, 173-340-750 Cleanup Standards to Protect Air Quality, (4) What are the Method A air cleanup levels?

(a) This section is confusing because MTCA does not publish Method A air cleanup levels like tables 720-1, 740-1, and 745-1.

Comment 44 addressed.

772 45) Page 147, 173-340-750 Cleanup Standards to Protect Air Quality
(b)(ii) "For sites with additional hazardous substances which are deemed indicator hazardous substances under WAC 173-340-708-2 for which there is no value available, cleanup levels for these additional hazardous substances shall be established at the PQL or natural background concentration, subject to the limitations in this chapter." Under the old MTCA, if a sample is detected but no cleanup value exists, the chemical is ignored. The new language implies that anything that is detected needs to be cleaned up to either the cleanup value or the PQL. This may pose a rather significant burden on site owners for air cleanup levels.

Comment 45 not addressed. The language in 750(2)(b)(ii) still refers to natural background and the PQL. This should be deleted.

773 46) Page 148, Page 147, 173-340-750 Cleanup Standards to Protect Air Quality
General Comment: The POG recommended to Ecology that vapor should be dealt with on a site specific basis because the science is currently inadequate to effectively handle this issue in a rule. Specific Comment regarding Equation 750-3: This equation to develop Method B air cleanup levels for petroleum should probably be deleted. At this time, no method exists to sample and analyze the carbon fractions.
Without a method, provision of an equation makes little sense. Ecology states that the development of a vapor method for the petroleum fractions will be simple. This might be true but the method would still need to be case tested just like the new VPH/EPH methods have been over the past two years. Deleting the equation does not prevent a user from calculating a petroleum air cleanup level if a vapor method is developed in the future.

Comment 46 addressed. Equation 750-3 was deleted.

774 47) Table 720-1, Method A cleanup levels - ground water
Reference TPH footnotes over to Table 830-1 for consistency.
The POG only addressed mineral oils that are not contaminated with PCBs. The ground water cleanup number which includes PCBs is not a POG issue.
Xylenes - It is Ecology's decision, not the POG's, to lower the xylene cleanup value below the MCL for aesthetic purposes.

Comment 47 addressed.

775 48) Table 740-1 Method A Soil Cleanup Levels for Unrestricted Land Uses
BTEX, and naphthalene compounds were derived using the 3 phase partitioning approach resulting in lower cleanup levels than the old MTCA Method A. Many people feel that these lowered cleanup concentrations may be impractical to achieve

775 cont.

and will cause undue hardship to site owners who use Method A exclusively. The whole purpose of developing the 3 phase partitioning approach was because the calculation of soil ingestion cleanup levels under Method B and C would result in soil concentrations that might contaminate ground water for soluble chemicals. However, there is no evidence that the existing Method A soil numbers are contaminating groundwater. Given this lack of field experience showing that Method A is not protective of ground water, it does not make sense to apply the 3 phase approach to Method A. The approach's default values are extremely conservative and make the Method A cleanup levels impracticably low. However, in Methods B and C, where one has the flexibility to use site specific parameters, the 3 phase partitioning approach is a more logical choice.

The POG had recommended that a survey be conducted to evaluate whether the existing soil concentrations in Method A were causing ground water cleanup level exceedances. The POG still believes it is appropriate to complete this survey before promulgating 3 phase partitioning cleanup values in Method A.

The POG had no input into the lowered PCB cleanup concentration. Footnote p - where is Equation 740-6?

Comment 48 partially addressed. The Port still has reservations regarding the need to significantly decrease the Method A cleanup levels for soil. The following are comments developed by the POG on Tables 740 and 745 and are endorsed by the Port:

1. Footnote c indicates that the cleanup level in the tables is appropriate only for benzene contained in weathered gasoline releases. A Method A soil cleanup number is needed for non-weathered gasoline spills as well as for weathered gasoline. The POG evaluated this matter and determined that the use of the same 3-phase model used by Ecology for determining the cleanup level for benzene in weathered gasoline would result in the same cleanup level for benzene in fresh gasoline. This is apparently because benzene is the risk driver in both cases. The POG recommends that Footnote c be amended to delete the word "weathered" prior to "gasoline" and to delete the second sentence stating that the value may not be protective of ground water for fresh gasoline. However, the POG recommends that there be an added statement directing owners of sites where there have been releases of benzene as a "pure" or commercial-grade product (i.e., not as part of a TPH mixture) to Section 747 for the determination of soil benzene cleanup levels protective of ground water.

2. The POG agrees that soil cleanup levels for ethylbenzene, toluene, and xylenes were calculated correctly for pure products (not mixtures). It is not clear whether the soil cleanup levels for xylenes are based on a risk-based number (or the MCL) in ground water, or on the ground water cleanup level for xylenes given in Table 720-1. Footnote t in Tables 740-1 and 745-1 states that they are "based on protection of ground water for drinking water use..." The POG recommends that Ecology indicate in footnote t precisely what ground water concentration the cleanup levels for xylenes in soil is based on.

3. The POG disagrees with item (3) in Footnote q for Total Petroleum Hydrocarbons, allowing for the assumption that PCBs which might be associated with mineral oil would

775 cont

not exceed PCB soil cleanup levels if "it can be documented that the oil released was recently tested and found to contain less than 50 ppm total PCBs."

4. The identification of footnotes associated with specific chemicals in Table 745-1 is in some cases inconsistent with the actual footnotes following the tables. For example, toluene is given footnote r in the table, but footnote r describes 1,1,1 trichloroethane. Toluene is described in footnote p. These inconsistencies should be corrected in the final rule amendments.

776

49) Table 745-1 Method A Soil Cleanup Levels - Industrial Soil
The same issues exist here as for Table 740-1

(See Comment 48, above)

777

50) Table 830-1: Required testing for Petroleum releases
This table could use some clarification. There are inconsistencies between what has been required in text vs in this table. PAH testing for DRO's should probably be required. The two row on required analytical testing for Method A are unclear. It is not obvious that one must also sample for BTEX compounds. Footnote (1) is not a POG decision.
Note: Teri Floyd is working on a similar table as she completes Task 1 of the Foster Wheeler POG scope of work. The two tables will probably be melded and inconsistencies and confusion will be fixed.

Comment 50 partially addressed. Ecology has provided certain improvements to Table 830-1 in the recent amendments. However, the comments developed by the POG are listed below and are endorsed by the Port:

1. The inclusion of PCBs with mineral oil is inappropriate.

2. Footnote (8) should be added to the cells for Naphthalenes/Gasoline Range Organics, Naphthalenes/Diesel Range Organics and Naphthalenes/Heavy Oils.

3. In footnote (12)(b), change "when the inhalation exposure pathway may be required" to "when the inhalation exposure pathway is evaluated" for clarification purposes.

4. In footnote (12)(c), delete the first sentence if footnote (8) is added to the Naphthalenes/Diesel Range Organics cell, as recommended in item 3), above.

5. Include naphthalenes with "Volatile Petroleum Components" instead of with "Semivolatile Petroleum Components," because they are defined as volatiles for the purposes of evaluating petroleum in MTCA sections 740, 745 and 750.

6. Footnote (8) should be deleted from the cell for PCBs/Heavy Oils and substituted with a new footnote which requires PCB testing only of heavy oils known to have been historically manufactured using PCBs or historically used in processes/activities known

777 cont.

to include PCBs. Examples include transformers, railroad transformers, mining motors, hydraulic systems, heat transfer systems, electromagnets, compressors, capacitors, switches, and miscellaneous electrical devices.

7. Change the title of the row that currently reads "TPH Analytical Methods for Use with Method A cleanup Levels" to "TPH Analytical Methods for Total TPH." Change the title of the row that currently reads "TPH Analytical Methods for Use with Methods B or C (TPH "fractions") to "TPH Analytical Methods for Use with TPH Fractions." These recommended changes are to increase the clarity of the analytical applicabilities.

8. Delete footnote (10) from the cell representing GRO and Volatile Fuel Additives and Blending Compounds, and add an "X" to the cell. Ecology's own research has demonstrated that these hazardous substances are found in this state, and geographic location of a release is not sufficient for prediction purposes. Therefore, these should be standard analytes when gasoline has been released. (If analyses over time show there is little or no reason for concern, this requirement could be amended/deleted.)

9. Amend footnote (10) language to make clear that it applies to DRO releases only.

10. Add the following language to the note "Use of Table 830-1" immediately under the table: "An 'X' signifies that the analytical requirement applies to both ground water and soil samples, when those are media of concern at a site."

778

51) Figure 720-2 Point of Compliance for groundwater.
This flow chart is confusing because it does not set up the conditional point of compliance situation for sites not abutting surface water. In practicality, ground water points of compliance are often switched to a conditional point not to exceed the property boundary. See page 101, 720(10)(c).

Comment 51 addressed. This comment is no longer pertinent as Ecology has elected to delete the use of flow charts in the rule. It is hoped that Ecology will be forthcoming with guidance and that such guidance will include much-needed flow charts to assist rule users in understanding and applying this and other complex approaches.

779

52) Figure 740-1 Soil Cleanup Standard - Unrestricted land use
This figure is confusing in that it leads one to believe that cleanup levels need to be calculated for the dermal and vapor pathways. The dermal and vapor pathways only have to be evaluated when anything beyond the default parameters are going to be used for the soil ingestion pathway. See page 86 (c). Note: for TPH, the soil ingestion and dermal pathways are combined. Also, any requirement for analysis of vapor and dermal pathways beyond TPH is not based on a POG or PAC recommendation.

Comment 52 addressed. This comment is no longer pertinent as Ecology has elected to delete the use of flow charts and figures in the rule.

780

53) Figure for 747(5), Four Phase Partitioning Model Flowchart:
Step 6 does not agree with the language in the rule as it appears in 173-340-747 (C)(vi) "Step 6: Compare the predicted ground water concentration to the ground water cleanup level..."

Comment 53 addressed. This comment is no longer pertinent as Ecology has elected to delete the use of flow charts in the rule.

ADDITIONAL PORT OF SEATTLE COMMENTS ON MTCA DRAFT RULE (April 2, 1999)

Issue: Pages 138-145, Section 7490-7494. Terrestrial ecological evaluation. Ease of understanding of the section.

The Port understands that Section 7490 is in pilot form and that final rulemaking for this section will not be included in the currently-proposed rule. We endorse a pilot process and find it important that the introduction to 7490 explain PAC intentions. The pilot rule will give Ecology and PLPs ample time to test the current structure of the rule on their sites and propose modifications and clarification as problems arise.

Paul Agid/POS, Doug Hotchkiss/POS and Linn Gould/Erda met with Nigel Blakley on February 11, 1999 to ask questions and discuss the applicability of Section 749 to some Port sites. The following comments are formulated based on that meeting.

781

Structure of the rule

In general, the Port endorses the concept of a tiered process for ecological evaluations. Ideally, we would like the terrestrial ecological tiered process to look more like the TPH tiered process, which moves from Tier 1 to 3 as a site becomes progressively more complex and site-specific (700(8)). It appears that the eco Tiers 1 and 2 do not increase in site specificity as the site conditions become more complex, which is where our confusion lies. In fact, it is difficult to discern the difference between the off ramps in Tier 1 and Tier 2 because the questions seem to be of equal ranking or priority. Eco Tiers 1 and 2 appear to mix contamination conditions, site setting and physical conditions. We believe it would make more sense if Table 7 were Tier 1 (like a Method A Table or CLARC). Using Table 7 as a Tier 1 off-ramp would remedy a significant current void in the proposed rule by defining the contaminants and concentration levels of significance. If Tier 1 fails, all of the questions asked in current Tiers 1 and 2 could be incorporated into a more comprehensive Tier 2.

Restoration habitats in the Duwamish Corridor

The Port would like to express its concern with the Table 7 value for TPH of 200 mg/kg. We understand that the POG agreed to this value as long as it is **only** applicable to sensitive habitat areas outside of industrially developed zones. We believe that there was no expectation on either the POG or Ecology's part that areas like the Duwamish industrial corridor would have to be concerned about remediating TPH to 200 mg/kg. The Port is currently restoring several habitats along the Duwamish River. Since TPH is ubiquitously above 200 mg/kg in Duwamish industrial corridor soils, the Port would have to conduct Tier 3, site-specific ecological terrestrial evaluations whenever they create an urban habitat mitigation site. Since restoring habitats along the Duwamish is viewed as a positive step in improving the health of the Duwamish and Elliott Bay, it would be detrimental to the environment to see this practice halted because of the need to conduct Tier 3 terrestrial evaluations. We would like to suggest that the currently proposed Method A TPH cleanup level tables (740-1, 745-1) will be protective of wildlife in the Duwamish.

781 cont.

Comment partially addressed. The Pilot Program was completed, and Ecology published a report on it dated November 1999. Therefore, it was not necessary to retain the "Note to Reviewers" in this section. The Port notes that no sites involved entered tier 3 of the terrestrial ecological evaluation and recommends that Ecology expand the pilot project to include at least one Tier 3 site. This would probably require that the site be specifically selected, rather than randomly selected, as was done with the sites included in the pilot project report. In addition, the report does not include a large, unpaved industrial site with more than four acres of TPH-contaminated soil. Such a site would be useful in demonstrating whether such sites, common in the Duwamish corridor, could be eligible for an exclusion from the terrestrial evaluation requirements.

The Port believes the new petroleum cleanup levels for commercial/industrial sites included in Tables 749-2 and 749-3 to be reasonable, although it also recognizes that they reflect values that are within ranges, as opposed to precise values, and that it may be able to refine the cleanup levels as additional scientific information becomes available.

Finally, the Port emphasizes the need to simplify and re-structure the sections of the rule regarding terrestrial-ecological evaluations so they 1) reflect a tiered approach such as that recommended by the POG, and 2) they are more understandable to a broader range of users.

782

Proposed exclusion for certain regulated facilities

The goal of the proposed rule as applied to industrial sites is protection of wildlife. For some industrial facilities, however, federal regulations require strict control of the presence of wildlife due to the extreme risk wildlife poses to human safety. (See, for example, FAR 139.337 which requires development and implementation of mandatory wildlife management planning for airports, and FAA Advisory Circular AC No. 150/5200-33 which establishes, among other things, a 10,000 foot wildlife attractant-free zone around aircraft movement areas.) Due to the significant safety hazards wildlife pose to aircraft operations, these rules require consideration of various wildlife control measures including expulsion, repelling, capture, and destruction. In addition, with respect to issues very similar to those that would arise for such facilities with the implementation of the proposed ecological standards rule, a draft memorandum of understanding between EPA and various federal agencies recognizes that "the creation, restoration, or enhancement of habitat that is designed to attract hazardous wildlife poses a substantial danger to aviation and wildlife and that such habitat is incompatible with safe airport operations..."

As the purpose of the proposed rule is to protect wildlife in and around such facilities, application of the proposal to these facilities would be in conflict with the dictates and intent of existing federal requirements. To resolve this conflict and the potential resulting increased threat to human safety, the Port proposes that a new subsection, "(e)", be added to the exclusions created in existing section 173-340-7491(1), as follows:

"(e) Sites are located within an operating facility subject to federal or state wildlife management and control requirements designed to eliminate the threat posed by the presence of wildlife to human safety."

Comment not addressed. The Port places special emphasis on this proposal, as it is particularly important and necessary, not only for Port of Seattle facilities, but for aviation facilities throughout the state. Please reconsider its inclusion in the final rule.

783

Definitions

There are several references to words or definitions in Section 749 which are confusing and the Port recommends clarification:

1. **"Contiguous"**. The term "Contiguous" is used in 749 without a definition provided. Lacking a MTCA definition, one Port site manager automatically referenced a RCRA (section 260.10) usage of contiguous and concluded that all of his property would be forced into Tier 3:

> On site means the same or geographically **contiguous** property which may be divided by public or private rights-of-way, provided the entrance and exit between the properties is at a cross-roads intersection, and access is by crossing as opposed to going along the right of way. Non-contiguous properties owned by the same person but connected by a right-of way which he controls and to which the public does not have access, is also considered on-site property.

When we discussed this concern with Nigel Blakley on February 11, he agreed that his concept of contiguous was different from the RCRA one above.

Comment addressed. A definition of "contiguous" is now provided on page 197 in section 7491(1)(c)(iii).

784

2. **"Native" and "semi-native" vegetation.** The Port is currently landscaping their sites using native and semi-native vegetation for either visual buffers or restoration of a specific type of habitat. The language needs to be clarified so that sites that are landscaped with native and semi-native vegetation for purposes of softening the "hard look" in industrial areas do not become applicable under 7490. In addition, definitions for "native" and "semi-native" are located in Section 200. We recommend that definitions used only in section 749, be moved from 200 to 749.

Comment addressed. Exclusions are now provided for areas planted with native or seminative species for ornamental or landscaping purposes on page 197 in section 7491(2)(c)(i) and (ii).

785

3. **"Site" and "facility"**. There seems to be some confusion between what is meant by these definitions in terms of where the contamination is located vs. the area of contaminated soil. The impact would be to switch the focus from a 200 acre property to a

10,000 square foot zone of contamination, not defined by property/ownership lines. We recommend that Ecology clarify its intent in Section 749 for these two definitions.

Comment addressed. Language now appears to use the term "site".

786

4. **"Physical barriers".** Section 749 describes what physical barriers are acceptable to prevent wildlife from using an area. We would like to suggest that a compacted gravel surface could also serve as a physical barrier for eco receptors, particularly at industrial sites.

Comment not addressed. Language in 7491(1)(b) still needs to include reference to a compacted gravel surface.

ADDITIONAL PORT COMMENTS ON DRAFT RULE: SECTION 720

787

Page 99, 173-340-720 Ground Water Cleanup Standards (8) What are the cleanup levels for non-potable ground water? (a)(ii) and (C)(ii)

The Port recommends adding "potable" to this sentence (a)(ii) so that it reads: "is not likely to flow into potable surface water.

The draft is currently written in a way that excludes shoreline properties and near shoreline properties from a "non-potable" definition. This is inappropriate for marine shoreline properties, since no one consumes marine waters. Non-potable ground water should be permitted to enter non-potable surface waters without first being cleaned up to potability standards as long as applicable non-potable surface water standards are met by the cleanup action.

Comment not addressed. The word potable still needs to be added to the text in Section (7)(a)(ii) (page 169).

788

Page 99, 173-340-720 (7)(b)(iv):

> Ground water flows into surface waters will not result in exceedances of surface water or **sediment cleanup levels** at the point(s) of entry or at any downstream location where hazardous substances may accumulate.

Although the Port agrees that sediments should not be impacted by contaminated ground water that enters surface waters, we are concerned that this new language will be interpreted to require that PLPs "prove the negative" in a context where absolute proof will require unnecessarily elaborate and expensive modeling and sediment sampling. In very many instances, ground water discharges occur through sediment that has been contaminated due to surface sources such as point source industrial discharges or CSOs. This type of contamination is especially common in urban waterways. This ubiquitous background contamination makes proof that ground water discharges will not cause an exceedance very difficult to obtain. We would also like to posit that it is unlikely that sediments are being contaminated if the ground water that flows into surface waters does

788 cont.

not exceed surface water cleanup levels. If Ecology has reason to believe that the surface water standards are not adequate to protect sediment quality, then perhaps the surface water standards should be more restrictive. For purposes of MTCA cleanup approvals, we recommend changing this provision to simply state that use of surface water standards is not permitted if the department determines that use of such standards will cause a violation of surface water or sediment cleanup level.

Comment not addressed. Section (9)(d)(i)(D) still mandates that ground water discharges from sites abutting surface water "not result in violations of sediment quality values..." (page 170). The Port continues to strongly recommend this requirement be deleted.

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Attachment II
New Comments

The following are Port comments to the language in the proposed amendments to MTCA, dated November 1999. These comments are in addition to those the Port submitted to Ecology based on the draft proposed MTCA amendments, which were published in December 1998. The Port's evaluation of the Department of Ecology's responses to the earlier comments is presented in Attachment I.

Page numbers refer to the Proposed Amendments as published in the November 1999 Publication ECY 99-606 (salmon-colored cover).

789

Comment 1
Requirement to use 730 equation for groundwater flowing into potable surface water [720(6)(a) – page 168]

The rule language states:

> "If the surface water *cleanup levels described in WAC 173-340-730 are more stringent* then they shall be used as the ground water cleanup level unless it can be demonstrated that the hazardous substances are not likely to reach the surface water".

This new sentence places a new burden on the PLP to use the 730 equation. However, as the equation currently exists, it is not applicable to TPH. This language needs to be reworded to allow the water quality guidelines to be an option for setting the cleanup levels, rather than requiring the derivation of a site-specific numeric standard at each site through use of the –730 equation. This additional requirement will be an impediment to moving forward with cleanups that would be sufficiently protective to the extent they meet ambient water quality criteria and other ARARs.

790

Comment 2
Requirement monitoring to assess bioaccumulation problems resulting from concentrations below method detection limits [720(9)(d)(i)(F) – Page 170]

The rule language states:

> "Ground water and surface water monitoring shall be conducted to assess the long term performance of the selected cleanup action including potential bioaccumulation problems resulting from surface water concentrations below method detection limits".

Why would anyone have to conduct any type of testing on a chemical below the MDL? This reference to bioaccumulation had been deleted (strike through) from the 12/14/98 draft of the rule and now it's back in this draft. The Port believes this requirement is so unusual and difficult to comply with that it should be deleted.

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WASHINGTON OIL MARKETERS ASSOCIATION
WOMA

RECEIVED
JAN 18 2000
ECOLOGY

January 15, 2000

Mr. Jim Pendowski
Toxics Cleanup Program
Dept. of Ecology
PO Box 47600
Olympia, WA 98504-7600

RE: Model Toxic Control Act Rule Amendments

Dear Mr. Pendowski:

I am writing on behalf of the Washington Oil Marketers Association (WOMA) to further supplement our comments regarding the proposed Model Toxic Control Act rule amendments.

Attached you will find our letter of October, 1999, which I would like to submit for the record as part of the public comment. I believe it important for you to note, and the record to reflect, that WOMA and its members have been concerned with several of the provisions of this rule since the first draft version was published in December of 1998. Moreover, the record should reflect that, on behalf of WOMA, both Bill Bellman and I have communicated with the Department of Ecology on a regular basis – by written correspondence, numerous meetings and by telephone – in an effort to find a resolution to the concerns of the members.

This letter (probably my final on this rule) attempts again to persuade you not to adopt the Method A soil cleanup levels for benzene and gasoline TPH as proposed in the rule.

791 On behalf of WOMA, I request that you make a policy decision to retain the current MTCA standards for a Method A soil cleanup action for gasoline TPH and other light petroleum constituents such as benzene. Your proposed new cleanup levels are far too stringent in terms of the actual ability for us to utilize cleanup methods other than a complete removal of all contaminated soil. While you cite the use of a model in the development of the new numbers, you have not demonstrated that the existing cleanup standards not protective of human health and the environment. Given the number of Method A petroleum cleanups conducted in the state of Washington, we request that you empirically demonstrate that the current standards are inadequate before adopting new standards based on the model outlined in the proposed rule.

792 Please note, however, that WOMA and its members are supportive of the proposed cleanup standards for diesel fuel under the soil cleanup table.

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reply page 27 of 76

793 The second reason we request that you maintain the current Method A soil cleanup standards for gasoline TPH and benzene is that the costs which you have outlined in your own small business economic impact statement show that it will have an adverse impact on gasoline station owners. We believe that this impact will also adversely affect petroleum jobbers given the exposure we may have with our many bulk plant facilities.

The Administrative Procedures Act requires that the Department of Ecology utilize heightened rule-making requirements when adopting significant legislative rules such as this one. One of those requirements directs the department to conduct a cost-benefit analysis of the rule demonstrating that the benefits of the rule outweigh the costs imposed by the regulated community affected by the rule. We do not believe that these new Method A soil cleanup standards meet the cost-benefit requirements when, as stated above, your own Small Business Economic Impact Statement points to substantial costs for gasoline station owners and your agency has failed to demonstrate that the current standards are not protective of human health and the environment.

Again, we ask that you rescind your proposed Method A soil cleanup standards for benzene and gasoline TPH based on the fact that they will have an adverse economic impact on gasoline station owners – the most affected class of business by this rule – and that there is no empirical data to substantiate any claim that he current standards are not adequate to protect human health and the environment.

There is one other issue I would like to address in this letter as part of the public comment. WOMA members have demonstrated an outstanding ability to work the Department of Ecology on many issues affecting their class of trade. No matter the outcome of this rule, WOMA members will still be conducting business in this state, and will be working with your agency to comply with the laws..

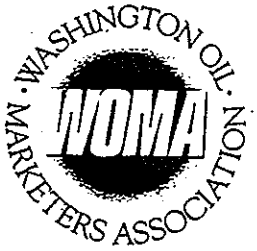
794 In order to help us comply with this new, technical, and possibly expense rule, WOMA formally requests the Department of Ecology to develop guidelines and model remedies for gasoline station and bulk plant facilities as soon as possible following adoption of the rule. As you know, these guidelines and model remedies were to be part of the original rule, but have not yet been issued.

WOMA's membership is made up mostly of small, family-run businesses. They do not have the resources to develop site-specific cleanup rules in every case, and your agency's development of a model gas station cleanup scenerio as well as guidelines for compliance with the petroleum cleanup standards will be very useful for all small businesses impacted by this rule.

We look forward to your response to our concerns.

Sincerely,

Charlie Brown



RECEIVED
JAN 18 2000
ECOLOGY

TEMPORARY PERMIT
VALID UNTIL
FEB 15 2000

October 21, 1999

Mr. Curtis Dahlgren
Toxics Cleanup Program
Dept. of Ecology
PO Box 47600
Olympia, WA 98504-7600

Dear Mr. Dahlgren:

I am writing as a follow-up to our recent conversations regarding the Model Toxics Control Act (MTCA) rule revisions due later this month. This letter is an effort to continue the dialogue on this issue and to clarify the position of the Washington Oil Marketers Association regarding the petroleum related cleanup standards.

I know that we have been over these issues in the past. However, I feel it is necessary to put our perspectives in writing so as to explain why the WOMA members so ardently oppose changes to the cleanup levels as proposed.

As you are aware, the Washington Oil Marketers Association represents over one hundred petroleum distributors and related industry interests throughout Washington state. The majority of our membership consists of small family-owned businesses that have been passed down from one generation to another. In total, our members provide thousands of family wage jobs to people across the state, and provide the petroleum products needed for independently owned, often minority-owned, gas stations and other businesses with petroleum product needs.

The majority of WOMA's membership has had experience in cleanup actions under MTCA due primarily to the upgrading and contamination testing requirements of the state and federal Underground Storage Tank laws. They know what it takes to comply with the existing MTCA rule in terms of achieving an acceptable cleanup. They also know that the proposed changes to the Method A petroleum cleanup levels will be much more difficult, if not impossible, to achieve at a reasonable cost.

There are several issues that WOMA members focus on in this discussion. First, the empirical data does not demonstrate a need for the change. Second, the costs of achieving the proposed level of cleanup will add up to 30% more to the costs of a cleanup. And, third, the newly revised cleanup levels will likely lead to difficulty in completing property transactions where the new cleanup levels have not been achieved.

795

Taking the above-mentioned issues in order, I will begin with the issue of empirical data. WOMA members still are not convinced that Ecology has cited credible empirical data to demonstrate a need for the cleanup level reductions. In fact, of the thousands of petroleum-related cleanup actions that have occurred in this state,

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795 cont. Ecology has not produced any documentation that demonstrates that the current cleanup levels are not protective of human health and the environment.

Over the past ten years, several thousand cleanups of petroleum spills and releases throughout the state have been completed, or are underway. There is no evidence, particularly on commercial gasoline station sites, that the results of the cleanups have not been protective of the human health and the environment. Moreover, there is no evidence that any cleanup of petroleum products has failed to protect ground or surface water. Without such evidence, it stands to reason that the current soil cleanup levels are adequate to protect human health and the environment.

796 I understand that your decision to increase the cleanup standard is based on a model. However, WOMA members feel that the model does not reflect the reality that the cleanups that have been done under today's standards are actually protective of human health and the environment. They feel that the model is overly conservative, over-simplified, and the outcomes are unrealistic in terms of attaining the levels of cleanup dictated by the model. Again, because they are the ones who have been conducting and paying for the cleanups, they demand to see an actual case history demonstrating that the current petroleum cleanup levels are not adequate.

797 Moreover, they do not believe that Ecology has sufficiently reviewed and documented its consideration of other credible scientific data which demonstrates that if anything, petroleum constituents should be less heavily regulated, not more heavily regulated, as proposed in the rule. As we pointed out back in January when first reacting to the proposed rule changes, the Lawrence Livermore National Laboratory found that "fuel hydrocarbons have limited impacts on human health, the environment, or California's groundwater resources." In addition, they found that, "the costs of cleaning up (fuel hydrocarbons under the state leaking underground fuel tank act) are often inappropriate when compared to the magnitude of the impact on groundwater resources."

Further, the Bureau of Economic Geology, at the University of Texas at Austin, similarly found that benzene plumes attenuate naturally and that active remediation might be required only in special cases to prevent a plume from impacting nearby receptors or reduce a plume that has already impacted a receptor.

We believe that the results of these studies have a direct relationship to regulation of fuel hydrocarbons here in Washington and that you should examine them and the methodology used to create them closely.

798 This is particularly true in light of the fact that in April of 1999, the Department of Ecology and the Department of Health provided an analysis of approximately 160 contaminated wells throughout Washington. Of those 160 wells, only five (5) were contaminated by gasoline. It is worthy of note that the cleanup levels for the hazardous substances (chlorinated solvents, nitrates, and others) causing contamination to the other 155 wells have not been changed in the proposed rule. The cleanup level for gasoline, which was found in only 3.2% of the wells, however, has been singled out for more stringent corrective action requirements. If there is no justification for changing the cleanup levels for the sources of 97% of the

contamination of wells, surely, there can be not justification for imposing a much more stringent cleanup level on the source of only 3.2% of the contamination -- especially in light of the Livermore and Texas Studies.

799 The second issue that WOMA members raise consistently is the added cost that the new cleanup level will impose on owners of contaminated sites. Based on information made available to us, we estimate that the average increased costs to achieve the new lower cleanup standard will run between $5,000.00 and $10,000.00. A more complicated cleanup could cost two to three times that amount. Given that an average cleanup cost is around $100,000.00 already, the additional costs to achieve this new cleanup level without some more substantive reasons for adopting a lower standard simply are not justifiable.

As you know, the Regulatory Reform Act of 1995 requires the Department of Ecology to adopt all new significant legislative rules according to the heightened rulemaking requirements of 34.05.380 RCW. Among the many considerations required to be given to a proposed rule is a weighing of the costs and benefits of the rule. On this issue alone, we do not believe that the Department has enunciated grounds sufficient to justify adoption of the rule. WOMA will likely demand a clear and concise response to this issue in the formal rulemaking phase, if a better explanation is not forthcoming beforehand.

800 Finally, the third issue of making property transactions more difficult is probably the most often cited concern of all the members. Because most of WOMA's membership consists of small business owners, they are always looking at how best to maximize their assets. They are also looking toward the date when they will give up the business. This generally means passing the business on to the next generation, or liquidating the assets.

The ability to sell their properties with the least amount of burden is a very high priority for all WOMA members. Each of them have done it several times, and are well versed in how a financial institution is going to view the property, and review measures taken to comply with environmental rules. It is in this arena that WOMA members are concerned.

801 If the MTCA cleanup standards for petroleum constituents change from the existing standards, transaction of properties cleaned up to the existing standards may be inhibited. That is, the financial institutions will be looking at the then current standards (e.g. .1 benzene for soil vs. the existing .5) and will demand that the property is cleaned up to the new standards rather than what had been acceptable in the past.

I understand that the grandfather clause is intended to address this issue, and agree that it is necessary and useful. However, I still would like to explore other options that will provide some written assurance that the cleanup action taken prior to the date of adoption of the new rule is sufficient. A sort of "transactional no further action" letter.

I am not set on any one solution on this issue. There are several ways we could address this problem. But, we need to do it now so it can be included in the final version of the rule.

In summary, the Washington Oil Marketers Association still adamantly opposes adoption of the MTCA rule with the proposed changes in the petroleum cleanup standards under method A because we feel there is no empirical evidence that the changes are needed, there are national studies that suggest that higher regulation of petroleum constituents is unnecessary, the costs of attaining the new cleanup standards exceed any benefits of the new standards, and the new standards will make property transactions more difficult. We formally request that you drop your proposal to change the petroleum constituent cleanup standards, and allow the existing standards to stay in place.

I look forward to your response and continued dialogue on this important issue.

Sincerely,

Charles R. Brown

cc: Mr. Jim Pendowski
Mr. Tom Hemingway, Pres., WOMA
Mr. Tim Adams, Vice Pres., WOMA
Mr. Bill Bellman, Exec. Dir., WOMA

THE
SOUTHLAND
CORPORATION

January 15, 2000

Mr. Jim Pendowski
Toxics Cleanup Program
Dept. of Ecology
PO Box 47600
Olympia, WA 98504-7600

RE: Model Toxic Control Act Rule Amendments

Dear Mr. Pendowski:

I am writing on behalf of 7-Eleven Corporation to express our opposition to the proposed Model Toxic Control Act rule amendments as they pertain to Method A petroleum cleanup actions for soil.

As you may be aware, 7-Eleven owns and operates a significant number of convenience stores and gasoline stations in the state of Washington. We employ hundreds of people providing family wage jobs and a significant tax revenue stream for the state.

Over the last several years, 7-Eleven has complied with Washington's Underground Storage Tank laws requiring the upgrade of all of our facilities. As part of our compliance, we also engaged in required cleanup actions under the current MTCA rule. We know what it takes to comply with the existing MTCA rule in terms of achieving an acceptable cleanup. We also know that the proposed changes to the Method A petroleum cleanup levels will be much more difficult, if not impossible, to achieve at a reasonable cost.

802

7-Eleven specifically requests that you retain the current MTCA standards for a Method A soil cleanup action for gasoline TPH and other light petroleum constituents such as benzene. Your proposed new cleanup levels are far too stringent in terms of the actual ability for us to utilize cleanup methods other than a complete removal of all contaminated soil. While you site the use of a model in the development of the new numbers, you have not demonstrated that the existing cleanup standards not protective of human health and the environment. Given the number of Method A petroleum cleanups conducted in the state of Washington, we request that you empirically demonstrate that the current standards are inadequate before adopting new standards based on the model outlined in the proposed rule.

Environmental Services Department 10220 S.W. Greenburg Road, Suite 470. Portland, Oregon 97223
Phone (503) 977-7713 Fax (503) 245-3438

Comments Submitted by Fax 1/17/00

Reply 28
Page 1 of 2

803 Please note, however, that 7-Eleven is supportive of the proposed cleanup standards for diesel fuel under the soil cleanup table.

804 The second reason we request that you maintain the current Method A soil cleanup standards for gasoline and TPH is that the costs which you have outlined in your own small business economic impact statement show that it will have an adverse impact on gasoline station owners. 7-Eleven has a long history of being a good corporate citizen in Washington. We have done what is necessary to comply with the rigorous environmental standards imposed by the law and by rule. However, we do not believe that these new Method A soil cleanup standards meet the cost-benefit requirements outlined in the administrative procedures act when, as stated above, your agency has failed to demonstrate that the current standards are not protective of human health and the environment. Given that an average cleanup cost is around $100,000.00 already, the additional costs to achieve this new cleanup level without some more substantive reasons for adopting a lower standard simply are not justifiable.

805 We recognize that you are basing your Method A soil cleanup standards on a model recently developed by your agency. However, we also know that scientific models are no substitute for actual empirical study results. The rule does not suggest that there is any available empirical data to support your proposed changes in the standards. Before you adopt such changes, we ask that you thoroughly examine the existing cleanups to see if there is truly any residual contamination affecting groundwater. Surely, with all the cleanups that have taken place in Washington as a result of the Underground Storage Tank Law, you have some idea of where to find such hard evidence.

In sum, we ask that you rescind your proposed Method A soil cleanup standards for benzene and gasoline TPH based on the fact that they will have an adverse economic impact on gasoline station owners – the most affected class of business by this rule – and that there is no empirical data to substantiate any claim that he current standards are not adequate to protect human health and the environment.

We look forward to your response to our concerns.

Sincerely,

Bob DeNinno

7-Eleven, Inc.

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JAN 19 2000

MTCA SCIENCE ADVISORY BOARD

January 17, 1999

Mr. Jim Pendowski, Program Manager
Toxics Cleanup Program
Department of Ecology
P.O. Box 47600
Olympia, WA 98504

Dear Mr. Pendowski:

The MTCA Science Advisory Board has completed our review of the November 13, 1999 proposed MTCA rule revisions. Attached are our specific comments and recommendations on those revisions.

To keep this letter to the point, we have focused our specific comments primarily on areas we feel need additional work. This is not intended to diminish the work Ecology has done in addressing numerous issues discussed at previous Board meetings and by others and, in fact, we commend Ecology for the many improvements they have incorporated in these new rule revisions. To insure there is a clear record of the Board's recommendations, also attached for your records is the latest version of the "SAB Issues Status Report".

Recognizing that Ecology may make changes based on public comments, we look forward to working with Ecology in addressing the items raised in the attached comments and in comments on scientific issues received from others.

As a final note, we appreciate the support provided by Ecology staff during this rule-making marathon. We hope your staff will find these comments constructive and useful as they finalize the rule.

If your have any questions regarding these comments, please contact me at (206) 546-7939.

Sincerely,

Henry M Landau

Dr. Henry G. Landau, Ph.D.,
Chairperson, MTCA Science Advisory Board

cc: Dawn Hooper
SAB1399a.doc

letter Received by e-mail 1/18/00

806 **Section 706: Method C Cleanup Levels and Complexity of the Rule**

The proposed rule is unnecessarily complex in its inclusion of five methods (Method A, Standard Method B, Modified Method B, Standard Method C and Modified Method C), three tiers (for petroleum sites), two land use categories for soil cleanup levels (unrestricted and industrial), three procedures for ecological assessments (including the "off ramps"), and both cleanup levels and remediation levels. The "tiers" and "procedures" each connote a level of site specificity and commensurate level of effort. Method A, Standard Method B, and Modified Method B similarly connote degrees of site specificity. Method C, however, includes factors primarily related to land use and remedy selection.

While this is a policy issue and not a scientific one, the board is concerned with this complexity as this may impede effective cleanup and clouds the scientific basis of the cleanup actions taken under MTCA. Using the term "methods" to connote the degree of site specificity while maintaining the existing land uses and both cleanup levels and remediation levels could simplify the rule. The use of the terms "tiers" and "procedures" could be eliminated. Similarly, Method C as a separate method could be eliminated.

807 We agree that it makes sense to retain the risk range and risk equations now in Method C for industrial land uses for setting soil cleanup levels and for worker exposure to air contaminants in manholes and utility vaults. However, we do not see sufficient reason for retaining Method C for ground water, surface water and generic Method C air cleanup levels. The general conditions that trigger the ability to use Method C in these other media--high area background concentrations, the overall risk of cleanup, and technical constraints--can all be considered during the remedy selection process. Including these criteria as part of the cleanup level decision process and the remedy selection process is confusing.

We appreciate the difficulty in addressing this subject at this late stage. If modification to the rule is not now feasible, we recommend that rule simplification be addressed in the near term in a future rulemaking.

808 **Section 706: Use of TEFs for PCBs**

The Board would like to allocate some time at a future meeting late this summer or fall to discuss the use of Toxicity Equivalency Factors for PCB mixtures. Within the last year there has been new guidance prepared by the World Health Organization that may have merit for use under MTCA. While it may be infeasible to include provisions for this in the current draft rule, this is an issue that should be addressed in the near term in a future rule making.

809 **Section 720: Ground Water Cleanup Levels**

Based on the briefings provided over the last several Board meetings, we concur with all but one proposed change to the Method A ground water cleanup levels.

We remained concerned about the basis for the Method A ground water cleanup level for mineral oil TPH. There is a significant difference between the 4-phase modeling results and the laboratory experiments the proposed value of 1000 ug/l is based on. No scientific basis has been provided for this deviation. This difference may be due to the different product composition and incomplete oil/water separation in the experiments conducted on behalf of Puget Sound Energy or other factors.

The Board requests additional information on mineral oil product composition to determine how representative the mineral oil sample that was tested is of mineral oils in use. We also recommend Ecology contact Puget Sound Energy or other utilities and request that the experiment be replicated with other mineral oil samples with careful attention to the procedures for oil/water separation. We recommend that Ecology collect peer-reviewed study information on the oil-water partitioning of heavier petroleum hydrocarbons, typical of those found in mineral oil. The ability of the 4-phase model to predict dissolved concentrations has been well documented in the literature. Unless we receive convincing information supporting why there should be a deviation from the model, our inclination would be to recommend that Ecology base the Method A cleanup level on the modeling results.

810 We also continue to remain concerned about the inconsistent levels of risk represented by the cleanup levels in table 720-1. While it may be infeasible to address this subject in this rule making, we would like to have more discussion about this issue at a future Board meeting.

811 **Section 730: Surface Water Cleanup Levels**

While we support Ecology moving ahead with the proposed revisions, we have reservations about the assumed amount of fish consumption used in the calculation of surface water cleanup levels. Several studies over the past few years have shown that certain individuals in Washington State, such as Native Americans and people of Southeast Asian origin, typically consume considerably more fish than is assumed under MTCA and other regulations. We urge Ecology to move ahead with using this information to update the assumptions used in MTCA (as well as in other agency rules) in a future rule-making.

812 **Sections 740 & 745: Soil Cleanup Levels**

We are pleased that Ecology has responded to Board advice to no longer use the 100 X ground water cleanup level as the default method for deriving soil

812 cont. cleanup levels protective of ground water. Given the information on contaminant partitioning and movement that has been developed over the years since the rule was originally adopted, it makes sense to update the rule now to reflect this new scientific information.

813 We do have one comment on tables 740-1 and 745-1. The footnote pertaining to benzene is confusing. We recommend the footnote address the fact that the benzene value is based on a gasoline mixture and that it may not be protective for a pure benzene spill.

We recognize that some business groups are concerned with the resultant more stringent Method A soil cleanup levels for certain contaminants. We look forward to reviewing any additional scientific information that the public may submit with their comments on the rule to evaluate if it is appropriate to make any final adjustments to these values. To the extent such information is not available prior to finalization of the rule, we recommend that this issue be addressed in the near term through guidance or a subsequent rule revision.

814 This version of the rule is much improved in its discussion of assessment of risk due to dermal exposure. However, we remain concerned about the undefined circumstances that trigger evaluation of this exposure pathway. The USEPA is currently drafting a policy that would require the evaluation of the dermal exposure pathway at all sites. We recommend that the dermal exposure pathway be evaluated at all MTCA sites.

815 **Section 747: Fate & Transport**

As noted above, the Board is pleased to see that Ecology has included this Section providing more scientifically up-to-date methods for determining site-specific soil cleanup levels that are protective of ground water. We encourage Ecology to carefully edit this Section, as there appear to be several inconsistencies and confusing language. Dr. Allen-King is available to represent the Board in providing specific comments.

816 We recommend that Equation 747-6 be modified to adjust for the concentration of contaminants in the ground water upgradient of the site. [The equation currently assumes background concentrations are zero]. If this is not feasible, then there should at least be a footnote added explaining the need to consider background levels when using this equation.

817 We recommend Ecology carefully review the provisions pertaining to the use of fate and transport models other than those specified in the rule (page 194 of the draft provided the SAB). We believe what Ecology intends to say is that if someone chooses to propose an alternative model, no specific numeric or analytic model code is required. Ecology should consider explicitly stating that, what ever model is used, transport processes will be modeled using advection-

dispersion as the underlying contaminant transport equation. Also, it should be made clear that the use of site-specific measurements is preferred over literature information. It should also be noted that if literature information is relied on for model parameters such as dispersion, the information used should be appropriate for the conditions at the site and that Ecology may require verification with site-specific measurements.

818 Given the lack of standardized procedures for the measurement and interpretation of residual saturation from field and laboratory measurements, there should be a substantial burden of proof to override the screening level values. This does not appear to be currently the case and the rule should be strengthened in this regard. In addition, the provision discussing the use of site-specific measurements of residual saturation should discuss the limits of laboratory measurements, since they appear to underestimate field measurements.

819 Regarding leaching tests, we are concerned about the limited data used as the basis for predicting metals impacts on ground water (especially the 10 X comparison for cadmium, lead and zinc). At a minimum, the rule should note that these comparisons are based on limited empirical data.

820 **Section 749: Terrestrial Ecological Risk**

For the record, we would like to note that the SAB's Eco Risk Subcommittee reviewed the TPH concentrations in Tables 749-2 and 749-3 and that committee concurred with those values.

821 **Section 750: Air Cleanup Levels**

We are pleased to see that Ecology followed the Board's advice to exclude the use of OSHA and WSHA standards to set cleanup levels. As noted in our earlier comments, these standards are not appropriate for setting air cleanup levels for residential settings.

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January 7, 2000 MTCA SAB Comments on November 17, 1999 Draft Rule

We concur with the above comments:

Richelle Allen-King, Ph.D.

Bruce Duncan, Ph.D.

Elaine M. Faustman, Ph.D.

Henry G. Landau, Ph.D., Chairperson
MTCA Science Advisory Board

Marjorie Norman, Ph.D.

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Marjorie Norman, Ph.D.

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reply 29
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STATE OF WASHINGTON
POLLUTION LIABILITY INSURANCE AGENCY
1015 10th Ave SE • PO Box 40930 • Olympia, Washington 98504-0930
(360) 586-5997 • FAX (360) 586-7187 • (800) 822-3905

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JAN 18 2000
ECOLOGY

January 18, 2000

Department of Ecology
Attn: Trish Akana
MTCA Rule Revision
P.O. Box 47600
Olympia, Wa. 98504-7600

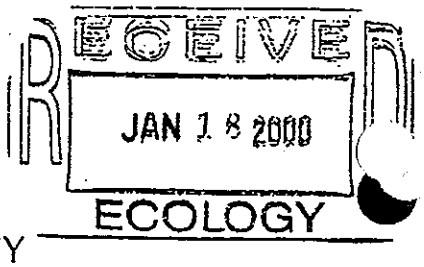
Dear Ms. Akana;

Attached are comments by the Pollution Liability Insurance Agency regarding the Proposed Amendments to the Model Toxics Control Act Cleanup Regulation, as well as comments regarding the Small Business Economic Impact Statement to accompany the Proposed Amendments.

James M. Sims
Director

Attachments

364



STATE OF WASHINGTON
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POLLUTION LIABILITY INSURANCE AGENCY COMMENTS ON

PROPOSED AMENDMENTS MODEL TOXICS CONTROL ACT CLEANUP REGULATION (Chapter 173-340 WAC)

and

SMALL BUSINESS ECONOMIC IMPACT STATEMENT FOR REVISION TO Chapter 173-340 WAC AMENDMENTS TO THE MODEL TOXICS CONTROL ACT

James M. Sims
Director, Pollution Liability Insurance Agency (PLIA)

822

1. General Comments

The formal response process for the proposed amendments to the MTCA cleanup rule has been extremely unfair to interested parties. At a public meeting in Tacoma in May, it was announced that the proposed amendments were scheduled to be published in July 1999. Subsequently, an E-Mail announced that publication would be delayed until mid-October. Finally, because of repeated administrative delays by Ecology the amendments were not published in the State Register until November 17th. For Ecology to have been working on these proposed amendments for over four years, to have announced publication deadlines six months ago, and to then have been unable to meet those deadlines is unprofessional and unfair to affected parties.

823

The delays are unfair because those unexplained administrative delays have resulted in a period of response by affected parties that includes the two most important family holidays of the year; if not the most important, certainly the most time-consuming. Further, the unexplained delays have resulted in comments due to Ecology after the 2000 legislative session commenced. That is particularly unfair to trade associations and consumer groups whose focus each year must be on the legislative process, budget implications, proposed bills with potential impact. Few trade associations representing parties affected by the proposed amendments have the luxury of a staff that is able to, in just 60 days interrupted by holidays, conduct research into the impact of the proposed amendments, confer with members regarding impact and prepare a response

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.....at the same time the trade association is attempting to prepare for the legislative process, meet with members and staff regarding bills effecting the industry or association, etc.

824

On March 13, 1997, the formal Rule-Making process for Amendments to the Model Toxics Control Act Cleanup Regulation commenced with a statement of objective: "All of the Policy Advisory Committee's recommendations to the Legislature and Ecology focus on making the business of cleanups fairer, easier to understand, more flexible with less ambiguity, and less expensive."

Those objectives have not been accomplished. The proposed amendments result in a cleanup regulation that is longer in text and much more complicated and difficult to understand. That is particularly true for the average citizen or small business operator. Every experienced environmental attorney, consultant or service provider with whom I have spoken has stated the opinion that the proposed amendments result in a rule far more difficult to comprehend than the existing rule. For a small business operator for whom English is a second language, the proposed cleanup regulation is all but impossible to comprehend .

The proposed amendments are not less ambiguous. Further, the proposed amendments will result in a dramatic increase in the cost of cleanup of soil contaminated with petroleum products, and an even more dramatic cost increase for the cleanup of soil and groundwater.

825

2. Empirical Data as compared with Model Results

Ecology has proposed Method A soil cleanup standards for benzene and gasoline that are far more conservative and stringent than standards currently in place. Ecology has based the proposed cleanup levels on the narrow scientific results of a model that depends on extremely conservative, over-simplified and unrealistic assumptions.

Ecology has failed to consider and evaluate an overwhelming body of empirical and anecdotal data that demonstrates that more stringent soil cleanup levels for benzene and gasoline are not required and not justified.

Model-derived Method A cleanup levels should not be more stringent or conservative than existing levels unless Ecology is able to demonstrate that:

(a) existing cleanup levels are not protective of human health and the environment, and

(b) that cleanups conducted over the past ten years under existing cleanup levels are inadequate or continue to pose a threat to human health and the environment.

Ecology has not accomplished such a demonstration to justify the adoption of more stringent costly cleanup levels! Therefore, the proposed Method A soil cleanup levels for benzene and gasoline must be withdrawn. PLIA recommends returning to the current Method A soil cleanup levels for benzene and gasoline.

Attachment A provides a detailed analysis of the issue of empirical data vis-a-vis the results of a model.

826

3. Small Business Economic Impact Statement

The Small Business Economic Impact Statement (SBEIS) prepared to accompany the proposed amendments is unsatisfactory from a procedural perspective, as well as unsatisfactory in its content. The SBEIS was not prepared until after the proposed amendments had been completed and were being prepared for printing.....a violation of the terms of the Regulatory Fairness Act.

The proposed amendments must be changed to mitigate the increased cleanup costs and negative economic impact on small business owners and operators.

Attachment B provides a detailed analysis of the SBEIS.

827

4. Cleanup Cost Increase

The proposed amendments establish Method A cleanup levels that are far more stringent and conservative that those cleanup levels currently in place. The result is a significant increase in the cost of cleanup of soil contaminated with petroleum products, and an even more dramatic cost increase for the cleanup of groundwater and soil.

Attachment B includes a detailed analysis of PLIA's estimate of increased costs; 32% cost increase for soil cleanup, 31% cost increase for cleanup of soil and groundwater.

The PLIA cost increase estimates are very conservative. It is quite probable that if the proposed Method A cleanup levels are adopted, actual increased costs will exceed 38 or 40% for soil cleanup, and could easily exceed 50% for groundwater and soil.

It should be readily apparent that such a dramatic increase in the cost of cleanup will result in fewer cleanups being accomplished. It is a fundamental reality that there is only a finite amount of money available, particularly to a small business owner or operator. If the cost of cleanup of contamination increases

32%, or 40%, or even 20% (Ecology's cost increase estimate included in the SBEIS), that increased cost will lead business owners to delay as long as possible accomplishing cleanups.

The stated objective of the proposed amendments was "making the business of cleanups fairer, easier to understand, more flexible with less ambiguity, and less expensive.". The objective was certainly not to make the cost of cleanup of contamination so high that fewer cleanups will be accomplished.

828

5. Institutional Controls

Institutional Controls are defined and detailed in WAC 173-340-440, and are also outlined in an information bulletin published with the proposed amendments. Institutional controls are defined as "measures used at contaminated sites to ensure that the actual use to which a site is put after cleanup is compatible with the level of cleanup completed." The bulletin goes on to explain, "Where cleanup standards cannot be met and, therefore, a permanent cleanup is not possible, the department may approve the use of institutional controls as a remedy or cleanup action for all or a portion of the site." Institutional controls can include physical measures such as fences, or use restrictions on the property. Unfortunately, institutional controls result in a *deed restriction* that will make the transfer of the property, whether a residence, small business or a church, all but impossible.

An institutional control results in a *deed restriction*, because the institutional control will limit the use of the property. A property with a deed restriction cannot be sold in the future, nor is it likely that a lender would make a loan if the property was the collateral.

Institutional controls may be of benefit in some limited circumstances, particularly for large businesses that seldom have turnovers of properties. However, when institutional controls are applied to a small business property, there is no benefit, only restriction....not just of use, but also restriction as to the possibility of transferring the property in the future.

PLIA recommends no change to WAC 173-340-440, but urges understanding of the consequences of imposition of institutional controls. Useful in limited circumstances, institutional controls do not provide regulatory relief to small business owners or operators.

829

6. Terrestrial Ecological Evaluations

The issue of Terrestrial Ecological Evaluations is a prime example of the ambiguity of the proposed amendments; ambiguity that was supposed to have been reduced by the proposed amendments.

829 cont. "Terrestrial Ecological Evaluation" is not defined in the proposed amendments. "Terrestrial ecological receptors" is defined as "means plants and animals that live primarily or entirely on land." One is lead to conclude (perhaps or perhaps not) that a Terrestrial Ecological Evaluation is the evaluation of impact on terrestrial ecological receptors. This is a new additional MTCA analysis requirement; just what is or is not the requirements must be stated.

830 Terrestrial Ecological Evaluations are of particular concern regarding potential impact on homeowner and small business sites that have experienced contamination from heating oil tanks. The impact on heating oil contamination sites is potentially very serious, and extremely costly. While the proposed Method A includes a soil cleanup level for diesel and heating oil of TPH 2000 mg/kg, for all intensive purposes the Terrestrial Ecological Evaluation Procedure imposes a cleanup level of 200 mg/kg.

831 Considering terrestrial ecological evaluation procedures, without being trapped by *Institutional Controls*, the only way to obtain a more favorable cleanup level than TPH 200 mg/kg for a site contaminated by heating oil is to conduct a site-specific terrestrial evaluation (WAC 173-340-7493).

Site-specific assessment tools are not currently available to readily measure the impact of chemical constituents on terrestrial ecological receptors. Because of the overall qualitative nature of eco-science, results would be uncertain and ambiguous. Further, the process would be extremely time-consuming and expensive.

WACs 173-340-7491 and 7492 provide exclusions from the requirement to conduct the evaluation, and many heating oil contamination sites should be able to qualify for an exclusion. However, WAC 173-340-7492 (c) (3) includes the statement:

> "Institutional controls. If any of the conditions listed above in subsection (2) (a) through (c) of this section are used to end the simplified evaluation, ***institutional controls may be needed*** to ensure that the condition will continue to be met in the future." (emphasis added)

The problems resulting from this statement are twofold:

(1) Institutional controls result in a deed restriction that will make the transfer of the property, whether a residence, small business or a church, all but impossible.

(2) Many Ecology field inspectors might well err on the side of being conservative and, particularly when in doubt or if inexperienced, would impose institutional controls on a site without truly understanding the implications on the homeowner or small business operator. The term ***institutional controls may be needed*** must be changed.

831 cont.

PLIA recommends the statement be changed to read; "...are used to end the simplified evaluation, and if the department can demonstrate that the condition is a potential threat to human health and the environment, institutional controls may be required."

832

7. "Grandfathering"

WAC 173-340-702 (12) discusses what is commonly referred to as *Grandfathering* of cleanups completed prior to adoption of the proposed cleanup levels included in the amendments. WAC 173-340-702 (12) provides that:

(a) For cleanup actions conducted by Ecology, or under an order, the cleanup level is to be that level in effect when Ecology issued the final cleanup action plan.

(b) For cleanup actions conducted as independent remedial actions, the cleanup level is to be that (1) in effect when final cleanup action began, or (2) in effect when Ecology reviews the action ... whichever is less stringent.

(c) Cleanup actions completed under either of these options are not to be subject to further review action unless Ecology considers the cleanup level no longer sufficient to be protective of human health and the environment.

The concept of *grandfathering* cleanups completed under previous cleanup levels is a fine concept, but it is a concept, not reality. The concept fails to take into account fundamental business practices and the lending philosophy of most lending institutions.

A lending institution dealing with a property with a history of contamination that was cleaned up to a previous cleanup standard will demand a clear title to a property before its sale will be financed, or before the lender will consider the property as collateral for a loan. The lender will not be satisfied with a deed which reflects a cleanup conducted years or months prior under previous cleanup levels, as opposed to cleanup levels to be in effect in the future. Few lenders will be comfortable granting a mortgage or making a loan (with the property as collateral) on property that has not been cleaned up to the proposed cleanup levels.

It will matter little whether Ecology does or does not conduct a review of each cleanup completed ....lenders will probably demand such reviews. It is highly questionable if Ecology will be able to assemble the resources necessary to conduct reviews of thousands of previous cleanups in a timely manner so as not to disrupt property transfers or loans..

833

The WAC calls for reviews by Ecology on a case-by-case basis. Without reviewing each previous cleanup action and considering a risk assessment of each, how could Ecology possibly determine whether any or all of the previous cleanups are protective of human health and the environment? Ecology simply

does not have the resources to complete the review and risk assessment of several thousand cleanups completed under existing cleanup levels and procedures.

834

This particular issue demonstrates a fundamental contradiction in Ecology's proposed amendments to the cleanup rule. The proposed amendments include cleanup levels for many substances (particularly petroleum) that are much more stringent or conservative than those currently in effect. In order to justify adoption of more stringent cleanup levels, Ecology should have determined that existing cleanup levels are not protective of human health and the environment. That being the case, cleanup actions completed under the existing cleanup levels are all likely to be subject to review action by the department.

The contradiction is elementary:

- Either all cleanups completed under the existing levels are not sufficient to protect human health and the environment and therefore must be subject to review by Ecology, or

- Cleanups are protective and need not be reviewed.

If the latter is true, that all cleanups completed under previous cleanup levels are indeed protective, Ecology cannot justify new, more stringent and conservative cleanup levels.

PLIA recommends deletion of WAC 173-340-702 (12).

835 **Attachment A**

EMPIRICAL DATA as compared with MODEL RESULTS

1. Ecology has proposed Method A soil cleanup standards for benzene and gasoline that are far more conservative and stringent than standards currently in place. Ecology has based its decision on the narrow scientific results of a model that depends on extremely conservative, over-simplified and unrealistic assumptions. The model was developed for a different purpose and has been only partially validated.

836 2. Ecology has failed to consider and evaluate an overwhelming body of empirical and anecdotal data that demonstrates that more stringent soil cleanup levels for benzene and gasoline are not required and not justified.

837 3. Model-derived Method A cleanup levels should not be more stringent or conservative than existing levels unless Ecology is able to demonstrate that:

(a) existing cleanup levels are not protective of human health and the environment, and

(b) that cleanups conducted over the past ten years under existing cleanup levels are inadequate or continue to pose a threat to human health and the environment.

Ecology has not made such a demonstration to justify the adoption of more stringent cleanup levels!

838 ## EMPIRICAL DATA

1. The empirical data ignored by Ecology includes: a 1995 study by the Lawrence Livermore National Laboratory; a 1997 study by the Bureau of Economic Geology of the University of Texas; a 1999 study completed by the Washington Departments of Ecology and Health; and, the results of several thousand cleanups of petroleum products in Washington over the past ten years under existing cleanup standards.

839 2. Over the past ten years, several thousand cleanups of petroleum spills and releases throughout the state have been completed, or are underway. There is no evidence that the results of existing cleanups has not been protective of human health and the environment! There is no evidence that any cleanup of petroleum products has failed to protect ground or surface water! There is no evidence that current soil cleanup levels are not adequate to protect human health and the environment!

840 3. The Pollution Liability Insurance Agency (PLIA) has, under various programs, completed cleanups of 215 UST sites and over 350 heating oil sites. There is no

evidence whatsoever that the cleanup of any of those 565 contaminated sites was not sufficient or adequate to protect human health and the environment. PLIA is currently working on the cleanup of another 93 UST sites and 90 heating oil sites throughout the state. As with closed claims and completed cleanups, there is no evidence that existing cleanup levels are not sufficient to be protective of human health and the environment.

841 4. The Lawrence Livermore study was the result of an 18-month review of the regulatory framework and cleanup processes of California's leaking underground fuel tanks (LUFT).

- The study found that out of 12,151 California public water-supply wells tested statewide, only 0.4% (48 wells) were reported to have measurable benzene concentrations. Of the 28,051 California LUFT sites, only 0.5% had effected drinking water wells. The total potential volume of groundwater impacted by LUFT plumes greater than 1 ppb benzene was estimated to be only 0.0005% of California's total groundwater basin storage capacity. Most of the affected wells were shallow, private domestic wells in close proximity to LUFT release sites.

- 70% of LUFT site closures resulted in no impact on groundwater. The study concluded that the risk to groundwater had been over-estimated by 70%.

- The study concluded that fuel hydrocarbons (FHCs) have limited impacts on human health, the environment, or California's groundwater resources. The study further concluded that the costs of cleaning up LUFT FHCs are often inappropriate when compared to the limited magnitude of the impact on groundwater resources.

- The Livermore study used and is based entirely on field data. A model was used to only to aid statistical analysis of the field data.

- In the past, Ecology has dismissed the findings of this study by one of the Nation's foremost research institutions as "not meeting the concept of MTCA". Ecology has not defined "the concept of MTCA" as it is relevant to this study, nor has Ecology provided any other justification for the rejection of this study that has been endorsed by industry, public interest groups and almost every other state.

842 5. The Texas study compiled and summarized data on more than 19,000 leaking petroleum storage tank (LPST) sites in Texas, 6,000 of which had impacted groundwater and resulted in fuel hydrocarbon plumes. The study concluded that because plumes appear to attenuate naturally, active remediation methods, such as pump and treat, would be required only in special cases to prevent a plume from impacting nearby receptors, or to reduce a plume that has already impacted a receptor.

843 6. The April 1999 study by Ecology and Health provides an analysis of approximately 160 contaminated wells throughout Washington. Of those 160 wells, only five (5) were contaminated by gasoline. It is worthy of note that the cleanup levels for the hazardous substances (nitrates and arsenic, pesticides and others) causing contamination to the other 155 wells have not been changed in the proposed amendments. The cleanup level for the substance contributing to only 3.2% of the contaminated wells, however, has been singled out for more stringent corrective action requirements. If there is no justification for changing the cleanup levels for the sources of 97% of the contamination of wells, surely there should be no justification for imposing a much more stringent cleanup level on the source of only 3.2% of the contamination.

844 **MODELS and RESULTS**

1. Over the past month the statement has frequently been made by representatives of Ecology's Toxic Cleanup Program that: "Hun Seak Park of PLIA knows more about the Four-Phase Model than anyone else, and he supports the model" ..... or words to that effect. That statement is not accurate! It is indeed accurate to state that Hun Seak Park has analyzed the model in detail and understands the model more than anyone else dealing with the proposed MTCA Rule. **It is absolutely <u>false</u> to state or to imply that Hun Seak Park supports the manner in which Ecology has used the model to produce proposed Method A soil cleanup levels.**

845 2. Background

a. The initial work performed by Ecology in reviewing MTCA cleanup levels and proposed Method A soil cleanup levels, was conducted using a Three-Phase Model. The Three-Phase Model was originally published in 1996 EPA technical guidelines regarding soil cleanup protocols. The soil-partitioning model was introduced for the purpose of providing quick screening levels for protection of groundwater at CERCLA sites. The model was developed for screening of large industrial sites, not to establish cleanup levels for small or routine petroleum cleanups.

846 b. Ecology also examined the Interim TPH Policy (developed by Ecology) and contracted with Dr. Richelle King of Washington State University to assess the basic assumptions underlying the Interim TPH Policy. On June 29, 1998, Dr. King reported to Ecology her assessment that, based on a survey of literature, the Interim TPH policy was not sensitive enough. She recommended the use of the Four-Phase Model.

847 c. The Four-Phase Model. The non-linear mathematical formula describing the equilibrium four-phase partitioning for organic mixture and its subsequent numerical techniques to solve equations was developed by Drs. Paul

Mariner, Henry Mott, Stan Feenstra and others, and has been in the academic world for about ten years. However, the assembly of numerical techniques to solve equations were not readily accessible to the general consulting community. Ecology considered awarding another grant to Dr. King to perform additional analysis regarding the use of the model. Instead, Hun Seak Park spent most of his time over a period of several months to translate the model into an executable program using *Excel*. Park delivered his program to Ecology in late November 1998.

848 3. The Four-Phase Model is an improvement over the Three-Phase Model in describing a single phenomenon in the microscopic soil system. However, the Four-Phase Model, like most models, has its limitations.

- The model fails to incorporate the other natural attenuation phenomena (i.e., chemical and/or biological degradation, successive partitioning through clean buffer soil zone, advection, dispersion, diffusion, volitalization, etc.), one of the most important factors related to benzene or gasoline release sites. The model assumes that the concentration of petroleum at the point of source is exactly the same as the concentration that will reach groundwater, no matter the actual distance between the two.

- The model depends on very conservative assumptions (including default input parameters) regarding the factors influencing the transport of fuel hydrocarbons to groundwater, and regards potable groundwater as the ultimate receptor at the source.

- The model has not been fully validated for developing cleanup levels for small or routine petroleum cleanups.

849 4. By using the model as its single source for Method A cleanup levels, Ecology has adopted the most conservative and stringent approach and has adopted it without regard to other considerations, particularly empirical data and anecdotal evidence readily available from Ecology's UST/LUST field regulatory staff.

850 ## CONTRADICTION IN PROPOSED AMENDMENTS

1. WAC 173-340-702 (12) discusses what is commonly referred to as *Grandfathering* of cleanups completed prior to adoption of the proposed cleanup levels included in the amendments. WAC 173-340-702 (12) provides that:

a. For cleanup actions conducted by Ecology, or under an order, the cleanup level is to be that level in effect when Ecology issued the final cleanup action plan.

b. For cleanup actions conducted as independent remedial actions, the cleanup level is to be that (1) in effect when final cleanup action began, or (2) in effect when Ecology reviews the action ... whichever is less stringent.

c. Cleanup actions completed under either of these options are not to be subject to further review action unless Ecology considers the cleanup level no longer sufficient to be protective of human health and the environment.

2. The concept of *grandfathering* cleanups completed under previous cleanup levels is a fine concept, but it is a concept, not reality. The concept fails to take into account fundamental business practices and the lending philosophy of most lending institutions.

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3. Even more important, this particular WAC demonstrates a fundamental contradiction in Ecology's proposed amendments to the cleanup rule.

a. The proposed amendments include cleanup levels for many substances (particularly key petroleum components) that are much more stringent or conservative than those currently in effect.

b. In order to justify adoption of more stringent cleanup levels, Ecology should have demonstrated that existing cleanup levels are <u>not</u> protective of human health and the environment. That being the case, cleanup actions completed under the existing cleanup levels <u>are all</u> likely to be subject to review action by the department.

4. The contradiction is elementary:

- Either all cleanups completed under the existing levels are not sufficient to protect human health and the environment and therefore must be subject to review by Ecology, or

- Cleanups are protective and need not be reviewed.

If the latter is true, that all cleanups completed under previous cleanup levels are indeed protective, Ecology cannot justify proposing more stringent and conservative cleanup levels.

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Attachment B

SMALL BUSINESS ECONOMIC IMPACT STATEMENT (SBEIS)

The Small Business Economic Impact Statement (SBEIS) published by Ecology to accompany proposed amendments to The Model Toxics Control Act Cleanup Regulation (Chapter 173-340 WAC), is unsatisfactory from both a procedural perspective as well as unsatisfactory in its content. The SBEIS is long on *boilerplate* and rhetoric (approximately 15 pages) but very short on substance, particularly impact on and increased costs to small business owners and operators (approximately one page). The SBEIS also includes approximately three pages of *Regulatory Relief* measures; measures which would represent little, if any, relief for or positive impact on small businesses.

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1. Procedural Issues

a. The SBEIS includes the statements: "The Regulatory Fairness Act requires State agencies to prepare a Small Business Economic Impact Statement (SBEIS) **prior** (emphasis added) to proposing to amend or adopt a regulation"; and, "The purpose of this report is to assist Ecology in making decisions on the proposed rule amendments."

On September 2, 1999, Tim Nord, Toxics Cleanup Program Headquarters Section Manager, and Curtis Dahlgren, Policy & Technical Support Unit Supervisor, visited the Pollution Liability Insurance Agency and briefed the Director on the content of the proposed amendments to MTCA. The briefing covered proposed cleanup standards and procedures, as well as other subjects. Both informed the Director that the proposed amendments were completed and were being prepared for printing. When asked the status of the SBEIS, both readily admitted that the study had not been completed. Further, both stated that neither knew when the SBEIS would be completed and ready for review.

The SBEIS was not prepared until after the amendments to MTCA had been completed. This is a clear violation of the terms and intent of the Regulatory Fairness Act. There can be no doubt that the amendments to MTCA were prepared without any realistic, serious or sincere consideration of the economic impact on small businesses. Further, there can be no doubt that the SBEIS was prepared after the fact with an eye only to satisfaction of administrative requirements and justification of the proposed amendments, not a serious analysis as required by the Regulatory Fairness Act.

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b. The SBEIS also includes the statement; *"... a separate advisory group met to review the cleanup standards for sites contaminated with petroleum products."* If this statement refers to the Duwamish Coalition's Brownfields/TPH Project, it should be noted that the orientation of the Duwamish Coalition has been almost exclusively with large industrial sites, not small businesses with

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property of an acre or less. Regardless of whether or not the statement refers to the efforts of the Duwamish Coalition, if, in fact, such an advisory group did meet "to review the cleanup standards for sites contaminated with petroleum", most of the affected stakeholders associated with the petroleum industry and petroleum cleanups were not included in this group. Although they represent all elements of the petroleum industry and business entities that directly impact the petroleum industry, none of the following were included in a *separate advisory group*.

- Washington Oil Marketers Association,
- Oil Heat Institute of Washington,
- Independent Business Association,
- Western States Petroleum Association,
- Korean Grocer's Association,
- Automotive United Trades Organization,
- Representatives of lending institutions,
- Realtors
- Representatives of service providers (small or medium size contractors) who actually perform the vast majority of petroleum cleanups,
- Independent Insurance Agents and Brokers, and
- The Pollution Liability Insurance Agency and its associated insurance companies. (PLIA insurance companies provide pollution liability insurance to more than 65% of UST owners and operators in the state and to more than 60,000 homeowners under the heating oil pollution liability insurance program.)

The statement, "... a separate advisory group met to review the cleanup standards for sites contaminated with petroleum products", is misleading and without merit.

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2. Proposed Rule Impact on Small Business

a. The SBEIS statements on pages 19 and 20 regarding whether the proposed rule will cause businesses to lose sales or revenue, are the only statements included in the entire report that reflect Ecology's view of the impact of the proposed rule on small businesses. The statements are fundamentally flawed and reflect an alarming lack of understanding of the retail and wholesale petroleum industry.

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b. For Ecology to find it *"unlikely that the proposed regulatory amendments will cause affected business any sales or revenue losses"*, and to state, *"Ecology does not anticipate these amendments would cause a significant increase in that down time"* is to ignore reality. The proposed amendments include cleanup levels for benzene, gasoline and TPH that are dramatically more

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stringent than those currently in place. The mathematics involved is fundamental: dramatically more stringent cleanup levels result in significant increases in the cost of cleanups. More stringent cleanup standards that cost significantly more will no doubt result in cleanups that take longer to accomplish. The longer it takes to complete a cleanup, the longer the business is closed. For Ecology to conclude that dramatically more stringent cleanup levels will not result in more time required to complete cleanups is not realistic.

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c. The source of the stated department's experience that "cleanup costs range from $10,000 to $100,000" is unknown, nor is it known on how many cleanups this estimate is based. The experience of the commercial insurance companies that provide environmental liability insurance and the Pollution Liability Insurance Agency over the past nine years, and based on more than 215 UST cleanups, is that this estimate is significantly understated. The experience of PLIA is that the average cost of cleanup of a site with only contaminated soil (no ground or surface water) is approximately $70,000. The average cost of cleanup of a site with contaminated groundwater will almost always exceed $250,000.

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d. The SBEIS includes the statement, *"While the proposed rules may slightly increase this cost, Ecology does not expect an increase of more than 20%."* The basis of this estimation and the data used to develop the estimate are not known, nor are they provided or justified in the SBEIS. No matter the source or basis, an estimate of cost increase for a small business operator of 20% is not trivial, nor should it be addressed in such a casual or blasé manner. Small business profit margins are far too sensitive and narrow to accommodate a 20% cost increase without serious consequences.

In this case, the estimate is very understated. PLIA estimates the cost increase in contamination cleanup for a site with only soil contamination to be at least 32% (current Method A compared with proposed Method A). Further, PLIA estimates the cost increase in contamination cleanup for a site with contaminated groundwater to be 32% for the soil and 31% for groundwater treatment (current Method A compared with proposed Method A). A detailed analysis of PLIA's estimate of cost increase is attached.

The PLIA cost increase estimates are very conservative. It is quite probable that if the proposed Method A cleanup levels are adopted, actual increased costs will exceed 38% for soil cleanup, and may well exceed 50% for groundwater and soil cleanup.

Even if Ecology's estimate of increased cleanup costs of 20% were reasonably accurate, how can the department justify such a significant increase in the cost of cleanup? This is a particularly egregious and unreasonable increase in cost considering the absence of any evidence that existing cleanup levels are not protective of human health and the environment.

858 increase in cost considering the absence of any evidence that existing cleanup levels are not protective of human health and the environment.

Over the past ten years, several thousand cleanups of petroleum spills and releases throughout the state have been completed, or are underway.

- There is no evidence whatsoever that the results of these cleanups has not been protective of human health and the environment!

- There is no evidence that any cleanup of petroleum products has failed to protect ground or surface water!

- There is no evidence that current soil cleanup levels are not adequate to protect human health and the environment!

859 e. To pay for the cost of cleanup, the SBEIS discusses an additional cost per gallon to a merchant of $0.01 per gallon in such a manner that the reader is led to consider that to a merchant one penny a gallon is an insignificant amount. This is simply not an accurate or objective presentation. For the matter to be presented in such a manner demonstrates an appalling lack of knowledge of the petroleum industry.

Retail petroleum dealers calculate profit on the basis of a *pool margin*. The dealer may make only 3 cents profit on each gallon of regular unleaded gasoline, but 11 cents on super unleaded, 7 cents on diesel, etc. The dealer then calculates the number of gallons sold in each category and the result is the margin of profit for the entire pool of products sold. (Total gallons divided by the profit on each product, average, etc.) In the metropolitan areas of Washington (Seattle, Tacoma, Everett, Spokane and the Tri-Cities) the pool margin is usually **6 to 8 cents GROSS profit per gallon.** In the rural areas of the state, the margin is slightly higher. This narrow profit margin is true, not just in Washington, but across the nation. Reporting in National Petroleum News, petroleum industry analyst Daniel Johnson has stated that gasoline retailers nationwide typically earn between 3 and 6 cents net profit per gallon.

The impact of the loss of one penny per gallon profit is not a trivial issue for a retail dealer in Washington! **The loss of one penny per gallon is the loss of 16.6% to 12.5% of the dealer's gross profit!**

To emphasize this matter further, it must be understood just how unsettled the business and profit picture is for a small gas station or convenience store. A commonly accepted industry standard is that a convenience store should sell at least 30,000 gallons per month to be profitable. Johnston in National Petroleum News stated that gasoline usually accounts for about 1/3 of convenience store sales. With monthly sales of 30,000 gallons, **the monthly Gross Profit of a**

convenience store for gasoline sales is between $1800 and $2400; annual Gross Profit of only $21,600 to $28,800.

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3. Regulatory Relief Provided to Small Business

a. The SBEIS introduces regulatory relief provisions that are presented as mitigating increased costs to small businesses. Most have or will have little, if any impact on small businesses. In fact, more than half of the 13 provisions already exist and have proven to be ineffective as regulatory relief measures for small businesses. A summary of these measures is provided in the Table below. Additional detailed comments on specific regulatory relief measures follow.

Regulatory Relief	Comment
Use of Remediation Level	**No relief because of stigma of Institutional Controls (ICs)**
Area-wide points of compliance	**Rarely applicable to small business and no relief because of ICs**
Expansion of financial assurance mechanisms	**No relief to small business; small businesses will continue to depend on insurance or loans; costs still increase regardless of how paid.**
Use of Model Remedy	**Model Remedies do not exist; no relief provided.**
Provision for technical assistance	**No relief; Ecology is already understaffed and has yet to demonstrate the ability to achieve this goal.**
Use of site-specific risk assessment (Method A vs. Method B)	**No relief; additional time and costs would be incurred to accomplish analysis, and perhaps to accomplish cleanup.**
State Toxics Control Account	**No relief or extremely limited application; lack of funding of the account.**

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Resource sharing and PLP targeting	**Limited application and virtually no relief for small businesses.**
Agreed Orders	**No relief; the administrative process itself will add at least 30% to the cleanup cost.**
Interim Actions	**No relief; an "end point" is not reached and the property remains devalued.**
Citizen Technical Advisor	**No relief; this additional position will not provide the resources to fully assist small business as needed.**
Terrestrial Evaluation	**Becoming exempt from a new requirement maintains status quo, but does not offer relief. Further, ICs may devalue the property.**

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b. Contamination Remaining On Site. The section includes the statement "The proposed rule explicitly allows that a remediation level that leaves hazardous substances at the site in concentrations above cleanup levels may be considered protective of human health and the environment." The concept provides no practical economic benefit or relief to small business owners or operators, nor is the concept "user friendly" to small businesses as the SBEIS contends.

This statement and concept fail to take into account fundamental aspects of small business. Leaving contamination on the site really has no impact unless, (a) the owner wants to sell the property, or (b) the owner wants to borrow funds using the property as collateral. If contamination is present on a property, neither of those options is possible, except under very unusual circumstances. Further, because of these probable restrictions, the value of the property will no doubt be decreased.

As a matter of fact, since a property probably can't be sold without completion of cleanup, nor could the property be borrowed against without completion of cleanup, there really would be no point in a small business exercising a partial cleanup unless it was absolutely required because of a threat to human health and the environment.

The frequency of transfer of property among small businesses is not an insignificant issue. Because of contractual agreements, PLIA maintains close supervision of the small businesses that received grants under the UST Community Assistance Program. In just five years, since 1994, 33 of the 103

861 cont. properties have changed hands, 2 more have changed hands 3 times. This level of turnover is typical and cannot be ignored. Commerce would be severely impacted if property transfers were not possible because contaminated properties were not cleaned up.

To exercise a partial cleanup of a property, leaving existing contamination in place, would also seriously complicate future pollution liability insurance coverage of the site. Future pollution liability insurance coverage would reflect the existence of contamination and premiums would be higher. In the event of a future claim, the burden of proof would be on the property owner to demonstrate that new contamination was not in any way related to the previous condition. Such a demonstration by the small business operator would involve a potentially very expensive investigation.

The number of insurance companies that will provide pollution liability insurance coverage for a site with known contamination is very limited. Further, that coverage is, and will continue to be, very expensive. Without pollution liability insurance coverage, a small business will not be in compliance with state and federal regulations, and will lose its business license.

862 **c. Financial Assurance Mechanisms.** Expanding the types of financial assurance mechanisms Ecology will accept is of little, if any, practical value to the small business owner or operator. The small business operator must depend almost entirely on one of two vehicles for financial assistance in paying for the cost of cleanup of contamination; either pollution liability insurance coverage, or a conventional loan from a commercial lending institution with the property as collateral for the loan.

Additional financial assurance mechanisms apply only for sites where the cleanup action selected includes engineering and/or *institutional controls*. If cleanup standards cannot be met and a permanent cleanup is not possible, approval by Ecology of the use of *institutional controls* as a remedy is of limited value to the small business operator. If the small business operator must depend on a conventional loan from a commercial lending facility with the property as collateral, he or she had better hope that the loan is approved prior to the lender discovering that the loan will be made against a property that is and will remain contaminated. Otherwise, the loan will probably not be approved.

If an insurance settlement is paying for the cost of cleanup, the small business operator is still faced with the unhappy predicament and social cost of a property title that has restrictions reflecting contamination existing on the property. As noted above, the likelihood of a property with deed restriction(s) selling, or a loan being made with the property as collateral, is very slim.

An exception from Ecology regarding financial assurance is really a moot issue for the small business operator. He or she is faced with the practical

matter of finding a source to pay for the cleanup, reopening the business, or ... no doubt "throwing the keys on the roof and walking away". In that case, it is Ecology that would eventually assume responsibility for the cleanup.

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d. Model Remedies. The development of model remedies may or may not be of value to the small business operator. Since model remedies have yet to be developed, their impact on small businesses can hardly be evaluated. Model remedies that have not been developed or evaluated should not be portrayed as "regulatory relief provided to small businesses."

The concept of model remedies seems to imply a "one cleanup method fits all circumstances" theory. This is seldom the case: the sources of contamination are different; the configuration of tanks, lines, dispensers and especially proximity to buildings and streets vary significantly; soil types and proximity to groundwater are different; etc. Seldom, if ever, will two UST cleanup sites be the same. Further, model remedies can be developed reflecting only existing cleanup technology; new cleanup technologies are being developed at a very rapid pace. To make model remedies effective, a continuous review and updating process must be implemented .... another drain on Ecology's already limited resources.

The small business operator will be driven or motivated by which technology is the most cost effective – the least expensive, but sufficient to accomplish cleanup levels. The implementation of that technology will be based on practical application factors driven by the specific site.

Today the options available to a small business operator for cleanup of contaminated soil are limited: ex-situ involving excavation; or, in-situ with the options of soil vapor extraction or soil bio-venting. With such limited options, of what benefit is a *model remedy*? There really is no such thing as a model remedy; there is only application of the least expensive, but appropriate option for the specific cleanup being considered.

This is particularly true if the model remedy includes *natural attenuation*. Natural attenuation is a viable alternative to a property owner ..... so long as the property owner does not plan to sell the contaminated property, or so long as the owner never wants to obtain a loan with the contaminated property as collateral for the loan. Natural attenuation might be a viable alternative for Weyerhaeuser or Alaska Airlines; it is not a practical alternative for Tony Tankowner in Toutle Lake. As noted previously, property turnover among small business operators is frequent.

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e. *Method A vis-a-vis Method B.* The use of Method B methodologies, rather than use of Method A cleanup levels is not a practical alternative and provides limited, if any, relief for small business owners or operators. Method B requires, as Ecology states in the draft SBEIS, "more sophisticated methods....

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to make risk assessment and risk management decisions". These methods, however, will not be as readily used by small business because they are more complex and technical, and consequently more expensive. As a result, Ecology concludes that small businesses are more likely to face "disproportionately higher costs than large business."

Even if the Method B site-specific risk approach is used by a small business, the cost of evaluation under Method B (Tier I, II, or III) will usually not be off-set by a resulting more favorable site-specific cleanup level. Often, proceeding with the higher tiered site-evaluation will likely lead to even more restrictive cleanup levels and thereby increase site evaluation and remediation costs dramatically. Further, the additional time required to conduct the analysis and evaluation associated with a Method B cleanup may be prohibitive to the small business operator.

The following Table is a summary of the most probable cleanup levels for a typical petroleum LUST site in Western Washington under the proposed amendments to the Rule..... comparing Method A cleanup levels with tiered site-specific values.

		Method A	Method B		
			Standard-Tier I	Modified-Tier II	Modified-Tier III
Ground-water (µg/L)	MTBE	20	20	N/A	N/A
	Benzene	5	1.5	N/A	N/A
	TPHG	800	600~1000	N/A	N/A
Soil (mg/kg)	Benzene	0.1	0.03 (0.005~0.03)	0.2 (0.005~0.3)	0.6 (0.005~1.2)
	TPHG	30	25 (3~35)	90 (4~130)	200 (4~250)

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f. Toxics Account. The SBEIS notes, "Financial assistance is contingent upon the availability of funds within the Model Toxics Control Account." The proposal that the State Toxics Control Account can be used to help fund remediation efforts cannot be considered a serious relief for small business owners or operators.

The Toxics Account is currently not sufficient to meet the needs of Ecology. A Focus bulletin dated April 2, 1999 notes actions Ecology must take to deal with reductions in the account. The proposed amendments include such additional expenses as establishing a Citizen Technical Advisor position; additional drains on already insufficient resources. Further, recent decisions by the Board of Tax Appeals will result in significant refunds from the Account. The

future availability of funds from the Toxics Account will be even more in doubt. This proposal is almost frivolous, certainly without merit!

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g. Agreed Orders. Establishing an administrative process for issuing Agreed Orders will provide little relief or benefit to the small business owner or operator. When faced with a required cleanup of contamination, the small business operator is concerned with finding a source of funds to pay for the cleanup, and with determining the easiest and quickest method of effecting the cleanup, with the least interruption possible to business. The vast majority of small business operators will conduct cleanups as independent cleanups and will never even be aware of the existence of Agreed Orders.

CONCLUSION

In the Small Business Economic Impact Statement, Ecology acknowledges that each Rule proposed by Ecology in response to a legislative mandate must comply with the Administrative Procedure Act (RCW 34.05.328) and the Regulatory Fairness Act (RCW 19.85). **Ecology must modify the proposed amendments to the Rule to mitigate the negative economic impact on small business owners and operators.**

Enclosures: Cost Estimate Analyses

Figure1-1: Cost Analysis for Soil Cleanup

(Typical gasoline contaminated LUST site located in Western Washington)

Method A

	Current MTCA Cost Estimate	Proposed MTCA Cost Estimate	Comments
Work Plans: safety and health plans; schedule; proposal; facilities search; site familiarization; offsite access permit.	$ 600.00	$ 600.00	
Basic Field Activities: receptor survey; sampling activities; borings; simple site survey; free product removal.	$ 3,500.00	$ 3,500.00	10 borings; direct push (Geoprobe) technology; professional staff labor
Basic Laboratory Analysis:	$ 3,260.00	$ 4,660.00	20 samples; additional lab test analysis required
Risk Assessment and Evaluation: feasibility & remedial investigation; identification of exposure pathways; required hydrogeological parameters field work testing; measurement of rate constants.	$ 1,352.00	$ 1,632.00	Additional consulting required; 20% of lab and basic field activity cost charged; minimal evaluation required
Remediation cost: installation; O&M for facility(s); corrective action plan; capital O/M cost; pilot study; site closure report;etc.	$ 62,500.00	$ 83,500.00*	Assumes bioventing process; proposed rule will require 34 months operation; current rule requires 22 months operation
Monitoring Cost:	$ 0	$ 0	
Institutional Control Required?	N/A	N/A	
Driving Factors			*Does not include active air abatement costs.
Benzene	0.5	0.1	
TPHG	100	30	
Sub Total	$ 71,212.00	$ 93,892.00	
Relative Cost Indicator	**100%**	**132%**	

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Figure1-2: Cost Analysis for Soil Cleanup

(Typical gasoline contaminated LUST located in Western Washington)

Method B Tier II (Standard Method B) 3 phase model with default input parameters

	Current MTCA Cost Estimate	Proposed MTCA Cost Estimate	Comments
Work Plans: safety and health plans; schedule; proposal development of conceptual model		$ 800.00	
Basic Field Activities: receptor survey; sampling activities; borings; simple site survey; free product removal;		$ 3,800.00	10 borings; direct push (Geoprobe) technology; professional staff labor
Basic Laboratory Analysis:		$ 9,260.00	20 samples; TPH fractionated data; additional analytical items; VPH fractionation is necessary; composition of fuel is not expected to be constant across the site; statistical approach is not clear
Risk Assessment and Evaluation: feasibility & remedial investigation; identification of exposure pathways; required hydrogeological parameter field work testing; measurement of rate constants; modeling		$ 3,918.00	Minimum consulting required; exposure pathway identification; 30 % of lab and basic field activity cost charged; use default parameters;
Remediation cost: installation; O&M for facility(s); corrective action plan; capital O/M cost; pilot study; site closure report;etc.		$ 92,250.00*	Presumes bioventing process; the proposed rule will require 39 months operation
Monitoring Cost:		$ 0	
Monitoring Required? Institutional Control Required? Driving Factors Benzene TPHG		N/A N/A 0.03 25	*Does not include active air abatement costs.
Sub Total **Relative cost indicator**		$ 110,028.00 **155%**	Percent cost increase is based on Method A current cost estimate for comparison purposes

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Figure 1-3: Cost Analysis for Soil Cleanup

(Typical gasoline contaminated LUST site located in Western Washington)

Method B Tier II (Modified Method B) 2 phase model with site specific parameters

	Current MTCA Cost Estimate	Proposed MTCA Cost Estimate	Comments
Work Plans: safety and health plans; schedule; proposal preliminary planning; other facilities search; site familiarization; offsite access; permit		$ 800.00	
Basic Field Activities: receptor survey; sampling activities; borings; simple site survey; free product removal;		$ 4,000.00	10 borings, direct push (Geoprobe) technology professional staff labor
Basic Laboratory Analysis:		$ 9,260.00	20 samples; TPH fractionated data; additional analytical items; VPH fractionation is necessary; composition of fuel is not expected to be constant across the site; statistical approach not yet clear
Risk Assessment and Evaluation: feasibility & remedial investigation; identification of exposure pathways; required hydrgeological parameter field work testing; measurement of rate constants; modeling		$ 9,258.00	Moderate consulting required; soil organics, water content, DF, soil density measurement of leaching testing required; 4 phase model used
Remediation cost: installation; O&M for facility(s); corrective action plan; capital O/M cost; pilot study; site closure report;etc.		$ .71,250.00*	Requires bioventing process; the proposed rule will require 27 months operations
Monitoring Cost:		$ 0	
Monitoring Required? Institutional Control Required? Driving Factors Benzene TPHG		N/A N/A 0.2 90	*Does not include active air abatement costs.
Sub Total **Relative cost indicator**		$ 94,568.00 **133%**	Percent cost increase is based on Method A current cost estimate for comparison purposes

Figure1-4: Cost Analysis for Soil Cleanup

(Typical gasoline contaminated LUST located in Western Washington)

Method B: Tier II (Modified Model B) Complex Fate/Transport Computer Model

	Current MTCA Cost Estimate	Proposed MTCA Cost Estimate	Comments
Work Plans: safety and health plans; schedule; proposal preliminary planning; other facilities search; site familizaration offsite access; permit		$ 1,000.00	
Basic Field Activities: receptor survey; sampling activities; borings; simple site survey; free product removal;		$ 4,000.00	10 borings; direct push (geoprobe) technology; professional staff labor
Basic Laboratory Analysis:		$ 9,260.00	20 samples; TPH fractionated data; additional analytical items; VPH fractionation is necessary composition of fuel is not expected to be constant across the site; statistical approach not yet clear
Risk Assessment and Evaluation: feasibility & remedial investigation; identification of exposure pathways; required field work for hydrogeological modeling; SESOIL was chosen to describe pollutant fate/ transport in the unsaturated zone soil; the following input parameters should be measured or estimated 7 soil data 10 climate date, 16 chemical data, 18 application data to use the Model. SESOIL has been widely adopted for its ease and scientific credibility. The criteria of setup soil concentration is to protect drinking water resource		$ 20,000.00	Significant consulting necessary; soil attenuation model and GW flow model required; slug/pump test required for supporting non-potatibity designation & hydrological study; degradation data required; conceptual site model is more complex and site specific: ecological evaluation required; SESOIL was simulated under the assumption of 112 days of model, liquid half life of benzene and more than 25 ft. depth to groundwater; target soil cleanup level will be approximately 0.6 mg/kg of benzene (200mg/kg of TPH) Site simulation cost would range from $15,000 to $40,000
Remediation cost: installation; O&M for facility(s); corrective action plan; capital O/M cost; pilot study; site reports		$ 59,000.00*	Presume bioventing process; the proposed rule will require 29 months operation.*Does not include active air abatement costs.
Monitoring Cost:		$ 0	
Institutional Control Required? Driving Factors Benzene TPHG		Most Likely 0.6 200	The cost of restricting land use is difficult to estimate, particularly the potential impact on property value and liabilities associated with future.
Sub Total **Relative cost indicator**		$ 93,260.00 **131%**	Percent cost increase is based on Method A current cost estimate for comparison purposes

Figure 2: Cost Analysis for Ground Water Cleanup Only

(In addition to Soil Cleanup Costs)

Method A	Current MTCA Cost Estimate	Proposed MTCA Cost Estimate	Comments
Work Plans: safety and health plans; schedule; proposal	$ 500.00	$ 500.00	
Basic Field Activities: receptor survey; sampling activities; borings; simple site survey; monitoring well installation	$ 15,000.00	$ 15,000.00	8 borings to 30 feet, converted to two inch monitoring wells; well development
Basic Laboratory Analysis:	$ 2,700.00	$ 7,600.00	20 samples; additional analysis for Naphthalene and MTBE must be required
Risk Assessment and Evaluation: feasibility & remedial investigation; identification of exposure pathways; required field work for hydrogeological parameter testing; measurement of rate constants; simple modeling	$ 5,500.00	$ 6,500.00	General groundwater investigation
Remediation Costs: installation; O/M of facility(s) including compliance monitoring; design and test of system; corrective action plan; site closure reporting; slug-pump test	$ 150,000.00	$ 170,250.00	For average site; detection of MTBE is assumed to be 20%; additional cost due to MTBE remediation normalized based on EPA 510-F-98-002 and other sources. Sites may cost twice as much as the current costs because of MTBE cleanups
Monitoring Cost:	$ 14,220.00	$ 31,860.00	Includes well survey water elevation measurement; assumes 2 years; 3QR/yr events, 10 samples/QR.
Institutional Control Required?	N/A	N/A	
Driving Factors:			
Benzene	0.5	0.5	
TPHG	1,000	800	
MTBE		20	
Sub Total	$ 187,920.00	$ 231,710.00	
Relative Cost Indicator	**100%**	**123%**	

Reply 30

EQUILON
ENTERPRISES LLC
Shell & Texaco Working Together

January 17, 2000

Trish Akana
Washington State Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

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Dear Ms. Akana:

Attached are Equilon's comments on the MTCA Proposed Rule Amendment, Chapter 173-340 WAC, Model Toxics Control Act. Please contact me at (425) 741-8642 if you have questions or would like to discuss our comments.

Sincerely,

Jeff Goold
Senior Project Manager
Equiva Services LLC
SH&E Science & Engineering

JGB:bhs
R: equiva/data/wspa/eco21.doc

Attachment

Cc: Robbie Ettinger, WTC

10602 NE 38th Pl.
P.O. Box 2969
Kirkland, WA 98083-2969

reply 31
Page 1 of 9

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Amendments to the Model Toxics Control Act Regulation
Proposed by the Department of Ecology
Comments and Recommendations

Equilon appreciates the effort that the department has expended in modifying the Model Toxics Control Act Regulations by revising WAC 173-340 dated 11/17/99. The proposed WAC 173-340 attempts to provide a risk-based approach to manage (characterize and remedy) contaminated media (soil, groundwater, surface waters, and air). Given the large amount of money and time being spent to manage contaminated sites, we support the department's goal of developing a workable process to accomplish effective and expeditious cleanups in a manner that protects human health and the environment.

867 Several elements included in the revised WAC 173-340 will enhance the overall efficiency of site cleanups. These include the flexibility to combine the various steps of the site management process (WAC 173-340-139(5)), the idea of reducing any duplicate efforts in the process (WAC 173-340-400(4)), and the concept of prospective purchaser consent decrees (WAC 173-340-520).

868 Our review of the draft WAC173-340 also identifies items that will prevent the department from meeting its objective. First, the process, as presented in WAC 173-340, is too complex to understand and implement correctly and efficiently. Second, the process as well as the default values used to develop the standard Method B levels are too conservative and may require cleanup at sites that do not pose an unacceptable risk to human health or the environment. Such cleanups will result in unnecessary expenditure by the citizen's of Washington State without a commensurate benefit to them or their environment. Third, the process is not consistent with the state-of-practice of risk based decision making currently being implemented in about 30 states.

Equilon believes that the above concerns must be addressed in order for the department's goal to be achieved. Equilon would be willing to work with the Department of Ecology in revising the draft rule to develop a workable risk-based program.

Specific comments are presented below:

869 1. The process of risk based decision making should start by developing a site conceptual exposure model (SCEM). A SCEM identifies the (i) source of contaminants, (ii) the pathways by which chemicals migrate from the source to the receptors, (ii) current and potential future receptors, and (iv) the routes by which each receptor is exposed to the site-specific chemicals. A complete SCEM provides the framework for the entire project and is the cornerstone of a good risk based-decision-making program.

869 cont.

The concept of SCEM has been mentioned in several sections (WAC 173-340 (7), WAC 173-340-700(5&8), however it has not been sufficiently emphasized. The SCEM should be developed as a part of the Remedial Investigation. The SCEM should consider the current and likely future land-use to identify all the complete routes of exposure for human as well as ecological receptors and identify the point(s) of exposure, point(s) of compliance, and the chemicals of concern. Those implementing the process should be encouraged to present the SCEM in a graphical or a tabular form (SEE ATTACHMENT 1 for example of a tabular and a graphical form of the SCEM).

2. 870

The current process consists of three methods (A, B, and C) by which cleanup levels can be developed. Methods B and C have 2 tiers each. However, Method C can only be used for industrial sites or at residential sites where Method A or B levels cannot be achieved or the process of achieving these results may result in unacceptable risk.

The process would be much simpler if there were only 3 tiers. Tier 1 would require cleanup to background or the practical quantitation limits. Sites meeting Tier 1 levels will not have any restrictions placed on them. Although not risk based, Tier 1 would be consistent with the Ecology's policy and equivalent to Method A. Tier 2 (equivalent of standard Methods B and C) would consist of tabulated cleanup levels derived by the department for residential and industrial land-use. Sites meeting industrial standards would have restrictions placed on the land use. Tier 3 (equivalent to modified Methods B and C) would consist of site-specific cleanup levels that would vary depending on the land use. Such a 3 tier/method framework would be easy to understand, easy to implement, and meet the goals of the Department.

For such a 3 tier system, implementation would proceed by (i) developing a SCEM, (ii) selecting Tier 1 cleanup levels for the lookup tables for the complete routes of exposure, (iii) comparing the lookup values with the representative site concentrations, and (iv) deciding whether to remediate to the tabulated values or proceed with a more detailed, next tiered, evaluation. Such a framework can be easily set-up to meet Ecology's objectives as presented in Chapter 173. In fact a similar framework is presented for TPH cleanups in WAC 173-340-700(8). Note that this inconsistency between methods for addressing TPH and other chemicals is an example of how these proposed rules are difficult to understand and overly complex.

3. 871

Within the risk based decision-making framework it is useful to differentiate between the point(s) of exposure (POE) and the point(s) of compliance (POC). The POE is the location where the exposure occurs, whereas the POC is the location where concentrations are measured and remedied, if necessary, to ensure that the concentration at the POE would not exceed the target POE concentration.

871 cont.

Thus, the risk-based decision making process requires the calculation of target concentration at the POE and the target concentration at the POC for each complete route of exposure. Note for direct routes of exposure, e.g. ingestion of soil, the POE and the POC are the same and hence the target POE concentration is the same as the target POC concentration. For indirect routes of exposure, e.g., inhalation of indoor air contaminated by vapors migrating upward from contaminated soil, the POE is the indoor air where the actual exposure occurs whereas the POC would be the contaminated soil from where the vapors volatilize.

The draft regulations do not distinguish between the POE and the POC. The term POC is used for POC as well as POE. We suggest that the regulations be revised to distinguish between the POE and the POC. In particular, we recommend that the program be modified to allow POE to be established at the nearest location down-gradient from the source where groundwater use is occurring or is likely to occur in the future. Note, under the current program, except for the case of conditional compliance point (see comment below), the point of exposure is set at the source. Without this modification, the program would be inefficient and impractical except for a handful of sites.

4. 872

The concept of conditional compliance point is good, however the burden of demonstrating that " all practicable methods of treatment are to be used in the site cleanup" may be too onerous. At a minimum the department should allow reasonable cost criteria to invoke the provisional compliance point concept.

5. 873

Based on our experience, the Method A unrestricted soil cleanup level (Table 740-1) of 30 mg/kg for TPH-G is overly conservative especially when the total BTEX cleanup level is 22.1 mg/kg. This low Method A soil cleanup level for TPH-G is a direct result of assumed benzene and toluene fractions in the TPH We suggest that the Department confirm that there is no "double accounting" of BTEX in the calculation of total site risk or the back-calculation of cleanup levels based on a target risk (individual excess lifetime cancer risk or the hazard index). This concept is further discussed below.

Since the MTCA program has cleanup levels for both BTEX and TPH-G, the TPH-G cleanup values should be calculated by assigning a weight fraction of zero to BTEX. Similarly, when comparing the site-specific measured values of TPH-G to the cleanup levels, the measured total BTEX concentration must be subtracted from the measured TPH-G concentration. For example, if the measured TPH-G and total BTEX concentrations were 560 mg/kg and 70 mg/kg respectively, the TPH-G value to be compared with the TPH-G cleanup level would be 490 mg/kg and not 560 mg/kg. Note such a correction in the calculation of TPH-G cleanup levels or the comparison with site values would not be necessary if only TPH-G cleanup levels were being used to manage sites.

6. 874 The difference between cleanup levels and remediation levels is not clear. Why is it necessary to perform a risk assessment to develop remediation levels, especially since cleanup levels are supposed to be risk based (WAC 173-340-708(3 (d))).

7. 875 The routes of exposure considered in this regulation are not clear. For example the development of soil concentrations for unrestricted land use, (WAC173-340-740, Equation 740-1) only includes the ingestion of soil. The equation should be modified to include the exposures due to the ingestion of soil, inhalation of vapors and particulate, and dermal contact with the soil. 876 In WAC173-340-740 (3), there is a discussion to include exposure to indoor inhalation of vapors and dermal contact, if ingestion based cleanup levels are too high. Who decides if the concentrations are high? Different consultants and PLPs (Potentially Liable Parties) will make different decisions resulting in inconsistencies and make the process difficult to implement. These problems can be avoided by developing a comprehensive SCEM during the early stages of the RI.

8. 877 The application of statistical evaluation (WAC 153-340-720(10) to demonstrate compliance with the selected cleanup levels may not be possible at small sites where sufficient number of samples may not be available. At such sites, the department may want to establish alternative representative concentrations (e.g., arithmetic average or area average).

ADDITIONAL COMMENTS

878 1. WAC 173-340-350(12) This discussion should be included in the RI part of this section. For gasoline station sites, the use of a 0.25 factor in the direct ingestion equation implies that a child ingests 200 mg of soil daily for about 92 (365/4) days at the site or 50 mg/day for 365 days per year. This is a very unreasonable scenario especially in urban areas.

879 2. WAC-173-340 (3) The idea of selecting a remedial alternative that is not "disproportionately expensive" is good however it is next to impossible to objectively apply the disproportionate cost test at a real site since it is difficult to quantify the benefits.

880 3. WAC 173-340-410 The concept of compliance monitoring as presented is correct. The Department of Ecology should provide some general guidelines to determine the frequency and duration of compliance monitoring that will be required at a site.

881 4. WAC 173-340-440(5) Theoretically it will always be possible to implement a permanent remedy. However, institutional controls should be allowed at sites where equivalent protection is possible without the implementation of a permanent remedy.

882 5. WAC 173-340-600 The concept of informing the public and the stakeholders of activities occurring at the site is good. However this process should be carefully managed to avoid unnecessary delays and expense. This section is rather confusing. Perhaps the department should develop a prototype public participation/information plan and have the PLP amend it for the specific site conditions.

883 6. WAC 173-340-700(8) The three tiered approach for establishing Method B or Method C cleanup levels for petroleum impacted sites is not clear. Additional information and technical details would help.

884 7. WAC 173-340-704(1) What does the department mean by a few hazardous substances? How few are few?

885 8. WAC 173-340-706(4) The target risk for individual chemical and individual pathways is the same as for cumulative pathways and chemicals. This can only be true in the case of a single chemical and a single route of exposure – a highly unlikely scenario.

886 9. WAC 173-340-708(3) RME scenario for all groundwater is too stringent. It is not reasonable to assume that all groundwater is likely to be used for ingestion, especially in urban areas where there is a public water supply.

887 10. WAC 173-340-708(9) Since the bio-concentration factors are not readily available, the department should provide a table and state that the PRP should check with the department that the tabulated values are current.

888 11. WAC 173-340-720 (9) The concept of conditional compliance point is good, however the burden of demonstrating that "all practicable methods of treatment are to be used in the site cleanup" may be too onerous. At a minimum the department should allow reasonable cost criteria to invoke the provisional compliance point concept.

889 12. WAC173-340-740 (3) Equations 740-1 and 740-2 assume a child ingests 200 mg/day for each day for the 6 year exposure. This is unrealistic because of snow cover or frozen ground conditions in the winters and rainy days. A more realistic exposure frequency should be considered.

890 13. The Method A cleanup levels have been tabulated for very few chemicals. We recommend that the department develop and tabulate these levels for a more comprehensive list of chemicals. One possibility would be to use the list included in the USEPA soil screening guidance document.

891 14. WAC 173-340-720(4) What is the technical basis for the inhalation correction factor of 2? How was it derived? Presumably this factor accounts for the inhalation exposures that occur due to the household use of water. This factor would depend on the volatility of the chemical and would be "zero' for non-volatile chemicals.

892 15. WAC 173-340-740(6) This section implies that a child could be exposed to the top 15 feet of soil. Whereas this is conceivable, it is highly unlikely at many urban sites. We recommend that the Department make a distinction between surficial (surface to 1ft. below ground surface) and subsurface soils (blow 1 ft. below ground surface). At some sites, subsurface soils may not be accessible to a child.

893 17. WAC 173-340-720(9) What is a reasonable restoration time frame?

894 18. WAC 173-340-720(9) The requirement that a PLP demonstrate that all practicable methods of treatment are to be used for site cleanup is very onerous and perhaps impossible.

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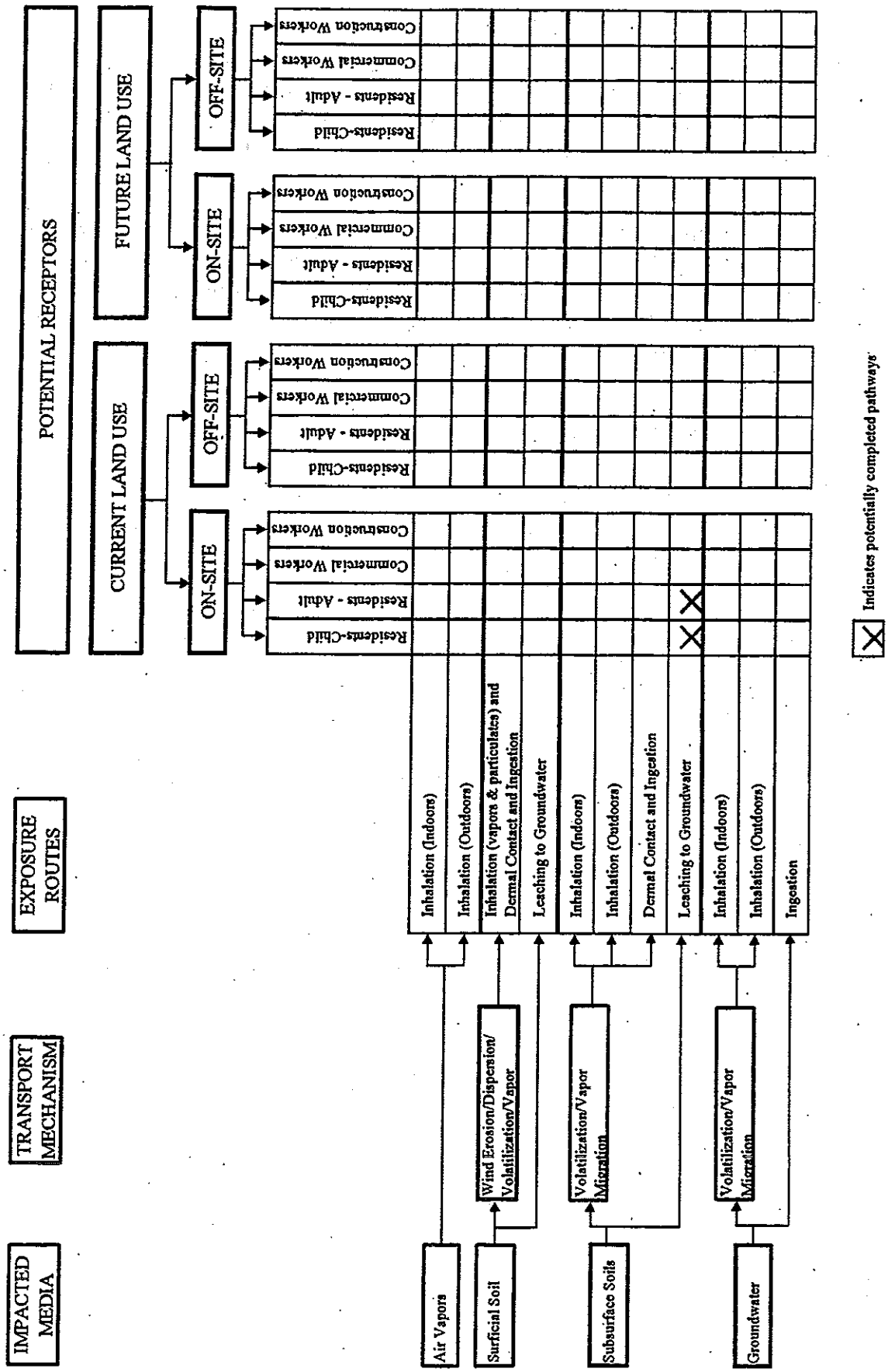

GRAPHICAL FORM OF A SITE CONCEPTUAL EXPOSURE MODEL

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EXAMPLE OF TABULAR FORMAT FOR SITE CONCEPTUAL EXPOSURE MODEL CURRENT CONDITIONS

Potentially Exposed Population	Exposure Route, Medium, and Exposure Point	Pathway Selected for Evaluation?	Justification for Selection or Non-Selection
On-site Commercial Worker	Inhalation (vapors & particulates) and dermal contact and ingestion of surficial soil	No	The site is paved, hence the surficial soil is inaccessible.
	Leaching to groundwater from surficial soil	Yes	Leaching of chemicals to groundwater is possible.
	Indoor inhalation of vapor emissions from subsurface soil	No	Subsurface soil below or adjacent to the building is not impacted.
	Outdoor inhalation of vapor emissions from subsurface soil	Yes	Vapor emissions from impacted soils and migration through cracks in cover is possible.
	Dermal contact and ingestion with subsurface soil	No	The site is paved, hence subsurface soil is inaccessible.
	Leaching to groundwater from subsurface soil	Yes	Leaching of chemicals to groundwater is possible.
	Indoor inhalation of vapor emissions from groundwater	No	The groundwater plume is not below or adjacent to the building.
	Outdoor inhalation of vapor emissions from groundwater	Yes	Vapor emissions from groundwater and migration through cracks in cover is possible.
	Ingestion of groundwater	No	There are no drinking water wells on-site.
Off-site Commercial Worker	Inhalation (vapors & particulates) and dermal contact and ingestion of surficial soil	No	Off-site surficial soil is not impacted.
	Leaching to groundwater from surficial soil	No	Off-site surficial soil is not impacted.
	Indoor inhalation of vopor emissions from subsurface soil	No	Off-site subsurface soil is not impacted.
	Outdoor inhalation of vapor emissions from subsurface soil	No	Off-site subsurface soil is not impacted.
	Dermal contact and ingestion of subsurface soil	No	Off-site subsurface soil is not impacted.
	Leaching to groundwater from subsurface soil	No	Off-site subsurface soil is not impacted.
	Indoor inhalation of vapor emissions from groundwater	Yes	Groundwater below the building is impacted.
	Outdoor inhalation of vapor emissions from groundwater	Yes	Plume has migrated off-site.
	Ingestion of groundwater	No	There are no drinking water wells at the off-site location.

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Washington State Department of Transportation
Sid Morrison
Secretary of Transportation

Transportation Building
P.O. Box 47300
Olympia, WA 98504-7300

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January 14, 2000

Ms. Trish Akana
Washington State Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Dear Ms Akana:

The Environmental Affairs Office and the Maintenance Office of the Washington State Department of Transportation (WSDOT) appreciate the opportunity to provide additional comments on the MTCA proposed rule amendment.

WSDOT wishes to restate its concern over the overly burdensome and unduly complex set of rules to address toxic conditions in the various environmental media. There is a proliferation of tables which summarize the rules for soil, ground water, surface water, terrestrial evaluation and air. This new complexity does not support a quicker, easier to use objective of the PAC. The explanatory publications published by Ecology the last six months have not provided this agency with assurances that the new rule can be understood and applied efficiently.

895 **Section 173-340-7490 through -7494, Terrestrial Ecological Evaluations,** present several concerns. It is not clear how to determine what level of site evaluation is required. Several reviewers reached different conclusions each time the proposed rule was read. Integration of this section with the rest of the rule is unclear. There are too few references in other parts of the rule showing how site-specific decisions can affect cleanup standards and remedy selection. For example, language in Subsection -350(8)(e) does not provide PLPs with direction on how the information generated through the ecological risk evaluation is to be used and interpreted. Language should be added to the rule to clearly identify key factors that should be considered when evaluating the results of an ecological risk assessment and the implications for potential remedies.

896 In general the exclusion of other than "native vegetation" in a site evaluation appears flawed. Also the evaluation process appears to discount the hydrologic connectivity of
897 ecological risk in the near shore environment. The requirement to conduct a terrestrial
898 evaluation probably will require liable parties to engage the services of biologists. This appears to increase the cost and complexity of site evaluations in contradiction of PAC guidelines. Applying this section will be difficult and costly. The proposed revisions will make it more difficult for PLPs performing independent cleanups to understand and

comply with the requirements of this section. Thus the proposed revisions will make it more time consuming and costly to get from discovery to cleanup; fewer independent cleanups will be conducted.

899 These sections of the rule should not be formally adopted until Ecology has received public comment on the Terrestrial Environmental Evaluation Pilot Study Report (11/99) results. Public comment is especially warranted because the pilot study participants were, in some cases, unable to reach consensus on rule interpretation. These sections should be adopted only after the public has been given adequate opportunity to review and provide comments on the pilot report. Furthermore, the pilot report did not apply the methodology for the site-specific evaluation to an actual site to develop site-specific cleanup levels or remedial action approaches. As such, the pilot study should be considered incomplete in terms of evaluating applicability and economic impact. In order for Ecology to fully evaluate applicability and economic impact, WSDOT recommends that Ecology adopt these sections as pilot rules prior to formal adoption. In addition WSDOT recommends that Ecology complete clear guidance prior to or within 3 months of formal rule adoption.

900 **Section 173-340-750, Cleanup Standards to Protect Air Quality**, is confusing. It is not clear how these cleanup standards are related to and comply with Labor and Industry standards for air quality protection. WSDOT was unable to find published Method A cleanup levels for air quality, nor any clear understanding how Method B/C levels are to be obtained. Complying with this rule may require a party considering an independent cleanup to retain the services of an industrial hygienist. This substantial additional cost does not appear to meet the intent of the PAC.

901 **Section 173-340-760, Sediment Cleanup Standards**, is impacted because Ecology recently (12/30/99) halted revisions to the Sediment Management Standards. Those revisions were to have included establishing freshwater sediment standards which were to incorporate aquatic ecological risk factors. While the water quality standards and marine sediment standards do to some extent incorporate environmental risk factors, there are essentially no regulations which require evaluation of ecological risk associated with contaminated freshwater sediments. This is a major omission, particularly in light of the recent ESA listings.

Should you wish to obtain any further clarification of our concerns and recommendations please contact Mike Stephens at 360 570-7256.

Sincerely,

Doug Pierce
Environmental Manager for Operations

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ENVIRONMENTAL MANAGEMENT, INC.

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Date: January 17, 2000

To: Ms. Trish Akana
Washington State Department of Ecology
c/o TCP Rule Revision
300 Desmond Drive
Lacey, Washington 98503

We have enclosed:

Copies	Description
2	MTCA Comments (1 color and 1 black & white)

For your:
- [x] Use
- [ ] Approval
- [ ] Review
- [ ] Information

Comments:

Ward Crell

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Page 1 of 1

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MTCA MISCONCEPTIONS

Comments on Proposed Amendments;
Chapter 173-340 WAC
November 1999 Draft

ENVIRONMENTAL MANAGEMENT, INC.

Introduction

Reviewer: Ward Crell

Affiliation: KHM Environmental Management, Inc.

MTCA Comments, Round 2

It's been a little over a year to date since the first MTCA Comment period and I feel a little bit like Bill Murray in the movie "Groundhog Day", commenting on proposed MTCA amendments over and over again with no apparent results.

902 The core components of MTCA are virtually unchanged from the original 1998 draft, despite pages and pages of comments that Ecology has received throughout 1999. Furthermore, Ecology did not adequately respond to valid comments which they received.

The end result is a set of environmental regulations that will increase cleanup costs, impede small business owners, and create unrealistic cleanup targets that do not effectively reduce risk to the environment.

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Real-World Business Impacts

903 As a whole, the revised MTCA Cleanup Regulation will:

- ✔ Increase cleanup costs 30% to 50%

904 ✔ Reduce the net profit of the average impacted independent petroleum retailer by approximately 15%

905 ✔ Increase UST insurance premiums for small business owners

906 ✔ Impede property transactions and depress the Washington small business economy

907 ✔ Hamper or eliminate all brownfield initiatives in the state

908 ✔ Overwhelm Ecology with requests for assistance from small business owners

909 ✔ Increase the reliance on specialized consultants to perform what used to be routine tasks

What Ecology did not do

910 During the multi-year revision process, Ecology failed to:

- ✔ Adequately envision the potential business impacts produced by stricter, more complex cleanup criteria

911 ✔ Streamline and simplify the cleanup regulations

912 ✔ Provide adequate response to the first-draft MTCA comments

913 ✔ Expend the resources to adequately review the transport model (Equation 747-1) nor explore the use of other proven models

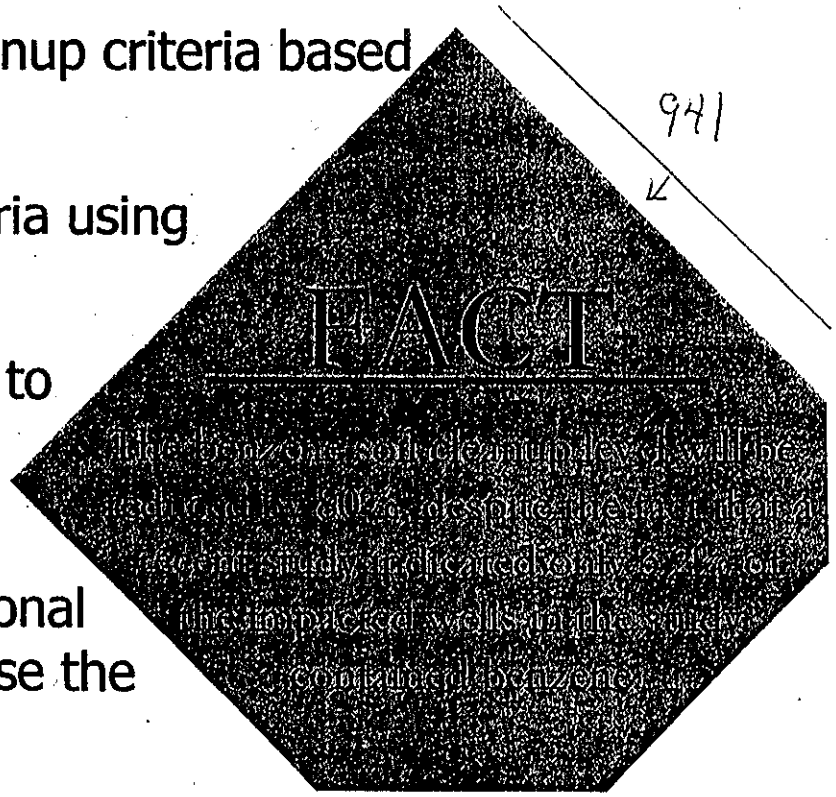
914 ✔ Adequately address risk and receptors in accordance with the ASTM "*Standard Guide for Risk-Based Corrective Action at Petroleum Release Sites*"

915 ✔ Apply and incorporate important findings from the Lawrence Livermore California LUST study

What Ecology did do

- ✔ 916 Prepared a poorly developed Small Business Economic Impact Statement that misses the real impacts and provides no backup data to validate the assumptions and conclusions
- ✔ 917 Developed a grandfather clause that provides little protection and leaves Ecology too much leeway for interpretation
- ✔ 918 Developed overly conservative cleanup criteria based on unrealistic receptor scenarios
- ✔ 919 Developed residual saturation criteria using wildly conservative criteria
- ✔ 920 Added another layer of regulations to address during cleanup (Terrestrial Ecological Evaluation)
- ✔ 921 Found more ways to apply institutional controls that will effectively decrease the value of property

941



Critical Issues

The items discussed below are but a few of the important issues that Ecology must address before the proposed regulations can be adopted.

- ✔ Ignoring the intent of HB 1810

922

  - The bill that led to the establishment of the PAC mandated that cleanup standards should "*be based upon generally accepted and peer reviewed...methodologies, reasonable assumptions of exposure scenarios...when or where those exposures will occur, and shall avoid the use of redundant conservative assumptions...*"
  - Ecology did not utilize a generally accepted model to develop Method A soil cleanup levels nor did they even attempt to have their methodology peer reviewed.

923

  - The assumptions that Ecology uses as to where exposures will occur are not consistent with ASTM RBCA guidelines. Requiring compliance "throughout the site" despite the fact that receptors may be miles away defies the logic used by any other risk-based guidance currently employed in the nation.

924

  - Ecology uses extremely conservative assumptions throughout the proposed regulations that reduces flexibility and is contrary to the intent of HB 1810.

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Critical Issues

925

- Disregard of numerous PAC recommendations
  - In a March 1997 document, Ecology stated that they were committed to carrying out the PAC recommendations to make "*the business of cleanups fairer, easier to understand, more flexible with less ambiguity, and less expensive.*" It doesn't take a close review of the proposed regulation to observe that Ecology failed on all counts.
  - The proposed MTCA modifications add complexity, adversely impact small business, and certainly increase cleanup costs.
  - Ecology needs to publicly address all PAC recommendations point by point to explain their rationale as to why they think they adequately responded to the PAC.

926

- Deterioration of negotiated rule making
  - Ecology did not follow its own goal to "reach consensus on the terms of a proposed rule" and chose to ignore input from the PAC and External Advisory Workgroup throughout 1998 and 1999.
  - It is unfortunate that Ecology allowed the work of a few individuals to dominate the process as demonstrated by the lack of responsiveness to the recommendations and comments submitted over the last two years.

Critical Issues

927 ✔ Ecology must demonstrate how they will meet the new demand for guidance on sites closed under former cleanup criteria.

- The grandfather clause [WAC 173-340-702(12)] will not meet the needs of lenders or UST insurance providers. These entities, along with prospective property purchasers will require a written opinion from Ecology that will protect them from liability.
- It is a virtual certainty that hundreds of these requests will be generated quarterly. Ecology must consider this issue and provide a plan to service this need.
- Failure to demonstrate a response plan will severely cripple the independent petroleum industry by halting real estate transactions and lending activities.

928 ✔ Future and current brownfield initiatives are jeopardized by the ambiguity of the grandfather clause as well as from the more conservative cleanup criteria.

Critical Issues

929 ✔ SBEIS: Inadequate relief for small business

- Since the proposed regulation changes will increase cleanup costs and disproportionately affect small business, RCW 19.85040(2)(a) requires a "statement of the steps taken...to reduce the costs of the rule on small businesses".
- The provisions that Ecology has provided for relief from undue impacts have little, if any, impact on small businesses. In fact, more than half of the 13 provisions already exist and have proven to be ineffective as regulatory relief measures for small businesses. A summary of these measures are discussed on Table 1.

930 ✔ Increased petroleum cleanup costs will result in increased UST insurance premiums

- Lowering significant soil cleanup levels will increase cleanup costs 30% to 50%.
- These costs will be passed along to all holders of UST insurance policies to cover the increased expenditures.

942

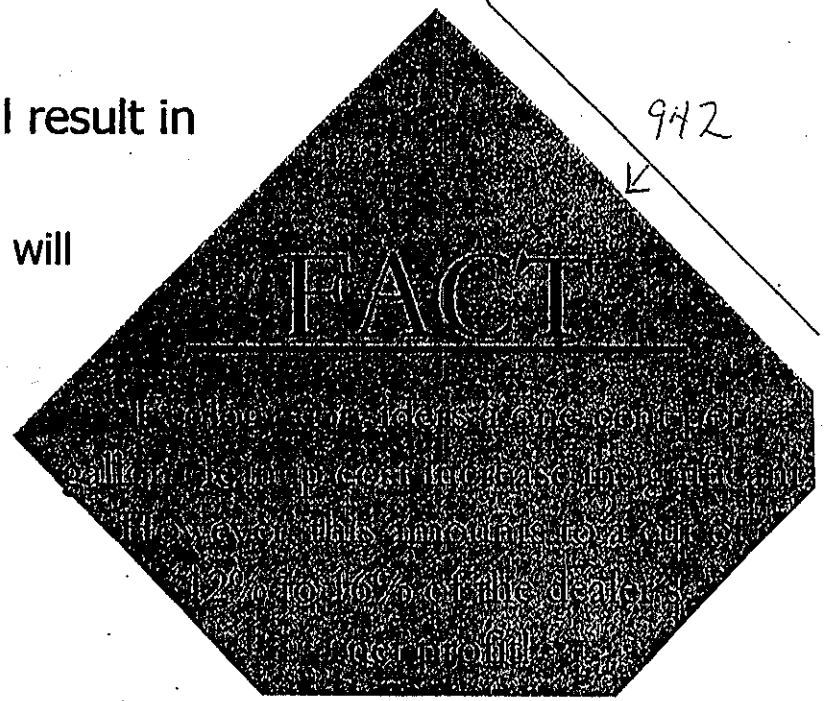

Table 1: Relief for Small Business

929 cont.

Regulatory Relief	Comment
Use of Remediation Level	No relief because due to stigma of Institutional Controls (ICs)
Area-wide points of compliance	Rarely applicable to small business and no relief because of ICs
Expansion of financial assurance mechanisms	No relief to small business, costs still increase regardless of how they're paid.
Use of Model Remedy	None exist, so no relief provided.
Provision for technical assistance	No relief because Ecology is understaffed has not demonstrated any method to achieve this goal.
Use of site-specific risk assessment	No relief as costs will increase to perform this work.
State Toxics Control Account	Extremely limited application and no funding of account – no relief
Resource sharing and PLP targeting	Limited application and virtually no relief for small business
Agreed Orders	No relief as the administrative process itself will add 30% to the cleanup cost.
Interim Actions	No relief because an end point is not reached and the property remains devalued.
Citizen Technical Advisor	No relief as this position will not have the resources to fully assist small business as needed.
Terrestrial Evaluation	Becoming exempt from a new requirement maintains status quo, but does not offer relief. Also ICs may devalue the property.

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Critical Issues

931 ✔ Section 173-340-747, Equation 747-1 is an inappropriate application of the model

- The model used here is overly conservative and does not accurately reflect soil-to-groundwater transport in many cases. In fact, there has been significant technical input from the Washington Pollution Liability Agency and others that has been ignored. This equation only focuses on one of five major mechanisms governing transport of a compound through soil to groundwater.
- Ecology has not completed a thorough review of this equation or these cleanup levels and they HAVE NOT been working in good faith with the PAC, PLIA, or others to ensure that the soil cleanup levels are based on good science and that they are fair and practical.

932 ✔ Section 173-340-747, Table 747-2 is not based on sound logic

- The screening levels for residual saturation are inappropriate because they are based on <u>using a coarse sand or gravel media</u>. Less than 1% of the affected media in the state is well-sorted gravel. Again this is a case where Ecology has taken an overly conservative approach and has developed a standard that has no application in the real world.
- Allow for the use of other media when evaluating residual saturation.

Critical Issues

933 ✔ Terrestrial Ecological Evaluation Procedures (WAC 173-340-7490)

- A new section has been added that will create another layer of criteria to be addressed before closure. This section currently contains language that can cause institutional controls to be placed on sites despite being in compliance with MTCA Method A or Method B cleanup criteria.

934

- To obtain exclusion using Table 749-1 under WAC 173-340-7492(2)(a), *"it is expected that this habitat evaluation will be undertaken by an experienced field biologist"*. This is another example where Ecology is adding to the cost and complexity of the regulations. In many cases, to gain exclusion for this new rule another specialized consultant must be brought in.

935

- A number of issues within this proposed rule have been incorporated in spite of PAC recommendations to conduct further study or review. This entire section should be used a guidance, not rule, until a significant number of issues have been addressed and resolved.

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Close

936 ✔ Ecology needs to RESPOND to all valid questions and comments derived from the last two MTCA drafts.

937 ✔ Ecology needs to enlarge their internal working group to eliminate the narrow focus that has developed over the last two years.

938 ✔ Real mechanisms need to be developed to provide relief for small business.

939 ✔ An independent, third-party review of the model used to develop Method A and Method B soil cleanup levels needs to be conducted.

940 ✔ Careful study of all business impacts associated with the much more conservative cleanup criteria needs to be undertaken.

Akana, Trish Alicia

From: overhead [httpd@www.wa.gov]
Sent: Tuesday, January 18, 2000 12:11 PM
To: taka461@ecy.wa.gov
Subject: ecology/tcp/regs/rule/rule_com.html form input

REPLY+TO: 173-340

FIRST_NAME: Marcia

LAST_NAME: Bailey

ORGANIZATION: US EPA

STREET_ADDRESS1: 1200 Sixth Avenue

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CITY: Seattle

STATE: WA

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943 SECTION: 708(8)

COMMENTS: 1) Toxic equivalency factors should be adopted for coplanar (dioxin-like) PCBs, in order to evaluate PCBs in the environment in the most scientific manner possible. It is also important to use the coplanar PCB TEFs because they are evaluated as 2,3,7,8-TCDD equivalents. When coplanar PCBs are not evaluated using TEFs, risks due to exposure to dioxins is underestimated.

944 2) Paragraph (d) proposes to adopt the EPA 1989 TEF methodology for dioxins and furans. U.S. EPA is likely to formally adopt the more recent (and generally considered superior) World Health Organization methodology for assigning TEFs to dioxins and furans. There are separate TEFs assigned for mammalian and non-mammalian species. It is recommended that Ecology consider adopting the WHO TEFs for humans and ecological receptors to reflect the best science available.

945 3) I agree with the proposed adoption of CalEPA TEFs for carcinogenic PAHs; their use should be incorporated into the Method A soil and ground water cleanup levels for cPAHs. (This is discussed at length in the POG comments to Ecology, to which I contributed.)

References:
Ahlborg, V.G.; Becking, G.C.; Birnbaum, L.S.; Brower, A.; Derks, H.J.G.M.; Feeley, M.; Golor, C.; Hanberg, A.; Larsen, J.C.; Liem, A.K.D.; Safe, S.H.; Schlatter, C.; Waern, F.; Younes, M.; Yrankeikki, E. (1994) Toxic Equivalency factors for dioxin-like PCBs. Chemosphere 28(6):1049-1067.
Younes, M. (1998) WHO toxic equivalency factors (TEFs) for dioxin-like compounds for humans and wildlife. Summary of WHO meeting held in Stockholm, Seden on June 15-18. World Health Organization, International Programme on Chemical Safety.

PROPOSED_LANGUAGE:

reply 34

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18 January 2000

Washington State Department of Ecology
c/o Toxics Cleanup Program - Rule Revision
P.O. Box 47600
Olympia, Washington 98504-7600

Subject: Comments Regarding Proposed Regulation Modifications to the Model Toxics Control Act - Chapter 173-340-WAC

Kennedy/Jenks Consultants is pleased to submit its comments regarding the November 1999 proposed changes to the Washington State Model Toxics Control Act (MTCA). These comments are provided as requested by Ecology in its 19 November 1999 letter soliciting comments on the proposed changes to the MTCA. General and specific comments are provided below.

GENERAL COMMENTS

946 1. We understand that it is Ecology's intent to rewrite the regulation so that it is easier to understand and provides for faster cleanups. One of Ecology's goals is to streamline the regulation in an effort to allow users to understand the cleanup process. As a consulting firm that uses the regulations to assist its clients, we find the latest revision to be complex and difficult to understand. It will be difficult for us to convey the process and meaning of the regulation to our clients given the complexities that have been added and cross referencing of various sections within the regulation. One of Ecology's major goals was to make the rule result in faster and less costly cleanups. The proposed rule is complex, will require PLPs to do more costly testing and analyses, and all of this will take more time. Ecology should review the regulation and modify it as appropriate for ease of understanding and to result in faster, less costly cleanups.

947 2. Regulation or guidance language needs to be provided to define what actions are necessary to provide for substantial compliance with MTCA for conducting independent remedial actions and in support of cost recovery actions under the Regulation. It is uncertain what specifically needs to be addressed in order to substantially comply with the regulation as written. For example, 173-340-515(3)(c) refers to several sections of the regulation and states that sufficient information must be included to serve the same purpose. The current MTCA section on independent actions does not reference specific sections of the regulation as needing to be considered in conducting an independent action. Previously, we are aware that Ecology has approved independent actions where the only information submitted was data to support confirmation that cleanup levels were achieved. These data did not include such data referred to in other sections of MTCA, such as complete investigation data typical of RI/FS studies,

Comments submitted by Fax on 1/19/00

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948 cont. remedy selection evaluations (including evaluation of permanence and other detailed evaluation criteria, etc.). Ecology's criteria for approving independent actions should be as it is today.

948 Similarly, clarification is needed for what is required for substantial compliance under private rights of action. Do specific evaluations (not title and format) need to be performed to accomplish a private right of action?

949 3. The revised regulation does not provide any information regarding the ability for a PLP to use Method A and/or Method B cleanup levels together on a particular site. Currently in Ecology Guidance (CLARC II Tables, page 5), Ecology allows for use of Method A default values when Method B cleanup levels are being evaluated for a particular site. It would be helpful to state Ecology's current policy in the Regulation.

950 4. Under Section VII - Cleanup Standards, it appears that Ecology is requiring evaluation of dermal and vapor exposure pathways when modified Method B or Method C cleanup levels are proposed for a site. The Policy Advisory Committee (PAC) Report did not anticipate evaluation of the dermal or other exposure pathways except in those cases where site-specific risk assessment provided for a "significantly" higher cleanup level. Currently, as the Regulation is written, any modification of default values under Method B or Method C may require consideration of the vapor or dermal exposure pathways. This was not the intent of the PAC. Guidance needs to be provided on what is "significant." One potential approach for Ecology to consider is to require assessment of other exposure pathways when cleanup levels increase by over an order of magnitude due to modified exposure parameters. This approach appears appropriate in that risk assessment procedures are conservative by nature and EPA practice is to consider risk assessment calculations no more accurate than an order of magnitude. The State of Oregon has recently adopted this approach in evaluation of "hot spots" under its revised cleanup regulations.

951 5. One of our primary concerns with the ecological evaluation is that, as written, many sites will require a Tier 3 evaluation (due to low screening levels in Tier 2), and that cleanup could be driven by ecological concerns. In turn, habitat could actually be destroyed through implementation of a cleanup action. Under these scenarios, it is questionable whether or not there is a net environmental benefit.

952 6. The impact of the regulations to sites where pesticides/herbicides are legally applied is uncertain and not defined in the proposed regulations. The Dangerous Waste Regulations exempt legally applied materials. What is the responsibility for contamination under MTCA in locations where these chemicals were appropriately applied?

SPECIFIC COMMENTS

953 1. **WAC 173-340-350(8)(b)** requires the PLP to seek Ecology's approval for alternatives that will be evaluated in the Feasibility Study. This is not consistent with current regulations and adds a burdensome extra step to the Feasibility Study process. How this requirement applies to independent cleanups and potentially affects substantial compliance considerations under private rights of action is also unclear. We suggest removing the sentence, "The department shall make the final determination of which alternatives must be evaluated in the Feasibility Study," from the proposed regulation. However, if this is truly a requirement of Ecology, then a section should be added that requires all feasibility studies performed under an administrative order with Ecology to undergo a preliminary review before the document can be finalized. The purpose of the preliminary review would be to gain Ecology's approval of the alternatives to be evaluated before the Feasibility Study is finalized. In this way, PLPs will not waste time and money writing a Feasibility Study that may require complete re-writing following Ecology review.

954 2. **WAC 173-340-350(8)(c)(i)(F)** states that the feasibility study shall include alternatives with the point of compliance throughout the site for each environmental medium containing hazardous substances and may include, as appropriate, alternatives for conditional points of compliance. This language implies that various alternatives, which include a point of compliance throughout the site, must be evaluated in the feasibility study. In certain cases, where contamination is widespread, it may be obviously apparent that achievement of cleanup levels throughout the site is not practical and that establishment of remediation levels would be appropriate. It would appear to be inefficient to evaluate a variety of alternatives with the point of compliance throughout the site during the feasibility study if sufficient information can be provided that shows that any alternative with a point of compliance throughout the site is impractical. Language to allow this demonstration should be provided in the Regulation language.

955 3. **WAC 173-340-350(8)(c)(ii)(A)** requires the identification of a "permanent" remedial alternative as a baseline alternative from which all other alternatives are evaluated. Section WAC 173-340-360(3)(c)(iii) requires an iterative process where the baseline alternative is compared to the other alternatives in a disproportionate cost analysis. While this process appears advantageous, it is not clear how Ecology plans to implement this cumbersome approach. As with other changes to the feasibility study process made in this MTCA revision, it further complicates an already confusing analysis approach. We suggest that Ecology streamline the cost/benefit comparison approach by eliminating the requirements of WAC 173-340-360(3)(c)(iii).

956 4. **WAC 173-340-350(9)(e)(ii) and WAC 173-340-440(5)** state the cleanup action shall not rely primarily on institutional controls and monitoring where it is technically possible to implement a cleanup action alternative that utilizes a more permanent cleanup action for all or a portion of the site. We believe it is Ecology's intent to have PLPs look at alternatives that not only include permanent solutions but also containment. Therefore,

the use of the term "a more permanent cleanup action" is inappropriate, since containment may not be construed as a permanent solution. Also, the term "technically possible" is inappropriate in that almost anything is technically possible if enough money is spent. The term "practical" should be substituted for "technically possible."

957 5. **WAC 173-340-350(9)(g)** indicates that cleanup actions shall not rely primarily on dilution or dispersion unless the incremental cost of any active remedial measure over the cost of dilution and dispersion closely exceed the incremental degree of benefits of active remedial measures over the benefits of dilution and dispersion. Does Ecology consider natural attenuation as an active remedial measure or relying primarily on dilution and dispersion? This section should be clear regarding whether natural attenuation can be demonstrated as an appropriate remedial measure that does not rely primarily on dilution and dispersion.

958 6. **WAC 173-340-350(11)(b)(i)** does not include a disproportionate cost test as a method to establish remediation levels. If it can be demonstrated that the cost of cleanup to a cleanup level is so disproportionate to the benefit achieved, then this should be a method to establish a remediation level. This should be added to the methods of establishing a remediation level.

959 7. **WAC 173-340-360(11)(b)(ii)** indicates that a cleanup action can include a remediation level if it is determined that a permanent cleanup action is not practical and that it is determined that the remediation levels are protective of human health and the environment. This language implies that if a remediation level is developed through the disproportionate cost test, a human health and ecological risk assessment may be necessary to evaluate residual risk. Within this subsection of the Regulation, it appears that Ecology wishes the risk assessment to use approaches defined under Sections 702 and 708 of the proposed regulation. However, the risk assessment procedures are not clear regarding how the use of a cap or other containment facility potentially impacts exposure pathways. Is it Ecology's intent to eliminate the ingestion and dermal contact pathways should a cap be proposed in the determination of residual risk? As written, it would seem that the proposal of a remediation level requires that a residual risk assessment be performed. An appropriately designed and constructed cap with appropriate maintenance and institutional controls should eliminate these exposure pathways; however, the risk assessment procedures referred to in the Regulation do not allow consideration of the cap in conducting the risk assessment. If typical MTCA risk assessment methodology is used, and if a remediation level is not considered protective for the ingestion or dermal pathways, it would appear that establishment of remediation levels can only be accomplished through conduct of a site-specific risk assessment. This is not appropriate since cost is factor in remedy selection; thus it should be a factor in establishing remediation levels, which are established for combining remedial technologies to address the worst site problems with the most aggressive management strategies.

960 8. **WAC 173-340-350(12)(g)(5)** provides for how protectiveness of a remediation level is established for soil ingestion at commercial gas stations. Should commercial gas stations be defined in the Regulation? In addition, many other commercial sites fit the potential exposure profile that would be encountered at a commercial gas station (e.g., an auto repair shop and other service businesses for retail purposes). It would appear to be appropriate for Ecology to expand the definition under this subsection to include other activities where this exposure scenario is anticipated.

961 9. **WAC 173-340-360(3)(a)(ii)(A)** indicates that a disproportionate cost analysis is not necessary if "the incremental costs of a permanent alternative over that of the lower cost alternatives are not substantial." This section should provide some guidance regarding the definition of "substantial." Does substantial mean within an order of magnitude or within a 20 percent cost difference?

962 10. **WAC 173-340-390** indicates that Ecology may develop model remedies from time to time. We suggest that Ecology establish the criteria by which model remedies will be evaluated in this draft regulation change. We also suggest that stakeholders be allowed to make suggestions for model remedies and be involved in Ecology's process for selection of model remedies. Finally, we suggest that Ecology include any know Model Remedies that could be considered for use.

963 11. **WAC 173-340-410(1)(c)** identifies the need for confirmational monitoring following completion of a remedial action. This section should include the specific requirements for confirmational monitoring or cite an appropriate guidance document that identifies Ecology's expectations in this area.

964 12. **WAC 173-340-440(6)** states that institutional controls shall be evaluated based on quantitative, scientific analysis where appropriate. It is difficult to quantify the benefits of institutional controls, and typically they are used to address lesser risks. The costs of attempting to quantify the benefits of institutional controls do not outweigh the benefits of such an analysis.

965 13. **WAC 173-340-440(11)** requires financial assurances from PLPs sufficient to cover all costs associated with operation, maintenance, and cleanup action. There will be some cases where financial assurances may not be necessary, and Ecology should provide flexibility in evaluating where financial assurances are appropriate, other than a demonstration of financial hardship.

966 14. **WAC 173-340-700(5)** - As discussed in *Model Toxics Control Act Cleanup Level and Risk Calculations* (CLARC II Tables, page 5), this section should identify when and how mixing of MTCA Method A, B, and C cleanup levels will be allowed.

967 15. **WAC 173-340-700(6)(d)** indicates that cleanup levels shall not be established at concentrations lower than the PQL. Is Ecology still using Implementation Memo No. 3 to identify method PQLs? We suggest that Ecology establish a database that

summarizes the acceptable PQLs for the different analytes and different media (i.e., soil, water, and air).

968 16. **WAC 173-340-706(1)(b)** states that Method C soil cleanup levels may only be established for industrial properties. It is unclear why Method C has been established for surface water, groundwater, and air but not for soil at unrestricted land use sites. There will be many cases where Method A or B cleanup levels for soil are below technically possible concentrations and, thus, an entire site may require remediation (especially in areas where areawide contamination exists within urban areas). If Ecology anticipates that PLPs can establish remediation levels for unrestricted land use soil cleanup levels, the comments previously provided (Specific Comment 7) regarding the need to conduct a site-specific risk assessment to establish the protectiveness of remediation levels is of concern, especially if Ecology requires assessment of dermal and ingestion exposure pathways under their risk assessment procedures.

969 17. **WAC 173-340-709(4)** should also identify methods for establishing natural background concentrations in groundwater. This approach should include well locations and the approximate number of wells necessary to identify background conditions. Use of soil sampling procedures is not practical for groundwater.

970 18. **WAC 173-340-720(1)(d)(v)** indicates that if groundwater is flowing into a "nearby" non-potable surface water body, surface water standards should be used to evaluate the need for cleanup. Under this section, how is "nearby" defined?" In addition, this section allows the use of surface water standards in WAC 173-340-730 for non-potable groundwater flowing into a surface water body. Ecology uses Harbor Island in Seattle as an example where non-potable surface water discharges to Puget Sound. The surface water standards include several criteria, including Method B surface water cleanup levels, surface water quality standards (WAC 173-201A), and the National Toxics Rule. In many cases, these surface water criteria are lower than EPA maximum contaminant levels (MCLs) or Method B groundwater cleanup levels. Just a few examples would be for 1,1-dichloroethlylene, carcinogenic PAH compounds, arsenic, copper, lead, and zinc. It seems unreasonable to require non-potable groundwater from beneath an industrial zoned site that flows to non-potable surface water to have more stringent standards than we expect for the potable water we consume on a daily basis, especially if the groundwater input to surface water does not cause a violation of water quality standards. We agree with the intent of the regulation (to develop cleanup standards that are protective of the intended use of the water) and suggest that the language in the revised Regulation be modified to meet this intent.

971 19. **WAC 173-340-720(2)** this section indicates that groundwater shall be considered a drinking water source unless certain criteria can be demonstrated. The implication is that if these criteria were met, the water would be considered a non-potable water source. However, this section does not specifically say this is the case. We suggest that additional language be added to specify the classification of groundwater meeting these criteria.

972 20. **WAC 173-340-720(2) (c)(iii)** section indicates "The likelihood of inter-connection between the contaminated ground water and the ground water that is a current or potential future source of drinking water due to well construction practices in the area of the state where the site is located." It is unclear what role regional well construction practices have on identifying the likelihood of inter-connection. We suggest that Ecology identify more defined procedures based on hydrogeologic principles for evaluating the potential for inter-aquifer communication. These procedures are necessary to develop consistency in application of this section.

973 21. **WAC 173-340-720(5)** this section discusses the use of Method C groundwater cleanup levels for drinking water not flowing into nearby surface water. However, the section (or prior sections) does not specifically identify when Method C groundwater may be used at a site. We suggest Ecology modify this section to include the circumstances when Method C groundwater cleanup levels can be used.

974 22. **WAC 173-340-720** - In section WAC 172-340-200, the term "natural attenuation" is defined. However, Ecology does not provide criteria for how natural attenuation may be applied to sites. We recommend that Ecology publish criteria in this Regulation on how monitored natural attention may be applied to sites. What criteria are necessary to demonstrate that this technology meets the requirements for being a permanent solution? Can PLP's demonstrate to Ecology that monitored natural attenuation meets the requirement of AKART? What criteria are needed to make this demonstration to Ecology?

975 23. **WAC 173-340-720(9)(c)** requires the PLP to demonstrate that it is not practicable to meet cleanup levels throughout the site within in a reasonable time frame when establishing a conditional point of compliance. This change is more restrictive than the current MTCA and could preclude the use of a conditional point of compliance at some sites. We suggest that this language be removed from this MTCA revision and that the PLP be allowed the option of meeting cleanup levels throughout the site or at a conditional point of compliance if it is impractical to meet cleanup levels throughout the site. The restrictions placed on a conditional point of compliance would not change and are adequate to deter most PLPs from using a conditional point of compliance.

976 24. **WAC 173-340-720(9)(c)(G)(ii)** states that if contamination has not reached surface water, then the conditional point of compliance cannot extend beyond the current extent of groundwater contamination. This is not practical. If it can be shown that contamination will move somewhat but will never reach surface water, then forcing expensive hydraulic control will accomplish nothing. This provision should be removed and PLPs should be forced to demonstrate that remedial actions will be protective of public health and the environment.

977 25. **WAC 173-340-730(4)** this section discusses the use of Method C surface water cleanup levels. However, the section (or prior sections) does not specifically identify when Method C surface water cleanup levels may be used at a site. We suggest

Ecology modify this section to include the circumstances when Method C surface water cleanup levels can be used.

978 26. **WAC 173-340-740(6)(f)** indicates that cleanup actions selected that involve containment must be subjected to a site-specific human health risk assessment that demonstrates that the cleanup action is protective. As with Specific Comment No. 6 above, this section does not discuss the procedures for performing a risk assessment and whether the risk assessment will consider the presence of a containment system in evaluating residual risk. This issue is especially important in considering cleanup actions such as containment based on remediation levels developed through a disproportionate cost test analysis, rather than a site-specific risk assessment. As previously indicated, if Ecology intends to allow elimination of the dermal and ingestion exposure scenarios if a cap is properly designed and maintained, then this issue is of less concern. However, if a risk assessment that considers these exposure routes is intended, this would imply that the only method for establishing a remediation level would be through a site-specific risk assessment. The most telling example of how this could be of concern is where a remediation level developed under the disproportionate cost analysis was found not to be protective (using standard default risk assessment procedures that consider ingestion and dermal contact). This would essentially disallow use of the disproportionate cost analysis to develop remediation levels.

979 27. **WAC 173-340-747(4)(b)(vii)(B)(ii)** discusses limitations on infiltration rates for sites west and east of the Cascades. The infiltration estimates of 70% of the average annual precipitation west of the Cascades and 30% of the average annual precipitation east of the Cascades is excessive and not reflective of site-specific conditions which may limit infiltration. Definition of this parameter should be based on best professional judgment based on site-specific conditions, which could predict the expected infiltration rate.

980 28. **WAC 173-340-747(5)(b)/Table 747-2** - Ecology provides residual saturation levels that may be used as empirical evidence to demonstrate that groundwater will not be impacted by hydrocarbons. These values are overly conservative for most soil conditions. Instead, the screening levels should be based on soil types (silts/clays, sand, gravel) in accordance with documentation provided in the American Petroleum Institute (API) publication No. 1628.

981 29. **WAC 173-340-7490(4)** indicates that the point of compliance is established at 15 feet below grade. This is justified by Ecology as "a reasonable estimate of the depth of soil that could be excavated and disturbed at the soil surface as a result of development activities." We disagree that 15 feet below grade represents a reasonable estimate of the depth of soil disturbance resulting in exposure to ecological receptors. Under the majority of development activities, soil from 15 feet below grade will not be brought to the surface and left, thereby exposing ecological receptors. If an excavation is created, the spoils are typically used for backfill. This is an economically driven fact of construction. We suggest development of a more scientifically based point of

compliance based on real construction practices and the habits of potentially exposed ecological receptors (i.e., the biologically active zone).

982 30. **WAC 173-340-7491(1)** - We recommend that all industrial zoned properties are conditionally exempt from ecological exposure analyses/cleanup requirements identified in sections WAC 173-340-7490 through 7493. These are areas that the government has designated for industrial use, not for propagation of ecological organisms. Other sections within MTCA and other state and federal regulations provide adequate protection for ecologically sensitive areas (i.e., water bodies, wetlands, etc.). Imposing these regulations on industrial properties puts an excessive burden on the industry without providing significant ecological benefit.

To demonstrate the potential impacts of this section, Ecology could consider areas such as a grass strip of land (1.5 acres of contiguous property) between two runways at an airport as qualifying for a terrestrial evaluation. While this area may have plants growing on it or earthworms in the soil, it should not warrant ecologically driven cleanup under MTCA regulations.

983 31. **WAC 173-34-7492(2)(c)(i).** The reference to Table 7 should be changed to Table 749-2.

984 32. **WAC 173-340-7493(1)(c)** states that planning elements must be done in consultation with and approval of Ecology. How do these consultations occur on independent cleanup sites?

985 33. **WAC 340-750** - Under this section, indoor air quality cleanup levels at industrial sites should be based upon OSHA/WISHA standards and not on risk assessment exposure models. This is consistent with applicable requirements.

986 34. **WAC 173-340-750(1)(a)(iv)** states that air standards apply and must be addressed at "other sites as determined by the Department." How does the Department intend to select which sites must be evaluated for potential air quality impacts?

987 35. **WAC 173-340-830** references appropriate test methods, including dates of current documents. It seems the approach used in the current rule, which references updated revisions or amendments that may be issued in the future as applying, should be retained in the revised rule.

988 36. **Table 749-2** In many instances, these values are lower than MTCA Method A or B soil cleanup levels to protect human health. This means that ecological exposure could drive cleanup at sites not otherwise required to address minor soil impacts. For example, the proposed Method A soil cleanup level for diesel range hydrocarbons at a residential site is 2,000 mg/kg. However, the soil cleanup level for diesel to protect ecological receptors (even at an industrial zoned site) is 200 mg/kg. We suggest that Table 7 values be re-evaluated so that ecological effects do not drive a soil cleanup action based solely on theoretical impacts to ecological receptors.

989 37. **Table 749-2** - The priority contaminants of ecological concern (Table 749-2 under the simplified terrestrial ecological evaluation procedure) present screening levels for various metals and organics. Under the 3-tiered approach being proposed by Ecology for evaluating terrestrial ecological impacts, it appears that many sites will require evaluation using Tier 2, and thus will require screening in accordance with the Table 749-2 values. For several contaminants which are ubiquitous in the environment and/or elevated due to their typical presence in urban areas, many sites will not be able to achieve the screening levels and will be required to conduct a Tier 3 evaluation. (Due to difficulty in meeting initial screening criteria under the "exposure" and "pathway" analyses under WAC 173-340-7492, few sites will be excluded through these mechanisms.) Chemicals of particular concern that we have seen in much greater concentrations (including residential areas in urban settings) include copper, magnesium, manganese, lead, and zinc. At many sites, particularly in the vicinity of highways and heavily traveled roads, zinc and lead concentrations are well in excess of even the industrial or commercial site screening levels indicated in Table 749-2. It seems ironic that many of the stormwater control alternatives that are being implemented to address roadway runoff include construction of detention basins or swales, which in turn attract wildlife and are seeded with plants to facilitate filtering of contaminants in runoff. Other screening levels of concern in Table 749-2 include TPH concentrations, which essentially are the same as current Method A cleanup levels under MTCA. It would seem that the screening levels discount much of the work of the POG, which has worked hard with Ecology to develop reasonable cleanup levels for TPH contamination to protect human health. As it appears that many sites will require evaluation using Tier 2, many sites may require continued evaluation through Tier 3 due to petroleum contamination. Is significant information available to assess ecological effects associated with TPH concentrations greater than the screening levels in Table 749-2.

990 38. **Table 749-2 and WAC 173-340-7492(2)(c)(i)** – The proposed rule states that if no value is listed, then the requirements of (c)(ii) must be met, which includes requirements to perform bioassays. Where there is a value for "unrestricted land use," that same value should be able to be used for "industrial or commercial site." Thus, the unrestricted land use value should be able to be used as a screening level with higher values being acceptable if demonstrated through bioassay testing.

Several chemicals with no value listed for any land use scenario include ubiquitous chemicals in urban environments such as bis(2-ethylhexyl)phthalate, acenaphthene, silver, manganese, magnesium, and antimony. Under the proposed rule, PLPs would have no choice except to conduct bioassays, which will be burdensome and time-consuming.

991 39. **Table 749-3** - Many of the same issues associated with the comments regarding Table 749-2 above apply to the information contained in Table 749-3 regarding ecological indicator concentrations for protection of terrestrial plants and animals. While we understand that these levels do not represent actual cleanup levels, the

values presented are problematic and will require many sites to conduct extensive ecological evaluation where onsite concentrations exceed these values. As previously indicated, we question what data are available that may lead to selection of a defensible cleanup level under the Tier 3 evaluation process.

992

40. **Table 830-1** provides information regarding required testing for petroleum releases. It would be helpful for Ecology to reference the specific analytical methods required to analyze for various fuel additives (i.e., EDB, EDC, various fuel oxygenates, and octane boosters). The proposed testing scheme required for all petroleum releases is significantly different than current practice on TPH release sites, and we question the value of requiring all sites to go through the designated testing regime. The Regulation should provide flexibility in defining which tests are required based on historical information that is available on each particular site.

We appreciate the opportunity to provide these comments to Ecology and are willing to discuss our comments with you at your convenience. Should you have any questions regarding the information contained herein, please feel free to call us at (253) 874-0555.

Very truly yours,

KENNEDY/JENKS CONSULTANTS

Ty C. Schreiner
Senior Hydrogeologist

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TCS/NAG:nld
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KLUCK LAW OFFICES, PLLC

January 18, 2000

Department of Ecology
c/o TCP Rule Revision
POB 47600
Olympia, WA 98504-7600

RE: Comments on MTCA Proposed Rule Amendments

Dear Sir or Madam:

Enclosed please find my comments on the MTCA proposed Rule Amendments published in November 2, 1999 State register.

I submit these comments as one of the board members who worked on the drafting of Initiative 97 which became MTCA, and as a former government superfund and hazardous waste attorney with 15 years of experience in cleanups at over 50 federal and state cleanup sites.

993 I would first urge the department to extend the comment period for this regulation to allow for more meaningful comment. This is the most important rulemaking in this program since the publication of the initial rules. The regulation itself extends in normal typed format to exceed five hundred pages of some extremely intricate and complicated material. While a 60-day comment period has been provided, it must be noted that this period extended over the Thanksgiving, Christmas, and New Year Holidays, and encompassed five federal holidays. It would be hard to find a time period more likely to minimize public participation. (And I understand this is not the first rulemaking in this program to be so positioned.) Given the profound impact this regulation is going to have on the program, the public and the environment, I believe it only just and fair that the comment period be extended another 60 days to allow those without professional staff and directly implicated economic incentives to participate on a par with those who do.

994 I was greatly disturbed in the rulemaking itself by the diminishing role of public participation the department envisions in MTCA. It seems the Department is viewing public participation more as an inconvenience than a meaningful and necessary part of any cleanup decision.

995 I would also add that I am gravely concerned about the lessening stringency for groundwater cleanup standards for the type A method for lead, ethylbenzene, toluene and xylenes. The science on all of these compounds is showing they are more toxic than originally thought. Lead for example has been clearly demonstrated to have no safe exposure limits. All lead exposure results in neurological damage. There is no safe threshold. It's effects are cumulative and permanent. Similarly the forementioned solvents are also being found to cause previously unrecognized neurological damage in ever smaller exposures. It makes no sense to be lessening these standards while the science is marching

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Comments submitted by fax on 1/18/00

in the contrary direction. This seems more a result of lobbying pressure than science.

Thank you for your time and consideration. I hope you will consider these comments and allow greater participation of concerned citizens whose time to participate has been greatly circumscribed by extending this period over the holidays.

Sincerely,

Roger E. Kluck

Roger E. Kluck
Attorney at Law

sent previously by fax
& e-mail

Comments on the MTCA Proposed Rule
of November 2, 1999
by Roger E. Kluck

996 On a broad conceptual basis I am disturbed by the Department's ever diminishing view of public participation. Public participation in all cleanups is essential. Hazardous substances by their very nature pose serious threats to human health and the environment. Communities and the public at large need to have meaningful prior notice and opportunity to participate in all cleanups in their community.

997 Also I would note that the lessening stringency for groundwater cleanup standards for the type A method for lead, ethylbenzene, toluene and xylenes is contrary to the latest science. The science on all of these compounds is showing they are more toxic than originally thought. Lead, for example, has been clearly demonstrated to have no safe exposure limits. All lead exposure results in neurological damage. There is no safe threshold. It's effects are cumulative and permanent. Similarly the forementioned solvents are also being found to cause previously unrecognized neurological damage in ever smaller exposures. It makes no sense to be lessening these standards while the science is marching in the contrary direction.

998 **173-340-100** The regulation provides in a note That: "all materials incorporated by reference in this chapter shall be available for inspection in Olympia. These materials should all be made available on line. If they are worthy of inclusion by reference they should be readily available to the public without a trip or request to Olympia.

999 **173-340-300(2)** Release reporting based on the "may be a threat" language is an invitation to avoidance. A clear absolute standard is necessary, both to encourage reporting and to make for meaningful enforcement for failure to report. I recognize this phrase comes from the statute, but the department has ample authority to define or determine that a release is a threat.. there is nothing in the statute that demands that the threat determination be made by the party responsible for the release. And common sense would dictate that the determination not be left to the responsible party.

Release of hazardous substances is a per se threat to human heath and the environment. Leaving it up to individual to decide what is a threat is unenforceable. Similarly the reporting function should be required of remedial contractors or environmental auditors also. If it is reported to the owner/operator and not reported with in a given time period, then the contractor should have a duty to report: Far too many substantial releases go unreported. and under this vague provision intentional failures to report would be unenforceable.

The word "encourage" in 2(a)(3) should be changed to "required" And the list in 2(b) is an invitation to exercise individual judgment against reporting.

1000 **173-340-20** Terrestrial receptors definition would seem to ignore birds or many species of birds in any case, which in many areas will be the principle or major receptors.

I question too if the regulations then pay attention to aquatic and marine receptors (as they are undefined. There are numerous aquatic sites in WA.

Similarly "Wildlife" excludes fish. What is the justification for this? Why are marine birds and mammals covered as wildlife, but not fish? And what is the justification for limiting wildlife only to vertebrates?

1001 **173-340-300(5)** The clear language indicating that IRAs and reporting releases do not release parties from liability is deleted, and similar replacement language of equal clarity is not found elsewhere. This may imply that liability may be affected by such acts.

1002 **173-340-310(5)(d)(iii)** – The optional nature of the notice is unacceptable. Notice should be mandatory. There is a disturbing trend throughout this package to delete, minimize or make optional public notice and participation. This is extremely disturbing and quite possibly illegal. It clearly violates the department's own administrative principles as set forth in 173-340-130. Similarly leaving the notice requirement up to the owner/operator increases the likelihood that notice will be inadequate, concealed or minimized.

1003 **173-340-310** Notice under this provision should not be limited to PLP. Notice should also be given to local governments, tribes and the public concurrent with PLP notification.

1004 **173-340-320(5)** Guidance referred to in this section (as with all guidance documents should be available via the Department's web site.

1005 **173-340-330(7)** An additional requirement should be added for removing sites from the HSL, requiring that all use restrictions, deed notifications etc, have been accurately recorded with the deeds with the County recording office, with **certified** copies in the Department files for confirmation.

1006 **173-340-340(2)** There should be a comma between "timely request" and "to the media". The request referred to is to the Dept. not the media. The deletion of the "and" creates confusion on this point.

1007 **173-340-350(2 through 4)** – These sections need to make it more explicit that except for interim and emergency measures persons conducting IRAs need to prepare RIs and FSs. The "may" in section (3) is too weak and ambiguous. IRAs should follow the federal model where independent cleanups must be consistent with the NCP **(including public participation requirements)**.

1008 **173-340-350(7)(b)** regarding scoping under the RI should explicitly include identification of legally applicable and relevant and appropriate requirements under 173-340-710(3) and (4) also. As written, the section only requires identification of applicable laws under

710(1). Early identification of these ARARs to the public is vital. Failure to identify them in a timely way creates the impression the agency is trying to "hide the ball" and deprives the public of essential information in vital parts of the process.

1009 Once again section 4 requires a report on conclusions of the RI/FS **ONLY** for departmental cleanups, or those under order or decree or order. This once again negates the public interest in IRAs and encourages their use as a mechanism to avoid public awareness.

1010 **173-340-350(7)(c)(iii)(E)** should include an evaluation of likely future development in the area in addition to the present and proposed land use and zoning for the site. It must be acknowledged that Washington's and particularly western Washington's population is growing at an astounding rate. It is apparent that many areas currently zoned for rural or industrial use will be put to residential uses in the foreseeable future.

1011 **173-340-350(7)(c)(iii)(F)** – The proposed change to this section is quite disturbing. From consideration and evaluation of "natural resources and ecology" the proposal is to narrow this consideration to only "terrestrial ecology'. At a time where numerous fisheries in the state are in grave peril, numerous sites impact directly on aquatic and marine systems, and in fact more and more marine sites are being identified, this disingenuous narrowing is incredible. All the more so given that with the definition of "terrestrial ecology" narrows this down to plants and animals that live primarily or entirely on land, eliminating many estuarine, marsh and aquatic plants and animals, and potentially excluding many birds. On top of this "wildlife" used in this section is limited to vertebrates (excluding fish).

While specific mention to the new terrestrial ecology process is perhaps desirable, and aquatic receptors are referred to in 350(8)(c), the deletion of the broader environmental consideration in this RI list is not appropriate.

1012 **173-340-350(9)(g)** - The word "primarily" should be deleted in the phrase, Cleanup actions shall not rely **primarily** on dilution and dispersion, unless . . ."

1013 **173-340-350(10)(d)** The language in this new section represents a substantial and unacceptable weakening and dilution of the previous affirmative statement of priorities in the current WAC 173-340-360(4). What was an affirmative requirement for consideration (note the shall) for all cleanup choices has been diluted to be a near meaningless discretionary "guide" that "may be used". Also, instead of being a requirement in the consideration of all cleanups, it has been improperly subsumed now to a possible consideration under long term effectiveness. Also existing 173-340-360(5)(d)(vi) mandated that the first three of the existing priorities be given preference absent some overriding consideration and existing 173-340-360(4)(c) required cleanups to maximize use of higher preferences technologies. Now the required priorities are a mere guide which may be used. This is appalling.

This may reflect perhaps the greatest weakening of existing authority and standards of this entire rulemaking (which is considerable). With this change there is no longer any mandatory ranking or preference of remedies, and the entire selection process has become discretionary. It is inevitable that such broad discretion will be abused to the detriment of the public and the environment.

1014 **173-340-350(8)(b)** Screening of alternatives in the FS. This section provides that "The Department shall make the final determination of which alternatives must be evaluated in the feasibility study. The following . . . alternatives or components may be eliminated ***from*** the FS . . ." While full consideration and evaluation obviously should be reserved for only workable remedies, this language can be read to mean that no discussion of the elimination of the remedies need be provided to the public or PLPs. The public and PLPs deserve a rationale and basis for the elimination of alternatives and components of remedies that may have been proposed or discussed in public hearings or comments.

A better solution would be to say the FS may eliminate these alternatives and components ***from full evaluation*** based on the following criteria . . . The analysis supporting this decision should be a required part of the FS.

1015 **173-340-390** The provisions authorizing model remedies leave many questions unanswered. What is the public participation process in the development of model remedies? Will these model remedies go through a general RI/FS process or will they be developed by regulation? Will the decision to implement a model remedy at a particular site be open to public notice and comment, and in what context?

1016 While the concept of model remedies can be a very desirable one, assuring that more money goes into actual cleanup than study, evaluation and comparison of alternatives, it is imperative that model remedies select a high standard of environmental and human health protection and a greater emphasis on permanence than typical Departmental remedy selections. In addition, some of the cost savings should be recaptured in higher levels of protectiveness and permanence.

1017 **173-340-515(2)(b)** Independent remedial actions – This sections states that a party may conduct an IRA on a site after commencement of negotiations or discussions when "reasonable notice has been given to the department. This is far to vague to be meaningful and will certainly result in litigation. What constitutes reasonable notice in this context should be clearly defined, preferably by a specific time period or prior notice.

1018 IRAs should include a requirement for public participation. Note 173-340-120 (9) has limited public participation to only sites with Departmental action. Communities surrounding areas with releases have valid needs for notice and comment and public participation in IRAs also. This limitation makes a mockery of Administrative principle 173-340-130(4). IRAs should follow the same procedural process of RI/FS with availability to the public. Otherwise, they become a tool to avoid agency and public knowledge and circumvent the goals of the act.

Similarly local governments and agencies should be notified of all remedial actions in their jurisdiction in all instances, including IRAs, not just when the Department is involved, as now proposed in 173-340-130(7). Ecology is overworked and overextended with a backlog on IRAs and is facing staffing cuts. Ecology's failure to process or review an IRA does not mean it is without concern. Requiring notice of IRAs to local government also would assure that community concerns can be addressed when present.

1019 **173-340-400(6)(c)** The proof of institutional controls should required ***certified*** copies of the recorded documents, not just copies. Certified copies will assure that the documents are actually recorded and accurate

1020 **173-340-400(7)** This provision provides no guidance to aid in the decision of when differences in the cleanup action plan are substantial enough to require public notice and comment. This should be spelled out in more detail. Examination of EPA provisions on amended ROD requirements and Explanations of Significant Difference should be examined for criteria and considerations. There is absolute unfettered departmental discretion in this provision as drafted which will eventually lead to abuse.

1021 **173-340-410(2)** What is the justification for allowing an exemption from the requirement for a monitoring plan for compliance monitoring? Again the departmental discretion here seems excessive and open to abuse. And again the absence of a monitoring plan, cheats the public of a valuable document to participate and evaluate progress on the site.

1022 **173-340-420(3)(e)** This provision should be amended to include more effective technologies or remedies in addition to more permanent ones.

1023 **173-340-420(3)(f)** There is no need to include the language concerning institutional controls. This changes the meaning of this review criterion substantially from reviewing site and resource uses, to one of seeking to address issues raised by this review first and foremost through institutional controls. This is unduly limiting and unnecessary. If the Department finds issues concerning site or resource uses, they are free under normal amended remedy process to consider institutional controls in their normal examination of remedy components. The last underlined clause should be deleted. It is not a review criterion.

1024 **173-340-515(2)(b)** – The existing language concerning reasonable notice should be clarified to define a specific time frame to determine what constitutes reasonable notice. The existing language is vague and nonspecific and bound to create problems.

1025 **173-340-515** Independent remedial actions. The regulations require notification within 90 days of completion of the IRA. Prior notice before actions are taken should be seriously considered. There is no limitation on the size of problem or seriousness of environmental or health threat that can be addressed through an IRA. It appears even high priority sites on the HSL can be managed by an IRA, with no notification necessary to the Department until 90 days after the cleanup is complete.

This can pose a number of quite serious problems. Very serious threats to the public health and environment may be dealt with in dangerous or inappropriate ways and the Department would not be notified until after the cleanup is complete. Also, without prior notice, IRAs can result in significant and substantial cleanups in a community, potentially with serious threat to the local community, certainly with serious local public interest and concern, without notice. With no prior notice these concerns can not be discovered or addressed until after the cleanup.

1026 The cleanup of hazardous substances by its very nature poses serious threat to human health and the environment. Cleanups are a matter of profound public interest and concern. The public deserves to be made aware of cleanups in their community prior to their completion and deserves participation in the decision process to assure the safety of their community.

The Department should consider requiring prior notification of IRAs in advance of cleanups and post these notifications via the Site Register or similar publications. This would not pose an undue burden on IRAs and would provide an avenue for the Department to discover and prevent serious problems in misguided cleanups in advance of a disaster. It is far better that the Department have the opportunity to undertake an initial investigation if it deems one is warranted prior to the completion of the cleanup than 90 days after.

Note also that the public participation requirements of MTCA at RCW 70.105D.030 is not limited to actions the Department is involved in. It requires public notice of the development of investigative plans or remedial plans for releases or threatened releases. This provision does not exclude IRAs. And valid strong public policy considerations urge prior notification in cases of private cleanups.

1027 **173-340-530(1)** I want to indicate strong support and endorsement for the clear statment that agreed orders are not settlements and there fore not open to mixed funding, covenants not to sue or protection from claims of contribution. This provision should not be changed if comments from others urge it.

1028 **173-340-545(3)** Public notice under private rights of action. This provision is woefully inadequate. Yet again in this rulemaking the Department has ignored the profound public interest in cleanups in its communities and abdicated its responsibility to the public. This section requires governmental and PLP notification, but aside from requiring a sign on the site, no notification is given to the public at large. (On top of which the sign does not have to be posted in advance, like the written notification, but can be put up concurrent with the beginning of remedy construction. Experience has shown that such signs are frequently small and placed in out of the way places. A sign on an entry gate to an industrial site will often do little to inform neighbors on the property boundary on the other end from the gate.)

Similarly notification to government entities in many towns will not see this information passed on to the community. Many town governments are protective and overly sympathetic to the concerns of their industries, and will not release these notices to the larger community.

There is no required publication in a local newspaper. There is no notification requirement of neighboring property owners. There is no required informational hearing or public comment if interest is expressed. This is unconscionable. The Department seems to be of the opinion that these matters only concern PLPs and government.

It would be far better to say that public participation in private rights of action should be measured against those in departmental action sites, as set forth in 173-340-600. If there is a challenge from neighboring non-PLPs it is quite likely the courts will disregard this provision anyway and apply the more appropriate standards in 600. In any case, to title this section public notice is laughable.

1029 **173-340-600(4)(g)** Notices regarding site specific risk assessments should include a notice of the availability of public participation grants in addition to information about the Citizens Technical Advisor.

Further General Comments and suggestions

1030 The overall weakening throughout this program punishes early cooperative PLPs who have in good faith negotiated cleanups under the existing tougher standards, and rewards the recalcitrant who have hung back awaiting weaker standards. This is an extremely bad precedent to set.

1031 Much of the language of this regulation is not regulatory at all and more fitting in preamble or policy documents. See for example, 173-340-370 Expectations for cleanup alternatives. These types of pronouncements have no binding effect, no guiding effect and have no place in regulations. They do reflect the Department's continuing movement away from priorities and criteria to mushy concepts of discretionary guides and "expectations".

1032 The department should require any listing on the HSL, all studies and remedies and IRAs to be officially recorded in deeds for the properties for consumer protection. I represent individuals who have purchased homes on listed sites and study areas where there was no disclosure made of contamination or continuing study. Requiring recordation of these facts in deeds would prevent many such unfortunate occurrences.

Date: January 18, 2000 Submitted By: Roger Klinck

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AUTOMOTIVE UNITED TRADES ORGANIZATION
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"Keeping the Wheels Rolling In Washington State"

January 17, 1999

Via Fax: (2) pages total

Trish Akana
Department of Ecology
c/o TCP Rule Revision
P.O. Box 47600
Olympia, WA 98504-7600

Re: Proposed changes to MTCA Regs
(Chapter 174-340 WAC)

The Automotive United Trades Organization (AUTO) is a nonprofit trade association representing small businesses in Washington state. AUTO members operate approximately 500 gasoline service stations and convenience stores across the state.

1033 AUTO respectfully registers its opposition to the proposed changes to the MTCA cleanup standards. AUTO believes the proposed changes will undermine the future of small business operators significantly, discourage future cleanups to the detriment of the environment, and in some cases threaten the entire survival of existing small businesses currently operating underground storage tanks.

1034 Further, AUTO strongly contests the findings and assumptions contained in the Small Business Economic Impact Statement prepared by the Department. Simply put, regardless of the good faith intent, the authors of this document apparently had little or no access to expertise in the industry. Accordingly, the document is in our opinion accurately described as erroneous, incorrect, unreliable and clearly inadequate to fulfill the legislative intent regarding SBEIS requirements in law.

1035 A complete itemization of the errors, flaws, inaccurate data, and incorrect assumptions contained in the Statement would create an extremely lengthy list. Examples would include:

- estimates of actual direct cleanup costs which are less than half the real world experience;

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- before consideration that direct costs were under estimated, the rationale that the new standards would only cost the small business 1¢ per gallon seems to ignore that this amount is the equivalent to approximately 16% of the merchant's gross profit on gasoline;

1037 • a gasoline dealer forced to pass on 1, 2, or 3 cents per gallon to recover cleanup costs could expect gasoline sales to drop significantly with a corresponding drop in other revenues such a instore sales, car washes, and auto services making the cents per gallon concept utilized by DOE totally underestimated and unreliable;

1038 • the extra direct costs of $40,000 to $100,000 to conduct a cleanup would exceed many small business families ability to borrow money needed to fund the cleanup and result in the failure of the entire business due to "the straw that broke the camel's back" rule; and

1039 • regardless of any "grand fathering" by DOE, small businesses whom recently cleaned up to earlier standards are going to face real estate devaluation from market forces at the time of sale or loan renewal exceeding up to 100% of the real estate value in rural areas and in excess of $100,000 in metro markets as buyers and loan officers demand that the property be clean to "today's standards" (just changing the level of risk where the bank raises the interest rate can cost the small business $50,000 at a 5 year renewal in higher interest rates without a single shovel of dirt being turned).

1040 AUTO believes its comments contained in this letter to be conservative and not exaggerated in the least. Simply put, if DOE adopts these new standards small business failures will increase in our industry as a direct result of actions that provide little or no values to the public or the environment and likely embroil the Department in litigation and legislative controversy.

Respectfully,

Tim Hamilton
Executive Director

tah

January 18, 2000

Trish Akana, Rules Coordinator
Toxics Cleanup Program
Washington Department of Ecology
P.O. Box 47600
Olympia, Washington 98504-7600

Re: Proposed Changes Chapter 173-322 WAC, Remedial Action Grant regulation

Dear Ms. Akana,

I appreciate the opportunity to comment on proposed amendments to Chapter 173-322 WAC, Remedial Action Grant regulation, and Chapter 173-321 WAC, Public Participation Grants regulation as filed by Ecology on November 17, 1999.

1041 It is unclear to me why any changes to these regulations are being proposed. The current regulations have administrative controls and criteria to insure grant monies are not mishandled or misappropriated. The proposed changes will do nothing but weaken those controls and Ecology oversight. If anything, Ecology oversight should be increased not weakened. It has been my experience that applicants to these programs have misrepresented their need and exaggerated reimbursable expenses to capture maximum grant dollars. In some cases, Ecology project managers have been knowingly aware of this practice.

If changes need to occur, I request that Ecology make the changes listed below to the MTCA regulations.

1042 **WAC 173-340-600 Public Notice and Participation.**

The proposed MTCA revisions add two paragraphs to this section. Paragraph 17 concerns public participation grants and paragraphs 18 concerns a new technical assistance program for the public.

RCW 70.105D.070(4) requires that funds be allocated for public participation grants to persons, including groups, who may be adversely affected by a release or threatened release of a hazardous substance. Paragraph 17 is the only mention of this requirement in WAC 173-340. Although adding this paragraph is appropriate, the paragraph is not specific enough to be useful. The second sentence should be dropped. The specified funding source for the grant program must be identified, the office in the Department of Ecology that is responsible for the grant program must be identified, and a reference to WAC 173-321 which regulates the grant program must be added.

1043 Paragraph 18 introduces a new office to provide independent technical assistance to citizens. On the surface this appears to provide technical expertise to citizens, however the paragraph

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does not provide sufficiently detailed requirements or guidelines for the office. If there are other regulations that will govern this office they must be identified in this paragraph. These regulations, if they exist or are contemplated, should be part of the current MTCA revision process. If such regulations do not exist or are not contemplated then this paragraph must be expanded to require the independence of the new office and to specify the administration of the office. Citizens must know what to expect. Will the office's function be only to explain technical aspects of a project without providing a technical evaluation or will Ecology personnel advocate for the citizens group? Response times to citizens, limitations concerning the assistance to be provided and many other issues must be defined so that the public will know how to use the office. Additionally, the specified evaluation of the office before the end of its third year should be completed by citizens and the department only. This is because the office is for the benefit of citizens. The inclusion of business representatives in the evaluation as specified in draft paragraph is not appropriate because the office is to be funded by business and they would have a predisposition to the abolishment of the office.

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WAC 173-321 Public Participation Grants.

WAC 173-321-050 Application evaluation criteria

Paragraph 1 should be revised to specify two or three dates per year when applications are due. This will require Ecology to offer grants on consistent dates, which the public can depend on.

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Paragraph 2 has been revised to add two criteria. Previously, grants concerning hazardous substance release projects were given priority over grants intended to facilitate public participation in the implementation of state waste management priorities. The new criteria add new applicants and applicants demonstrating an ability to provide accurate technical information on complex waste management issues. The ranking of these priorities is not explicitly stated. It is not fair and contrary to the intent of the grant program to give a new applicant priority over an involved and knowledgeable prior grant recipient whose work is ongoing. The second new criteria is at best not needed (an obvious advantage in the evaluation of applications) and at worst a subversion of the intent of the grant program which is to encourage public participation in remedial actions. The only valid purpose for prioritization criteria is to establish whether site cleanup or the state waste management priorities have precedence. The new criteria are not appropriate or needed.

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Paragraph 3 provides the general criteria for application evaluation. The revision adds four new criteria but does not improve the grant program. The evaluation criteria should be refashioned to accomplish two purposes: first, to encourage people and groups to participate and second, to provide a clear link between the information required in the application and the evaluation criteria. To encourage participation the criteria should be simple, clear, and free of burdensome requirements, which the public is generally not likely to be familiar with (such as 'demonstration of the use of Bennett's hierarchy'). To improve the submittal of complete and

acceptable applications, the evaluation criteria should correlate directly with the information required for submittal. This would require Ecology to be unambiguously with the public.

1047 WAC 173-321-060 Eligible project costs

In paragraph 3) c) ('Ineligible projects and grant costs') a requirement is added that applicants shall notify the department if legal action is intended or taken concerning the project. This information is simply not relevant to the grant administration if no grant money is used in the legal action. This would be an unnecessary burden to the grant recipient. Additionally, providing such information would likely bias grant administration, interfere with public participation, and interfere with the right of citizens sue if necessary. A good working relationship with the grant recipient would better facilitate the appropriate communication of such information with Ecology.

1048 **WAC 173-322 Remedial Action Grants and Loans**

WAC 173-322-040 Applicant eligibility

In paragraph 2) a) the definition of applicant is expanded from 'a local government that is a PLP at a hazardous waste site' to include an owner of a site that is not a PLP or an applicant for area-wide groundwater contamination. This broadening of eligibility has two edges. Although it appears to expand the application of the grant program to encourage cleanup of sites or situations that may not be addressed in a timely manner, it also, however, increases the public cost and liability concerning these sites. Legal protections for the public need to be added. Site owners that are not PLP's must be required to pursue the PLP's before applying for a grant. The public should not bear any costs unless the PLP no longer exists. In the case where action is needed in the near term, a loan could be offered on the condition that the PLP be vigorously pursued. Area-wide groundwater contamination with multiple sources is, unfortunately, a common situation. However, public entities should be the last party to take the lead when the public is not a PLP. Because these situations typically have several PLP's, they are also likely to have other more experienced pockets besides the publics to dip into. Language must be inserted to make public management and funding of area-wide groundwater cleanup a last resort. Local governments have limited resources to offer and shouldn't be encouraged to take on large complicated cleanups. Local governments should be encouraged to cooperate with other agencies such as Ecology or the EPA which have more experience, expertise and resource for just such issues if a private PLP cannot be made to come forward.

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1052 Paragraph 3)b)i) expands the standards a local government must meet to be eligible for a grant. Previously the local government had to have been required to enter a remedial action by Ecology. The revisions add to this "completed remedial actions that have been approved or reviewed by Ecology". This is a direct and complete contradiction of the purpose of the grant program. The clearly stated purpose of the grant program is to provide financial means for local governments to address sites that are "beyond the financial means of local

governments and ratepayers". If the local government has had the means to complete an independent action then they do not need a grant and therefore should not qualify for a grant. The only conceivable way a local government would take a risk on such a cleanup if they truly could not afford to meet their obligations would be with the complicity of the Department of Ecology. This is unethical and illegal. It results in the illegal lessening of MTCA requirements because Ecology will be obliged to approve a substandard cleanup to retain credibility with local governments.

1053 WAC 173-322-090 State assistance share, local cash match, economic disadvantage, and role of potentially liable persons.

Paragraph 1 is revised to drop a maximum dollar limitation on landfill closures, adds a 15% bonus match for eligible remediation costs over $200,000 that use treatment, recycling or disposal, and places a $200,000 limit on eligible costs for independent actions. This paragraph is too busy and should be broken into three paragraphs: one defining the 50% match criteria; the second describing any bonus matching, and the third describing independent action matches. Since the purpose of the grant program is to encourage remedial actions at sites where locally available funds are not adequate, bonus matches should be reserved for local governments of limited means. As previously stated, encouraging independent actions by grant eligible entities is not appropriate.

1054 Paragraph 3 has been added to offer grants with greater than 50% match for are-wide groundwater contamination remediation. As previously stated local governments are generally not prepared to take on area-wide groundwater contamination and should not be encouraged to. This paragraph is far too vague to be an acceptable regulation. Simply stating 'funding of more than 50%' is not adequate. Limitations to the funding match must be set lower than the standard 50% because multiple parties will likely be liable limiting the local government's liability. Any match over that amount should be a loan rather than left to a recovery process run by people who have already had their costs paid.

1055 WAC 173-322-100 Fiscal controls.

Paragraph 4) d) has been revised to include independent actions conducted no more than 5 years before the application. The 5-year time frame emphasizes how allowing reimbursement for independent actions violates the intent of the grant program. If a local government is distressed by an independent action completed 5 years before, then an economic development grant is needed not reimbursement for a remedial action. Such a government should be required to follow MTCA process of they want reimbursement for a remedial action.

1056 WAC 173-322-110 Grant administration.

Paragraph 8 has been added to limit Ecology's liability. This is obviously needed in the revised regulations because the revisions create many pitfalls.

1057 WAC 173-322-110 Loan.

A loan program is an interesting addition to the regulations. Much more detail is needed to assure the public that appropriate and viable loans would be made by Ecology. Ecology should only be allowed to negotiate loan terms within limitations specified in these regulations. Ecology has a responsibility to the citizens of Washington to loan funds wisely. This responsibility to the citizens must be stated. As written the loan program says 'trust me' as Ecology and their fellow local government go behind closed doors out public view to make the deal.

I appreciate the opportunity to comment on the proposed changes. I look forward to Ecology's responses and the opportunity to work Ecology on revisions to the rule. Please contact me at (360) 573-9515 should you have any questions regarding these comments.

Sincerely,

Jim Jakubiak

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TO	COMPANY	FAX NO.	PHONE NO.
Ms. Trish Akana	State of Washington Department of Ecology	(360) 407-7154	(360) 407-7230

MESSAGE:

These comments are submitted on behalf of the Air Transport Association of America, Inc. Thank you.

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1290-10175

Air Transport Association

January 18, 2000

Ms. Trish Akana
Department of Ecology
State of Washington
P.O. Box 47600
Olympia, WA 98504-7600

Re: Comments on the Proposed Revisions to the Model Toxics Control Act Regulations (Publication No. ECY 99-606 dated November 1999)

Dear Ms. Akana:

The Air Transport Association of America, Inc. ("ATA") appreciates this opportunity to comment on the Department of Ecology's updated proposal for revising the State of Washington's Model Toxics Control Act ("MTCA") Cleanup regulation, Chapter 173-340 WAC regulations, Washington State Register, Issue 99-22, which was released for comment in November 1999.

ATA had previously commented on an earlier version of the proposal, dated November 1998. In comparing our previous comments with the current proposed MTCA Amendments, we find that Ecology did not address many of our comments in putting together this updated proposal. Therefore, we reassert those comments here and urge Ecology to incorporate the changes we recommend into the final rule.

As you may know, ATA serves as the principal trade and service organization of the major scheduled air carriers in the United States. ATA members include Airborn Express, Alaska Airlines, Aloha Airlines, America West Airlines, American Airlines, American Trans Air, Continental Airlines, Delta Air Lines, DHL Airways, Emery Worldwide Airlines, Evergreen International Airlines, FedEx, Hawaiian Airlines, Midwest Express Airlines, Northwest Airlines, Polar Air Cargo, Reeve Aleutian Airways, Southwest Airlines, Trans World Airlines, United Airlines, United Parcel Service, and US Airways. Aeromexico, Air Canada, Canadian Airlines International, KLM Royal Dutch Airlines, and Mexicana Airlines are associate members.

Many of ATA's member air carriers service airports in the State of Washington. Thus, ATA and its members are interested in MTCA and the regulations promulgated to implement this Act as they may affect the Washington airports and air carriers operating there. As a threshold matter, ATA and its members support the concepts behind MTCA. ATA is a proponent of risk-based analysis as a sound means for assessing and addressing potential contamination. Use of a risk-based approach, such as that provided for in MTCA, ensures that environmental contamination is cleaned up to the point that it does not pose significant risks to human health or the environment. Thus, such an approach ensures appropriate environmental

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protection. At the same time, however, use of environmental assessment and cleanup protocols with appropriate risk-based "boundaries" can facilitate expeditious cleanup and promote economic development. This is evidenced at several airports throughout the country where states have supported a risk-based approach to corrective action. At these airports, implementation of a risk-based approach is credited with facilitating the initiation of major construction projects. Experience at these airports also demonstrates that risk-based corrective action results in a significantly increased percentage of voluntary cleanups by the regulated community due to the ability to implement practically feasible and economically viable corrective action.

While ATA supports the concept behind MTCA, ATA is concerned that certain elements of the MTCA regulations and the proposed revisions to the regulations do not fully provide for implementation of a true risk-based approach and, in some cases, otherwise establish requirements and thresholds that are unduly stringent. ATA provides its comments on these provisions in Section A below. In Section B of its comments, ATA identifies issues that it believes should be further clarified within the MTCA regulations. For ease of review, ATA's comments in each of these Sections follow the structure of the proposed MTCA regulation revisions.

A. PROVISIONS THAT APPEAR TO INHIBIT THE IMPLEMENTATION OF A TRUE RISK-BASED APPROACH OR OTHERWISE ARE UNDULY STRINGENT

As noted above, ATA is concerned that certain of the proposed revisions to the MCTA regulations are not conducive to true risk-based decision making. In addition, in certain cases, some of the proposed revisions appear unduly stringent as they would apply to industrial sites. This is inconsistent with the statutory admonition in MTCA that cleanup standards applied to industrial sites be tailored to industrial use and not be more stringent than necessary. See Wash. Rev. Code § 70.105D.030(2)(f). Thus, ATA urges the Department of Ecology ("Ecology") to revise such provisions so that the full environmental and developmental benefits of a risk-based approach can be realized. ATA's specific comments are set forth below.

1058

1. Section 173-340-708 (6) (a) (Page 158):

This section states that effects from multiple exposure pathways are assumed to be additive. However, multiple exposure pathways should not be assumed. Doses of individual hazardous substances from more than one pathway should only be calculated when multiple exposure pathways are, in fact, present. Thus, when it can be demonstrated that certain pathways are absent at a site (due to natural or artificial conditions), those pathways should not have to be considered. This clarification is important so risks will not be overestimated, which would result in unduly stringent cleanup standards at a given site.

1059

2. **Section 173-340-708 (10) (b) (Pages 160):**

This section states that exposure parameters are not expected to vary on a site-by-site basis other than in the most restricted scenarios (such as use of engineered controls). To the contrary, however, exposure parameters at industrial sites can and do vary significantly. Failure to take this into account will result in an overestimation of risk. Thus, ATA urges Ecology to re-evaluate this statement and allow the regulated community to use realistic, site-specific exposure parameters in performing risk-based analysis. Further, Ecology should allow the exposure parameters to be based on reasonable, real world industrial uses and exposures so the exposure parameter variable can be implemented effectively, without undue barriers. The use of site-specific parameters does not result in any increased threat to human health or the environment. To the contrary, use of such parameters ensures that risks posed at a specific site are addressed appropriately so that risks are within acceptable limits. This is the real goal behind all risk-based corrective action.

1060

3. **Section 173-340-720 (2) (Page 164):**

This section states that ground water shall be classified as a drinking water source either if ground water serves as a current source of drinking water (2a) or if ground water is a potential future drinking water source (2b). However, for perched and/or shallow aquifers that are non-continuous bodies of water, Ecology should not require potential future drinking water use to be considered. It is highly unlikely that waters from below such aquifers (if they are not currently used as source of drinking water) will be used for drinking water in the future. For example, the ground water below many industrial properties is present in a perched zone. Accordingly, it would almost never be used for drinking purposes. To address this, Ecology should clarify that ground water that is demonstrated to be present solely in a perched zone or shallow non-continuous aquifers is excluded from consideration as a drinking water source altogether. Moreover, to the extent that Ecology is concerned about potential future drinking water use in non-perched zones, Ecology should use deed restrictions, orders or other controls to address this concern rather than mandating more stringent cleanup standards that do not make sense for industrial sites. Requiring all industrial sites to meet drinking water standards by default means the true risks posed are not being considered.

1061

4. **Sections 173-340-720 (5), (6) & (7) (Pages 167 to 169):**

Under the current proposal, Method C does not allow for attenuation to be taken into account. However, attenuation is a scientifically established process and occurs under most natural conditions. By not allowing consideration of such attenuation, Ecology is limiting the ability to consider site-specific characteristics. Yet, site-specific analysis is one of the most important features of a Method C evaluation. Thus, Ecology should allow ground water cleanup levels under Method C to be modified by attenuation factors as appropriate. ATA suggests that attenuation be considered, at a minimum, in the following circumstances:

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- When there is reasonable separation between source areas in soil and ground water levels, in which case a vadose zone attenuation factor could be used; or

- When there is reasonable separation between point of compliance and source areas, in which case a ground water dilution attenuation factor could be used.

1062

5. **Sections 173-340-747 (4) (b)(vii) (C) (iii) (B) & (4) (c) (iii) (B) (Pages 194 & 195):**

By requiring that any soil cleanup level derived pursuant to these sections also be consistent with residual saturation limits defined in WAC 173-340-747 (5), results from employment of these sections are essentially rendered useless because results from residual saturation limits take precedence. Ecology should consider requiring the modeling or empirical demonstration performed in these sections to also verify that no non-aqueous phase liquid ("NAPL") will reach the ground water instead of tying the results from these sections to the residual saturation concentrations specified in 173-340-747 (5).

1063

6. **Sections 173-340-990 –Tables 740-1 & 745-1 (in section labeled TABLES), Pages 216 and 218):**

The proposed revisions would place the soil cleanup levels for Benzene, Toluene, Xylene, Ethylbenzene, Tricholoroethylene, and PAHs at excessively conservative numbers. They are conservative in light of the following reasons:

- These numbers assume drinking water standards in ground water. This is not appropriate for all sites, particularly in industrial properties.

- In some properties, impacted ground water is actually from perched zones that in any event would never be used for drinking water purposes.

- The values are calculated using the three-phase partitioning model, which is extremely conservative in nature and does not reflect realistic leaching characteristics for all sites.

- Some of the values are so conservative they are at or near the detection level of analytical methods for the particular chemicals at issue. Besides being unsupported on a risk basis, standards set so close to the detection limits would be very difficult to meet and to demonstrate in actual application.

Ecology should decline to adopt the newly proposed cleanup levels and should, instead, retain the cleanup levels from the regulations prior to the November 1998.

1064

7. **Section 173-340-990 - Table 749-1 (in section labeled TABLES, Page 207)**

This table, entitled "Simplified Terrestrial Ecological Evaluation-Exposure Analysis Exclusion," provides a method of obtaining an exclusion from any ecological evaluation. Item 5 of this table asks if certain chemical contaminants are present. This question requires a simple "yes/no" answer. However, a simple yes/no answer may be inappropriate for specific situations, particularly for large sites where there may be minor, sometimes negligible, amounts of these chemicals present. The result from employing the table would be to disallow an exclusion even though the site may reasonably qualify for such exclusion. Therefore, Ecology should revise this requirement to allow one to factor in whether these chemicals are present above a minimum level and in a statistically significant sense.

1065

B. ADDITIONAL COMMENTS AND REQUESTS FOR CLARIFICATIONS

1. **Section 173-340-702(12) (a) & (b) (Page 153):**

Does this section imply that cleanups being that have been completed or are occurring under the existing Interim TPH (Total Petroleum Hydrocarbon) policy will not be subject to future review? If so, then once the new MTCA revisions are officially introduced, would that impose new requirements for remediation performed under the Interim TPH policy?

1066

2. **Section 173-340-706 (a) (ii) (Page 155):**

This section states "Where attainment of Method A or B cleanup levels has the potential for creating a significantly greater overall threat to human health than attainment of Method C Cleanup levels ..." This statement is confusing and potentially misleading. Cleanup levels obtained by any one of these methods are fully protective of human health. Although there is provision to assume higher risk factors (and to have higher cleanup values) under Method C than A or B, this must be justified by site-specific analysis. And Methods A and B include purposefully conservative cleanup levels. Thus, none of the methods result in unacceptable human health threat. Therefore, the statement in the regulations improperly implies that certain Methods may result in less protection of human health and the environment, when this is not actually so. This provision should be clarified.

1067

3. **Section 173-340-708 (7) (g) (Page 158):**

Ecology should provide opportunity for review of any reference dose/reference concentration established under this section that has not previously been adopted by EPA or published by HEAST or IRIS. This will ensure that all interested parties can comment on such factors before they are officially adopted.

1068

4. **Section 173-340-708 (8) (c) (i) & (ii) (Page 159):**

Ecology should provide opportunity for review of any cancer potency factors established under these sections that are not previously adopted by EPA or published by HEAST or IRIS. This will ensure that all interested parties can comment on such factors before they are officially adopted.

1069

5. **Sections 173-340-990 –Tables 740-1 & 745-1 (in section labeled TABLES)**

These tables do not explicitly state the standards for jet fuel. Jet fuel has different properties and breaks down more quickly than diesel fuel, which one might try to use as a default absent a jet fuel category. Ecology should either establish jet-fuel specific standards or allow individuals undertaking a risk-based analysis to factor in the lower risks posed by this material. Please clarify.

* * * * * * * * * * * *

Thank you for this opportunity to comment on the MTCA regulatory revisions. Should you have any questions about ATA's comments, please give me or Wallid Kazi, ATA's Remediation Coordinator (714) 662-2757, a call.

Sincerely yours,

Scott F. Belcher By NWY

Scott F. Belcher
Managing Director, Environmental Affairs

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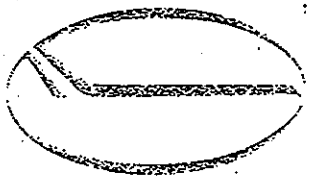
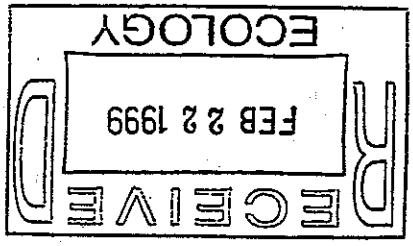


Air Transport Association

February 16, 1999



Ms. Trish Akana
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Re: Comments on the Proposed Revisions to the Model Toxics Control Act Regulations

Dear Ms. Akana:

The Air Transport Association of America ("ATA") appreciates this opportunity to comment on the Department of Ecology's proposed changes to the State of Washington's Model Toxics Control Act ("MTCA") regulations, which were proposed on December 14, 1998.

As you may know, ATA serves as the principal trade and service organization of the major scheduled air carriers in the United States. ATA members include Alaska Airlines, Aloha Airlines, America West Airlines, American Airlines, American Trans Air, Continental Airlines, Delta Air Lines, DHL Airways, Emery Worldwide Airlines, Evergreen International Airlines, FedEx, Hawaiian Airlines, KIWI International Airlines, Midwest Express Airlines, Northwest Airlines, Polar Air Cargo, Reeve Aleutian Airways, Southwest Airlines, Trans World Airlines, United Airlines, United Parcel Service, and US Airways. Aeromexico, Air Canada, Canadian Airlines International, KLM Royal Dutch Airlines, and Mexicana Airlines are associate members.

Many of ATA's member air carriers service airports in the State of Washington. Thus, ATA and its members are interested in MTCA and the regulations promulgated to implement this Act as they may affect the Washington airports and air carriers operating there. As a threshold matter, ATA and its members support the concepts behind MTCA. ATA is a proponent of risk-based analysis as a sound means for assessing and addressing potential contamination. Use of a risk-based approach, such as that provided for in MTCA, ensures that environmental contamination is cleaned up to the point that it does not pose significant risks to human health or the environment. Thus, such an approach ensures appropriate environmental protection. At the same time, however, use of environmental assessment and cleanup protocols with appropriate risk-based "boundaries" can facilitate expeditious cleanup and promote economic development. This is evidenced at several airports throughout the country where states have supported a risk-based approach to corrective action. At these airports, implementation of a risk-based approach is credited with facilitating the initiation of major construction projects. Experience at these

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airports also demonstrates that risk-based corrective action results in a significantly increased percentage of voluntary cleanups by the regulated community due to the ability to implement practically feasible and economically viable corrective action.

While ATA supports the concept behind MTCA, ATA is concerned that certain elements of the MTCA regulations and the proposed revisions to the regulations do not fully provide for implementation of a true risk-based approach and, in some cases, otherwise establish requirements and thresholds that are unduly stringent. ATA provides its comments on these provisions in Section A below. In Section B of its comments, ATA identifies issues that it believes should be further clarified within the MTCA regulations. For ease of review, ATA's comments in each of these Sections follow the structure of the proposed MTCA regulation revisions.

A. PROVISIONS THAT APPEAR TO INHIBIT THE IMPLEMENTATION OF A TRUE RISK-BASED APPROACH OR OTHERWISE ARE UNDULY STRINGENT

As noted above, ATA is concerned that certain of the proposed revisions to the MCTA regulations are not conducive to true risk-based decision making. In addition, in certain cases, some of the proposed revisions appear unduly stringent. ATA urges the Department of Ecology ("Ecology") to revise such provisions so that the full environmental and developmental benefits of a risk-based approach can be realized. ATA's specific comments are set forth below.

1404

1. Section 173-340-708 (6) (a) (Page 83):

This section states that effects from multiple exposure pathways are assumed to be additive. However, multiple exposure pathways should not be assumed. Doses of individual hazardous substances from more than one pathway should only be calculated when multiple exposure pathways are, in fact, present. Thus, when it can be demonstrated that certain pathways are absent at a site (due to natural or artificial conditions), those pathways should not have to be considered. This clarification is important so risks will not be overestimated, which would result in unduly stringent cleanup standards at a given site.

1405

2. Section 173-340-708 (10) (b) (Pages 86):

This section states that exposure parameters are not expected to vary on a site-by-site basis other than in the most restricted scenarios (such as use of engineered controls). To the contrary, however, exposure parameters at industrial sites can and do vary significantly. Failure to take this into account will result in an overestimation of risk. Thus, ATA urges Ecology to re-evaluate this statement and allow the regulated community to use realistic exposure parameters in

performing risk-based analysis. Further, Ecology should allow the exposure parameters to be based on reasonable, real world industrial uses and exposures so the exposure parameter variable can be implemented effectively, without undue barriers. The use of site-specific parameters does not result in any increased threat to human health or the environment. To the contrary, use of such parameters ensures that risks posed at a specific site are addressed appropriately so that risks are within acceptable limits. This is the real goal behind all risk-based corrective action.

1406

3. **Section 173-340-720 (1) (Pages 92-93):**

This section states that the Method C option for ground water cleanup standards "starts with drinking water options." In the case of industrial sites, Ecology should provide the option of starting with site-specific, risk-based ground water cleanup criteria due to the following reasons:

- Ground water below industrial properties is rarely used for drinking water purposes. Thus, ground water use as drinking water should not be presumed in industrial sites.

- In industrial properties that meet certain criteria (as stated in Section 173-340-720 (10) (Page 101)), the regulations allow for the point of compliance to be set at a property boundary. In such cases, compliance with drinking water standards should be required only at the property boundary and not at interior locations. Thus, cleanup levels interior of the property should not be required to comply with drinking water standards

1407

This section also states that "If this is not practicable, the point of compliance can be moved out to the property boundary". Please see ATA's comment on Section 173-340-720 (10) regarding this matter (Comment A.6., below), where ATA supports the use of points of compliance at or even beyond the property boundary as warranted by site conditions.

1408

This section further states that whenever a standard less stringent than the drinking water standard is used or when a point of compliance other than site-wide compliance is established, institutional controls (such as deed restrictions) must be put in place. Requiring deed restrictions can be unduly cumbersome in industrial zones that have multiple owners or operators in light of the complexity of registering restrictive covenants on these kind of properties. In such cases, restrictions other than deed restrictions could be put into place. For example, Ecology could issue an agreed-upon order that restricts the use of ground water from such properties. Thus, ATA urges Ecology to allow for a broad range of controls to be utilized and recognized, particularly in cases where multiple owners or operators are involved.

1409

4. **Section 173-340-720 (3) (Page 94):**

This section states that ground water shall be classified as a drinking water source either if ground water serves as a current source of drinking water (3a) or if ground water is a potential future drinking water source (3b). For industrial properties, Ecology should not require potential future drinking water use to be considered. It is highly unlikely that waters from below industrial sites (if they are not currently used as source of drinking water) will be used for drinking water in the future. For example, the ground water below many industrial properties is present in a perched zone. Accordingly, it would almost never be used for drinking purposes. To address this, Ecology should clarify that ground water that is demonstrated to be present solely in a perched zone is excluded from consideration as a drinking water source altogether. Moreover, to the extent that Ecology is concerned about potential future drinking water use in non-perched zones, Ecology should use deed restrictions, orders or other controls to address this concern rather than mandating more stringent cleanup standards that do not make sense for industrial sites. Requiring all industrial sites to meet drinking water standards by default means the true risks posed are not being considered.

1410

This section also states (in 3c) that Ecology has to determine that it is "unlikely that hazardous substances will be transported from contaminated ground water that is a current or potential source of drinking water." Yet, Ecology has not clarified how such a determination will be made. ATA suggests that Ecology consider using the modeling or empirical demonstration performed under section 173-340-747 (7), verifying that no non-aqueous phase liquid ("NAPL") will reach ground water, for making this determination. Ecology should not tie this determination to the "Residual Saturation" concept in Section 173-340-747 (9) because of the problems that ATA has identified with such an approach, as explained in Comment A.11, below.

1411

5. **Sections 173-340-720 (6) & (8) (Pages 97 & 99):**

Under the current proposal, Method C does not allow for attenuation to be taken into account. However, attenuation is a scientifically established process and occurs under most natural conditions. By not allowing consideration of such attenuation, Ecology is limiting the ability to consider site-specific characteristics. Yet, site-specific analysis is one of the most important features of a Method C evaluation. Thus, Ecology should allow ground water cleanup levels under Method C to be modified by attenuation factors as appropriate. ATA suggests that attenuation be considered, at a minimum, in the following circumstances:

- When there is reasonable separation between source areas in soil and ground water levels, in which case a vadose zone attenuation factor could be used; or

- When there is reasonable separation between point of compliance and source

areas, in which case a ground water dilution attenuation factor could be used.

1412

6. **Section 173-340-720 (10) (Page 101):**

Ecology should allow industrial sites with multiple contaminated areas to use the property boundary or, in certain cases, a point beyond the property boundary, as the point of compliance for drinking water standards. When there are multiple contaminated areas from multiple responsible parties, it is extremely difficult to separate individual source areas and establish a point of compliance within those areas. Moreover, where various industrial properties are contiguous or where it otherwise can be demonstrated that off-property exposures are not significant, establishment of a point of compliance at or beyond the property boundary can be fully protective of human health and the environment. As stated earlier, ground water from interior of industrial properties is rarely used for drinking water purposes. In many cases, impacted ground water is from a perched zone that would not qualify as drinking water in any event and has no potential to be a source for future drinking water. By allowing a point of compliance at or beyond the property boundary as shown to be protective, Ecology is not only safeguarding health risks appropriately outside of the industrial property but also allowing practical solutions to cleanup in industrial properties. Such an approach likely will result in a higher percentage of voluntary cleanup actions.

1413

7. **Sections 173-340-740 & 173-340-745 –Tables 740-1 & 745-1 (in section labeled TABLES)**

The proposed revisions would place the soil cleanup levels for Benzene, Toluene, Xylene, Ethylbenzene and PAHs at excessively conservative numbers. They are conservative in light of the following reasons:

- These numbers assume drinking water standards in ground water. This is not appropriate for all sites, particularly in industrial properties.
- In some properties, impacted ground water is actually from perched zones that in any event would never be used for drinking water purposes.
- The values are calculated using the three-phase partitioning model, which is extremely conservative in nature and does not reflect realistic leaching characteristics for all sites.
- Some of the values are so conservative they are at or near the detection level of analytical methods for the particular chemicals at issue. Besides being

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unsupported on a risk basis, standards set so close to the detection limits would be very difficult to meet and to demonstrate in actual application.

Ecology should decline to adopt the newly proposed cleanup levels and should, instead, retain the cleanup levels from the prior regulations.

1414

8. Sections 173-340-740 & 173-340-745 - Tables 740-1 & 745-1 (in section labeled TABLES)

Under the proposed revisions, the soil cleanup levels for Benzene, Toluene, Xylene, Ethylbenzene, EDB, 1,1,1 TCA, TCE, Gasoline, Diesel, Mineral Oil and PAHs would be identical for residential and industrial sites. This does not make sense, because the risks posed by the presence of these constituents at industrial sites are lesser than at residential sites. The soil cleanup levels for industrial sites should be revised to reflect the lower risks in industrial properties. Accordingly, Ecology should increase the levels for industrial sites compared to residential sites.

1415

9. Sections 173-340-745 (1) & (2) (Pages 123-124):

The first section, Section (1), states "It is expected that a limited number of industrialized areas and related commercial facilities that are not near residential areas, schools and childcare facilities would qualify for use of industrial property soil cleanup levels." Ecology should also provide a scientific definition of the term "near" in the previous description. Otherwise, this provision could operate to unduly limit industrial property designations.

The next section, Section (2), defines the criteria for designating industrial properties and also indicates that the proximity of residential areas, school or childcare facilities will be used as a criterion for designating industrial sites. This provision is overly stringent as drafted. The residential designation covers an extremely broad range of properties. And yet the exposure risks at such properties may not be significant. The MTCA regulations should distinguish between broadly classified "residential" areas and areas where exposures may pose greater risks, such as childcare facilities, and possibly schools. Otherwise, this provision will operate to over estimate risk and to unnecessarily inflate cleanup standards. Therefore, the consideration of proximity of "residential property" should be deleted or determined on a site-specific basis as to its significance when assessing designation of industrial properties.

1416

10. Sections 173-340-747 (7) (iii) & (8) (iii) (Pages 136 & 137):

By requiring that any soil cleanup level derived pursuant to these sections also be consistent with residual saturation limits defined in WAC 173-340-747 (9), results from employment of these sections are essentially rendered useless because results from residual

saturation limits take precedence (see comment below). Ecology should consider requiring the modeling or empirical demonstration performed in these sections to also verify that no non-aqueous phase liquid ("NAPL") will reach the ground water instead of tying the results from these sections to the residual saturation concentrations specified in 173-340-747 (9).

14/7

11. **Section 173-340-747 (9) (b) (i) (Page 137):**

The requirement under this section appears to force all soil cleanup calculations to a default equivalent of Method A cleanup levels due to the following:

- The values from Table 747-2 are approximately equivalent to Method A cleanup values for Diesel & Mineral Oil;
- These values take precedence over other cleanup values calculated.

Essentially, this approach limits soil cleanup levels to Method A levels for all situations unless one performs a site-specific measurement or makes an empirical demonstration. Neither option is explained in detail and could be cumbersome to implement. Ecology should explain the reasons for this requirement and also provide definite, step-by-step instructions on how to go about calculating site-specific residual saturation levels that would not necessarily provide cleanup levels equivalent to Method A levels. Otherwise, it appears that the only two real options provided by MTCA are Method A cleanup levels or residual saturation limits. In actuality, because even these options are very comparable to each other, this approach provides only one alternative for all scenarios. Such a limiting process would defeat the broad-based purpose for which MTCA has been developed.

ATA recommends that Ecology follow risk-based processes adopted in airports, where the residual saturation is defined by an equation such as that shown below:

Residual Saturation = Soil Porosity X % of vadose zone saturated X Product Density/Soil bulk density

The proper conversion factors would also have to be used. The above estimation is more reasonable because:

- It allows quick estimation using parameters that are known or easily estimated.
- It does not become the limiting value when compared to health-based cleanup levels.
- It establishes realistic values for determining the threat of impact to ground water.

1417 cont.

Information on saturation characteristics already accepted by Ecology demonstrates that the newly proposed residual saturation values are overly conservative and unsupported. As the Interim TPH Policy (at page 20) issued by Ecology in January 1997 states:

> Typical literature estimates of petroleum residual saturation for the vadose zone vary from 10 to 20% of the pore spaces (values reported range from 5 to 60%). This translates to gasoline concentrations of approximately 12,000 to 24,000 mg/kg (assuming a porosity of 30% and gasoline specific gravity of 0.7). The value would increase to 39,000 mg/kg if porosity were as high as 43% such as might be found in surficial, non-compacted soil.

Thus, this information and range of residual concentrations contradict and illustrate the flaws in the residual saturation values currently proposed by Ecology in Table 747-2.

1418

12. Section 173-340-7492(2) (a) – Table 6 (in section labeled TABLES)

This table, entitled "Simplified Terrestrial Ecological Evaluation-Exposure Analysis Exclusion," provides a method of obtaining an exclusion from any ecological evaluation. Item 5 of this table asks if certain chemical contaminants are present. This question requires a simple "yes/no" answer. However, a simple yes/no answer may be inappropriate for specific situations, particularly for large sites where there may be minor, sometimes negligible, amounts of these chemicals present. The result from employing the table would be to disallow an exclusion even though the site may reasonably qualify for such exclusion. Therefore, Ecology should revise this requirement to allow one to factor in whether these chemicals are present above a minimum level and in a statistically significant sense.

1419

13. Section 173-340-7492(2) (b) – Table 7 (in section labeled TABLES)

This table presents concentrations for contaminants of concern for terrestrial evaluation. A majority of sites will probably need this evaluation since many sites will not be able to obtain an exclusion by Section 173-340-7492(2)(a)-Table 7. The concentrations level for the contaminants of concern listed in this table are lower than cleanup levels previously calculated from a human health risk perspective. Thus, the concentration levels in Table 7 will limit acceptable cleanup levels. Alternatively, one would need to perform more complicated, site-specific, terrestrial evaluation. In either case, the terrestrial evaluation appears to establish the limiting concentration levels for most sites. Ecology should consider ways of avoiding this "trap" in the risk evaluation process. One suggestion would be to increase the levels for contaminants of concern such that they do not become the limiting factor.

1420

Another comment regarding Table 7 is that, for most chemicals, the concentration levels for contaminants of concern are identical for residential and industrial/commercial sites. This

appears to be somewhat impractical, particularly considering the fact that Ecology had previously stated that industrial/commercial properties do not need to consider soil biota, plants or wildlife. Ecology should consider categorizing industrial sites as "with or without appreciable wildlife habitat" because such wildlife habitat rarely, if ever, is present. Further, by definition, risks encountered in industrial properties are usually lower than in residential properties.

B. ADDITIONAL COMMENTS AND REQUESTS FOR CLARIFICATIONS

1421

1. Section 173-340-200 Definitions (Pages 6-15):

Drinking Water Fraction: This section does not explain how this term can be used in developing cleanup levels. Please clarify.

1422

Cleanup Level and Remediation Level: Please explain the difference between these two terms. Does a Cleanup level set a remediation level? Why do we need both terms?

1423

2. Section 173-340-700 (5) (Page 70):

This section makes reference to Figure 700-1, which is missing.

1424

3. Section 173-340-702(12) (Page 74):

Does this section imply that cleanups being proposed now or occurring now can be implemented as per existing Interim TPH (Total Petroleum Hydrocarbon) policy? If so, then once the new MTCA revisions are officially introduced, would that impose new requirements for remediation performed under the Interim TPH policy?

1425

4. Section 173-340-706 (a) (ii) (Page 79):

This section states "Where attainment of Method A or B cleanup levels has the potential for creating a significantly greater overall threat to human health than attainment of Method C Cleanup levels ..." This statement is confusing and potentially misleading. Cleanup levels obtained by any one of these methods are fully protective of human health. Although there is provision to assume higher risk factors (and to have higher cleanup values) under Method C than A or B, this must be justified by site-specific analysis. And Methods A and B include purposefully conservative cleanup levels. Thus, none of the methods result in unacceptable human health threat. Therefore, the statement in the regulations improperly implies that certain Methods may result in less protection of human health and the environment, when this is not actually so. This provision should be clarified.

1426

5. **Section 173-340-708 (7) (g) (Page 84):**

Ecology should provide opportunity for review of any reference dose/reference concentration established under this section that has not previously been adopted by EPA or published by HEAST or IRIS. This will ensure that all interested parties can comment on such factors before they are officially adopted.

Recently, Ecology adopted an uncertainty factor for reference dose for mid-range aliphatic hydrocarbons based on a recommendation from National Center for Environmental Assessment (NCEA). When combined with uncertainty factors applied by the Total Petroleum Hydrocarbon Criteria Working Group (TPHCWG), which proposed the original reference dose before the NCEA recommendation, the total uncertainty factor became 3000. Given the significant amount of laboratory results available, an uncertainty factor of 3000 appears to be excessively conservative and not reflective of actual risk levels. Additional input to this process should be considered so that more reasonable values will be identified.

1427

6. **Section 173-340-708 (8) (c) (i) & (ii) (Page 84):**

Ecology should provide opportunity for review of any cancer potency factors established under these sections that are not previously adopted by EPA or published by HEAST or IRIS. This will ensure that all interested parties can comment on such factors before they are officially adopted.

1428

7. **Section 173-340-709 (4) (Page 88):**

This section requires that 10 or more soil samples be used to define "background concentrations for soil." However, it also requires that 20 or more soil samples be taken to establish "area background concentrations for soil". There appears to be a discrepancy between these provisions. Please explain.

1429

8. **Section 173-340-745 (5) (b) (iv) (D) (Page 129):**

This section refers to equation 745-6, which is missing.

1430

9. **Sections 173-340-747 (1) (a) & (b) (Page 132):**

This section describes how soil concentrations are derived for ground water protection. Can any one of the methods be used for deriving soil cleanup levels protective of ground water? (For example, if so desired, can one just use Fate/Transport Modeling instead of either the three-phase or four-phase partitioning mode?)

1431

10. Section 173-340-747 (9) (a) (i) (Page 137):

This section does not make it clear how one will go about undertaking "site-specific measurement of hazardous substance natural biodegradation rates." This is important because measurement of biodegradation rates is not very clear in the literature and there are not any measurable parameters that are widely accepted as indicative of definite biodegradation rates. In the absence of such clarifications, it would appear reasonable for the regulated community to use average biodegradation rates in any fate and transport modeling used to derive soil concentrations. Ecology should clarify this provision accordingly.

1432

11. Section 173-340-747 (9) (b) (i) (Page 137):

This section does not make it clear how one will go about measuring site-specific residual saturation. This is important due to the reasons stated in the other ATA comments regarding Section 173-340-747 (9) (e.g., Comment A.11, above).

1433

12. Section 173-340-747 (9) (b) (ii) (Page 137):

This section does not make it clear how one will go about making empirical demonstrations of residual saturation. Ecology should elaborate on this section due to the reasons mentioned in ATA's comments regarding Section 173-340-747(9) (e.g., Comment A.11, above). Also, Ecology should clarify what is its recommended procedure for "measuring the attenuating capacity of non-contaminated soil between the non-aqueous phase liquid-contaminated soil and the ground water table."

1434

13. Section 173-340-750 (9) (Page 150):

This section explains how compliance with air cleanup standards can be demonstrated. It appears that the only way to demonstrate compliance is through air sampling or soil vapor sampling. If one chooses not to perform air sampling and instead uses soil and ground water cleanup standards, can one do so? If so, how?

1435

14. Sections 173-340-740 & 173-340-745 -Tables 740-1 & 745-1 (in section labeled TABLES)

These tables do not explicitly state the standards for jet fuel. Jet fuel has different properties and breaks down more quickly than diesel fuel, which one might try to use as a default absent a jet fuel category. Ecology should either establish jet-fuel specific standards or allow individuals undertaking a risk-based analysis to factor in the lower risks posed by this material. Please clarify.

* * * * * * * * * * * *

Thank you for this opportunity to comment on the MTCA regulatory revisions. Should you have any questions about ATA's comments, please give me or Wallid Kazi, ATA's Remediation Coordinator (714) 662-2757, a call.

Sincerely yours,

Scott F. Belcher
Managing Director, Environmental Affairs

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reply 60
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ASARCO

Thomas L. Aldrich
Site Manager
Tacoma Plant

January 18, 2000

Trish Akana, Rules Coordinator
Toxics Cleanup Program
Department of Ecology
P. O. Box 47600
Olympia, WA 98504-7600

Re: Comments on Proposed Amendments to the Model Toxics Control Act Regulation

Dear Ms. Akana:

ASARCO Incorporated (Asarco) thanks the Department of Ecology for an opportunity to provide comments on the proposed Model Toxics Control Act (MTCA) regulation. Asarco has followed the amendment process since the passage of ESHB 1810 in 1995. Asarco appreciates the amount of time and effort that has been put into the process by so many stakeholders as well as the department, and is hopeful that the final rule that is issued by Ecology will reflect the interests of those stakeholders, particularly as reflected in the MTCA Policy Advisory Committee (PAC) Report issued in December, 1996.

1070

Has the amended rule met the goals of Ecology and the PAC?

Although Ecology stated its intent to make environmental cleanups fairer, easier to understand, more flexible, less ambiguous, and less expensive, Asarco is concerned that the proposed amendment has not succeeded in reaching those goals. From our review of the proposed regulation, it appears that cleanups will be slower, more complex, and more expensive than under the existing rule. A pertinent threshold question may be whether these changes will result in greater protection of human health and the environment, the goal of the Model Toxics Control Act.

Asarco is particularly concerned with what it sees as a disconnect between the language of the Policy Advisory Committee Report and the draft rule. Ecology has prepared a chart outlining the changes to the rule and identifying the source of each

cc

1070 cont. change. Ecology claims many of the revisions are the result of incorporating "new science" from the Science Advisory Board (SAB) or from the Duwamish Coalition Project Oversight Group (POG). Where new science has been used to amend the regulation, it is reasonable to anticipate that Ecology would hold itself to the same standard to that to which it holds other PLPs. *See* Subsection –702(15)-(16). Instead, Ecology is asking the public simply to trust Ecology that whatever new science the department has chosen to adopt is appropriate without the opportunity by the public to review the bases for the changes. This is contrary to the PAC recommendations and the language of the draft rule.

1071 **Risk-based cleanup.**

In the enabling legislation, ESHB 1810, the legislature directed the PAC to "review, provide advice, and develop recommendations on," among other topics, "cleanup standards and cleanup levels, including the use of site-specific risk assessment." Developing regulations for the use of site-specific risk assessments was a priority for the PAC. The PAC recommended that the MTCA regulation be revised to allow the use of site-specific risk assessment in setting cleanup levels, remediation levels, or in making remedial action decisions under MTCA. The PAC further recommended the use of alternative exposure scenarios where appropriate for residential, commercial, and industrial sites, as well as the calculation of reasonable maximum exposures (RME) to integrate a realistic estimate of current and future site use into the remedy selection process.

Although the development and use of site-specific risk assessment is addressed in Subsection –708, in application the rule does not facilitate the use of a realistic evaluation of potential risks in making remedy selection decisions. In the case of groundwater, for example, the regulation stipulates that the RME for groundwater use will be drinking water at almost all sites, with only a few limited exceptions. By restricting the ability of a party to establish a site-specific RME based on the presence of non-drinking water, the rule effectively restricts the integration of a site-specific risk assessment. This is contrary to the intent of the legislature and the PAC.

The groundwater scenario is only one example. A general review of the regulation demonstrates that, although a process for developing a site-specific risk assessment is provided in -708, Ecology has made it virtually impossible to incorporate risk into remedy selection decisions in practice.

1072

"Technically possible" as a criterion.

Ecology has used the standard of "technical possibility" as the default standard for evaluating cleanup actions and remedies. There is very little in the world of remediation that is not technically possible if a PLP is able to put unlimited resources to the task. However, this is not the stated goal of MTCA. If an alternative is technically practicable, and it can be demonstrated that the remedy will be protective of human health and the environment, in consideration of the anticipated current and future uses, the remedy should be acceptable. The concept of technical practicability is the appropriate standard.

Technical practicability incorporates a disproportionate cost analysis in determining whether a similar level of protection is available at a lower cost. The PAC Report approved the use of the cost test for analyzing alternatives and selecting a remedy. However, counter to the recommendations of the PAC, Ecology has unilaterally incorporated technical possibility as the criterion for evaluating cleanup actions. The use of technical possibility as a threshold criterion unnecessarily restricts options available to PLPs, including the selection of a cost-effective and often more expedient solution to protecting human health and the environment. The criterion should be replaced throughout the rule with technical practicability.

1073

Remediation levels.

The PAC specifically directed Ecology to revise the regulation to incorporate the concept of remediation levels as a valid alternative for implementing remedy selection. According to the PAC, when selected as part of a cleanup action plan that could include institutional controls, remediation levels would be considered protective of human health and the environment even though hazardous substances may be left on site at concentrations above cleanup levels. Although the concept of a remediation level has been defined in the rule (*see, e.g.,* Subsection -350(11)), in the remedy selection provisions, and elsewhere where cleanup levels are discussed, Ecology has failed to incorporate the concept of remediation levels appropriately. For example, where a remediation level may be established using site-specific information and a site-specific risk assessment, the default scenarios mandated by Ecology eliminate the opportunity to incorporate a remediation level. Even where a remediation level may be allowed, the regulation is ambiguous, leaving the PLP confused. The rule should be revised to integrate the concept of remediation levels fully and to facilitate their application as directed in the PAC Report.

1074

Remedy selection.

The PAC Report states that the hierarchy or treatment technologies will no longer be a stand-alone criteria for remedy selection. Although the hierarchy should be used as a guide to analyze the long-term effectiveness of alternatives, and as a list of options to evaluate, the prior list would be replaced by a revised set of remedy selection criteria already existing in the current rule, *e.g.,* protectiveness of human health and the environment, permanence, cost, etc. In direct contravention of this directive, the treatment hierarchy permeates the current regulation. Priority is given to the selection of a treatment technology over other remediation methods. For example, a PLP can use a risk-based Method C cleanup level only after all practicable methods of treatment are used. However, it may be possible to meet Method C levels without relying on treatment. The rule eliminates that option for a PLP. Ecology should revise the rule throughout to eliminate the preference for treatment as it was specifically directed by the PAC.

1075

Cleanup levels.

The PAC did not agree to open Method A for revisions to the cleanup levels. However, Ecology has accomplished the revisions indirectly. At the request of the stakeholders, the PAC recommended that the existing soil-to-groundwater approach, using the "100 times" (100X) formula, be amended to incorporate alternative options to address those situations in which the 100X approach would be inappropriate, for example, where the result was either unduly conservative or underprotective. Instead, Ecology eliminated the 100X approach and substituted methodology that is confusing to execute and inappropriate under many site conditions. As a result of the revisions to the soil-to-groundwater formulae, Ecology revised the Method A tables, without appropriate stakeholder input or review. Ecology should reinsert the 100X formula as an additional method in subsection -747 of the regulation, and any revisions to the Method A tables should be subject to appropriate stakeholder review and discussion. Ecology should also work with stakeholder input to revise the formulae in subsection –747.

1076

Institutional controls.

The PAC Report directed Ecology to clarify the institutional controls provisions of the regulation to "ensure that institutional controls are judged by the same remedy selection standards, including protectiveness and long-term effectiveness, as are used to judge other cleanup actions." What the PAC did not direct Ecology to do was to deny the use of institutional controls where it would be "technically possible to implement a cleanup action alternative that utilizes a more permanent cleanup action for all or a portion of the site." *See* Subsection –440(5). The effect of the restrictive clause is to

prohibit the use of institutional controls where, in consideration of the risk presented at a site, such tools would provide adequate protection. For example, institutional controls such as limited access or restrictive covenants might be sufficiently protective of the risk posed by hazardous substances left on a site, obviating the need for a more permanent alternative that is technically possible, but is available at a greater cost and would require longer to implement. However, as written, this option is unavailable.

The PAC directed Ecology to provide a regulation that was more flexible, more cost-effective and easier to use. Institutional controls were a primary feature of those goals. However, in spite of much negotiation over language among the stakeholders, Ecology effectively eliminated the realistic use of institutional controls by imposing the technical possible standard.

1077

Applicability of the revised rule.

In Subsection –702(12), the rule states that the cleanup level that should apply to a cleanup action under an order or decree with Ecology shall be that in effect at the time the final cleanup action plan is issued for the release. Contrary to the goals of the PAC, this has the effect of potentially wasting time and money that has been expended on a remedial investigation/feasibility study for a site. An RI/FS is designed to investigate the hazardous substances that have been released at a site, based on the cleanup standards in effect in the MTCA regulation. If a different regulation is applied to the final cleanup action plan, it is very likely that a PLP will have to redo much of the RI/FS, potentially at substantial cost. Further, the time between the release and actual remediation of the release will be extended of necessity. A more reasonable alternative would be to apply the cleanup levels that are in effect at the time the order or decree for the RI/FS is issued. This would allow a PLP reasonably to rely upon the work that the PLP undertakes to investigate the site and to analyze realistic remediation alternatives. Further, if the rules of the game are changed at the cleanup action plan stage, with additional costs to be incurred, Ecology runs the risk that a formerly cooperative PLP may resist entering into a consent decree for the remediation stage of the project.

1078

The terrestrial ecological evaluation process is not yet adequately designed or incorporated into the rule.

Perhaps the major new provision in the rule is Ecology's proposal to evaluate the effects of a release on terrestrial ecological receptors. At every site where soils are affected by a release, Ecology requires either a site-specific ecological evaluation, or a demonstration that the site is exempt from the requirement. *See* –490(2). If a site qualifies for an exclusion, the rule generally requires institutional controls, such as

restrictive covenants on site use. The imposition of institutional controls can only be avoided in many cases by conducting the more costly, detailed evaluation. This was not the intended consequence of the PAC recommendation or the rule negotiations.

1079 The eco-risk rule was developed largely outside the negotiated rulemaking process. There was little stakeholder input. There is a real possibility that an unintended consequence of adopting this portion of the rule as it is drafted will be the destruction of habitat by landowners anxious to avoid the long arm of eco-risk. The rule should be rewritten with a stakeholder group providing input and review.

1080 **Cost of citizen technical advisor.**

Asarco strongly objects to the proposal that a PLP should underwrite the cost of a citizen technical advisor, as proposed at subsection –340-550. There is no authority in the Model Toxics Control Act, RCW 70.105D, that such a cost is somehow a "remedial action cost." Although Ecology is authorized, and in fact required to provide technical assistance to the public and to PLPs, to extend this authority to recover such costs from PLPs is not within the language of the Act. Asarco requests that this language and the requirement for payment of a citizen technical advisor be deleted from the rule.

Asarco appreciates the opportunity to comment and looks forward to appropriate revisions in light of the comments that Ecology is receiving. Please contact me at (253) 756-0203 if you have questions or need additional information.

Very truly yours,

Thomas L. Aldrich/AGF

Thomas L. Aldrich
Project Manager

Akana, Trish Alicia

From: Greg Wingard [gwingard@earthlink.net]
Sent: Tuesday, January 18, 2000 4:11 PM
To: Akana, Trish Alicia
Subject: Re: Washington State Register, Issue 99-22

MTCAgwcom1.1500.doc

Trish:

Additional comments.

Thanks,

Greg Wingard

To: Jim P., Curtis D., Pete K., Trish A.

From: Greg Wingard, Waste Action Project

Re: Our favorite subject, MTCA

January 15, 2000

My comments yesterday addressed a number of issues, including a specific brown field site, the SeaCon site in South Park, just south of Seattle Washington. I wanted to address some additional comments to you based on specific case examples. These examples illustrate what the revised rule should specifically not allow. 1081

The first is the previously mentioned SeaCon site. Since the site cleanup was allegedly being done as an independent cleanup under the Model Toxics Control Act, Ecology has had very little involvement with the site, other than a minor advisory role with King County DDES. Even this occurred only after DDES begged for help in an area they are not trained to deal with and have no previous experience with, ie., cleanup of contaminated sites.

The following is just a short, and incomplete list, of what went wrong at the site. While there has been previous sampling at the site, the present owner did not bother to investigate, or define the nature and extent of contamination at the site. Contamination that was not within the area needed for the property owner's plans for commercial development (putting up two buildings), has been abandoned, and allowed to discharge into waters of the state. Part of this contamination is actually part of the bank of Hamm Creek. While there was some provision to button up the site, mainly through conditions of a King County Grade and Fill permit, the materials required to button up the site were not stockpiled on the site, as required. This condition was still existent, even after storm events had occurred at the site. Site work was allowed during the height of the winter storm season. Even after it was known that a big storm was on the way, the site was not buttoned up. This work was taking place in immediate proximity to a salmon bearing stream, which has populations of a number of salmonids, including the threatened Chinook Salmon. As you are aware, the Chinook Salmon was recently listed as threatened, under the Endangered Species Act. High pH discharges occurred during the Chinook run on the Duwamish River and Hamm Creek. Please explain, in concrete terms, how the revised rule will address such abuses by independent cleanups, including substantial penalties that will inspire compliance, as state and federal statutes require. If Ecology action (or lack of action) at this site is indicative of how the revised MTCA will be implemented, please indicate how the environmental impacts related to such action(s), or lack of same, were scoped, analyzed, and mitigated for in the MTCA Rule Amendments Draft Environmental Impact Statement. I am interested in how Ecology plans to implement the MTCA Rule revision at sites (including independent remedial actions) in such a way as to not constitute a take of a listed species, such as the Chinook Salmon, and Bull Trout. Also, what specific action is, or will Ecology take to address this specific site, SeaCon, in South Park?

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1085 The second site is the SeaTac International Airport, run by the Port of Seattle. It has come to my attention, that the Northwest Regional Office of Ecology, has reached agreement with the Port of Seattle on a criteria for contaminated fill for import into SeaTac Airport, and used as part of the proposed Third Runway Project, and other construction related projects at this site. This agreement is embodied in the "Clean Fill Criteria", sent from the NRO to Ecology Headquarters[1]. The document defines clean fill as that fill which in most cases does not exceed the MTCA method A standards, with allowance for exceeding the standard, on a case by case basis. Besides the use of the term clean fill being an obscene perversion of the English language, in this instance, a number of concerns are raised. It was never intended, and is an incredible abuse of the MTCA standards, to use them to define clean fill so as to allow a polluter to place contaminated fill in a previously uncontaminated area, and contaminate that area up to or in exceedance of the MTCA method A standards. The MTCA standards are to be used to provide standards for the cleanup of contaminated sites, not as permissible levels of contamination that polluters can get away with. It is hard to comprehend why anybody in Ecology would advocate for allowing polluters to create new contaminated sites by importing contaminated waste into clean sites, or uncontaminated portions of a site. At SeaTac Airport, the primary area the fill is proposed to be placed in is the west side of the airport, a location that Ecology has stated as a matter of record[2], is currently uncontaminated. The area is also currently a major source of immediate recharge for Walker Creek, and Miller Creek. It is also overlying, a provides some level of recharge to a sole source aquifer, the Highline Aquifer, the source of drinking water for hundreds of thousands of people. To allow polluters to contaminate property that is currently not contaminated, which recharges critical salmon bearing streams, and overlays a sole source aquifer up to, or in exceedence of the MTCA standards, is in my opinion criminal, and must not be allowed under the revised MTCA regulations. Please explain how gross abuses of the MTCA regulations, such as the above example, will be prevented under the revised rule. Please explain how the impacts of the use of the MTCA regulations in the manner explained above, and documented in the Ecology policy document entitled, "Clean Fill Criteria" (cited above), was considered, and addressed, or mitigated in the Model Toxics Control Act Proposed Rule Amendments, Draft Environmental Impact Statement, November 17, 1999.

1086 At the same site, SeaTac Airport, there is another agreement with the Port of Seattle which would allow contractors to disturb MTCA wastes, in MTCA site(s), without addressing the wastes they uncover, with the exception of the wastes they actually excavate while working. The following letter(s) addresses this issue:

cc:

Mr. Roger Nye
Department of Ecology
Northwest Regional Office
3190 - 160th Avenue SE
Bellevue, WA 98008

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[1] Clean Fill Criteria, from Roger Nye, NRO to Raymond Hellwig, NRO and Tom Luster HQ, December 3, 1999

[2] See the recent Ecology Agreed Order with the Port of Seattle, on the SeaTac Airport, discussion on the rational for definition of the area referred to as the Aircraft Operation and Maintenance Area.

SENT BY FAX (425) 649-7161

January 11, 2000

Dear Mr. Nye:

It has been close to three months since I wrote you the letter enclosed below, which addressed some very serious concerns about the responsibilities of the Department of Ecology regarding how the Model Toxics Control Act is implemented at the Port of Seattle, SeaTac International Airport. As of yet, I have not received a reply from you. While I realize that you have a busy schedule, the issues I raised are serious and deserving of a reply in a reasonable time frame. It seems to me that three months is pushing the definition of reasonable.

Please contact me as soon as possible, to let me know, when I can expect your written response to the letter I sent you last October. If there is some particular problem responsible for the delay, I would appreciate knowing what it is.

If more convenient than taking the time to write in response to this letter, my phone number is listed below.

Sincerely,

Greg Wingard
PO Box 4051
Seattle, WA 98104-0051
(206) 322-3061

cc: Al Furney, RCAA

Mr. Roger Nye
Department of Ecology
Northwest Regional Office
3190 - 160th Avenue SE
Bellevue, WA 98008

October 20, 1999

Re: SeaTac Airport waste handling and MTCA

Dear Mr. Nye:

I am writing you about a subject we have discussed previously, which has come up again. If you remember, some time ago we discussed an internal memo from a Port of Seattle (POS) consultant which stated that POS had reached agreement with Ecology regarding Model Toxics Control Act waste uncovered during proposed construction activities at the airport. To summarize briefly, Ecology OK'd allowing contractors to be responsible for only the waste they directly uncovered. Any adjacent waste would be dealt with by POS, or others, at some later time.

In context of the large construction projects currently scheduled at the airport, this leaves me with some serious concerns. Major POS proposed construction will occur in locations known or suspected of containing wastes at levels exceeding the Model Toxics Control Act (MTCA) cleanup levels. Some of these locations are in previously listed MTCA site locations, such as the Aircraft Operations and Maintenance Area (AOMA). It appears there are serious defects with such plans. Work is also scheduled where historic (during the time of the Pollution Control Commission, or Water Pollution Control Commission) waste disposal practices, involving multiple disposal pits or lagoons occurred. There are obvious, serious defects, with any such plans. Allowing construction activities in areas known to contain MTCA wastes, without addressing the nature and extent of the contamination is not consistent with MTCA policy. If you believe otherwise, please explain your rational. Please also explain how the work contemplated in the AOMA, is consistent with the Agreed Order.

If discovered waste is not remediated during site disturbance activities, POS will continue to build buildings, runways, aprons, or other structures or surfaces, in ongoing violation of the MTCA law. Once such structures, or surfaces are built, POS will (as we are both aware they have in the past) claim they can't do anything about the contamination due to the structure, surface, or critical nature of the use of such structure or surface they just built, which can't possibly be interrupted for something as unimportant as cleaning up their waste. What this amounts to is if Ecology allows large scale site disturbance and construction activity, without addressing contamination in the area, the waste will be abandoned. It appears the main reason for this approach, is to allow POS to have an accelerated construction schedule, where they get to ignore any waste they don't actually turn over with a shovel. Once again, I believe that such an approach is a serious violation of the spirit and intent of MTCA.

It is also important to point out, when the construction activity occurs, and contamination is found, "clean fill" will be used to replace any removed contaminated material. Since the surrounding contaminated material will not be removed, the result will be to simply contaminate

the new "clean" material by contact with the remaining, surrounding contaminants. This is also not consistent with MTCA policy. If it is your position that it is consistent, please explain.

I am also concerned that some portion of the construction work that is planned will create new preferential pathways for contaminants where such pathways do not currently exist. Since waste that may come in contact with these pathways will not be removed, the odds are high that the construction activities will cause migration of contaminants into media not presently contaminated. This also seems to be inconsistent with MTCA policy, if not outright illegal. To my knowledge this issue has not been analyzed at the planning, State Environmental Policy Act level, or under a Remedial Investigation/Feasibility Study (RI/FS) per MTCA. Further, Ecology has no provisions in place to take appropriate actions to prevent migration of contaminants from occurring.

In summary, while it is clear why the above approach would appeal to POS, it is not clear why Ecology would, in anyway, endorse such an approach. The above approach will allow MTCA wastes to be disturbed with no plan, such as a RI/FS in place for addressing the contamination (excepting the highly localized contamination actually dug up), construction will be allowed in MTCA sites without addressing statutory and policy requirements, structures or surfaces will be placed that curtail, or make future cleanup impossible, clean fill will likely be contaminated by surrounding waste allowed to remain in place, and preferential pathways for contaminants will be created without elimination of the contaminants that could migrate. To say the least, this does not appear to be a rational approach to addressing POS or Ecology duties and obligations under the Model Toxics Control Act. Please let me know how these concerns will be addressed.

Sincerely,

Greg Wingard
PO Box 4051
Seattle, WA 98104-0051

cc: RCAA
CASE

I have waited for a reply to this letter for three month, and have tried contacting Ecology staff by fax and phone, so far without response. If it is the position of Ecology that such activity as described above is consistant with the revised rule, please explain how the impacts from this were described, analyzed and mitigated for in the DEIS cited above. As mentioned in the previous example of POS related activities, it is unacceptable to allow such activities to occure on top of a sole source aquifer, which the State of Washington is obligated to protect to the benefit of those who are drinking the subject water.

Thank you for considering these issues, I look forward to your response.

Greg Wingard,
Executive Director
Waste Action Project
PO Box 4832
Seattle, WA 98104-0832
(206) 622-7803

The letter(s) above spell out concerns about how Ecology is allowing waste to be abandoned at the SeaTac Airport sit. In addition, Ecology is going a step further, actually cooperating with POS in assuring additional waste, the nature and extent of which has not, to date, been defined, will also be abandoned. Even worse, work will take place in contaminated sites with no focus or overall plan guiding the work. Waste will be allowed to migrate through new uncontaminated media, and allowed access to new preferential pathways, which will insure further migration of the waste. Please explain how the revised rules will prevents this kind of piece mealing, and bad practices from being implemented. If the MTCA rule revisions will not prevent such piece mealing, and bad practices, please explain how the Draft EIS considered, analyzed, and mitigated for impacts such as those outlined above.

1086 cont.

While there are many other examples, the ones outlined above are ones I have worked on recently and have available documentation on.

Thank you for your consideration of these issues, I look forward to your response.

Sincerely,

Greg Wingard,
Executive Director
Waste Action Project
PO Box 4832
Seattle, WA 98104-0832

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Akana, Trish Alicia

From: Greg Wingard [gwingard@earthlink.net]
Sent: Tuesday, January 18, 2000 4:17 PM
To: Akana, Trish Alicia
Subject: Re: Washington State Register, Issue 99-22

MTCAgwcom1,1500.d
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Trish:

1087 One last comment. There has been some discussion about the Method A level, particularly in regard to gasoline, and benzene. The present numbers in the revised rule are not protective enough. Scientific literature as reviewed by Department of Ecology justifies stricter numbers, and the Method A levels should be modified to conform to what science has to say, more conservative numbers are justified.

Thanks,

Greg Wingard

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SEATTLE CITY ATTORNEY
MARK H. SIDRAN

January 18, 2000

Trish Akana
Department of Ecology
Toxics Cleanup Program
P.O. Box 47600
Olympia, WA 98504-7600

Re: City of Seattle's Comments to Proposed MTCA Regulations

Dear Ms. Akana:

On behalf of the City of Seattle ("City"), I am submitting through this letter the following comments to Ecology's proposed MTCA regulations:

1088

1. WAC 173-340-330 (7)(a)(iii)(G) – Removing sites from the Hazardous Sites List.

Sites, which have completed all appropriate cleanup actions, may still not meet ground water standards if upgradient, off-site sources or ground water contamination lead to exceedances of standards. We strongly object to including Section (7)(a)(iii)(G) as a requirement in the situation outlined above. It places such sites in a punitive limbo whereby they could never get off the hazardous sites list, requiring them to perform unnecessary monitoring and reporting when they have eliminated any contribution they may be making to a contaminant plume. The City recommends that the language be revised to read: "(G) For sites with releases to ground water, it has been demonstrated the site meets ground water cleanup levels at the designated point of compliance, *unless it can be demonstrated that the site itself is not contributing to any exceedance of cleanup levels."*

1089

Further, condition (7)(a)(iii)(A) for removing sites, where the selected remedy includes containment, should be changed to allow for delisting of municipal solid waste (MSW) landfill sites which are only performing MSW operations, such as methane gas collection, surface water diversion and leachate collection. As now worded, MSW landfills that were listed as MTCA hazardous sites would be penalized simply for complying with the requirements of the Minimum Functional Standards, even after completion of all MTCA cleanup actions.

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Comments Submitted by e-mail on 1/18/00

1090 2. WAC 173-340-350(9)(e) Institutional Controls.

Subsection (ii) states that "Cleanup actions shall not rely primarily on institutional controls and monitoring where it is technically *possible* to implement a cleanup action alternative that uses a more permanent cleanup action for all or a portion of the site." The word "possible" should be deleted and the word "practicable" should be substituted to be consistent with the MTCA regulations in general, and especially WAC 173-340-360 for selecting a cleanup alternative that is permanent *to the maximum extent practicable.* Similarly,"practicable" should be substituted for "possible" in WAC 173-340-440 (5) on this basis as well.

1091 3. WAC 173-340-350(13)(d)(iii) – Restoration time frame.

The City objects to the wording of this subsection that states that remedial actions performed on a site will be considered interim until offsite background concentrations are controlled sufficiently to attain cleanup levels. This interim status places the site in legal limbo and the site owner or operator has no ability to clean up offsite sources or lower natural background contamination to meet cleanup levels and attain a final remedy. This language creates a disincentive for businesses or local governments to undertake independent cleanups, especially brownfield-type redevelopments in areas of widespread contamination because there is no certainty that they will ever get a No Further Action letter or final closure. The City is currently working with Ecology to stimulate brownfield development in the Duwamish and Interbay industrial corridors in the City, which this language would discourage.

1092 4. WAC 173-340-720(4)(b)(iii) – Free Product Limitation.

This subsection is not precisely defined and could easily result in cleaning up any sheen or film in ground water, which may be unnecessary and costly.

1093 5. WAC 173-340-720(9)(d)(ii)--Sites near, but not abutting, surface water.

The Department should delete the requirement that "the affected property owners between the source of contamination and the surface water body must agree to the use of the conditional point of compliance." Such permission is not necessary because: (1) ground water is not owned by property owners, but is water of the State; (2) the plume clause in the MTCA protects these property owners; and (3) the offsite point of compliance is protective of human health and the environment because of the natural

attenuation that occurs. This permission requirement should be deleted in favor of *notice* to these property owners as is required in the area-wide point of compliance subsection.

Actual "agreement" as proposed from each property owner will be difficult and often impossible due to absenteeism, apathy and lack of interest. Those truly interested property owners will have an opportunity to comment and such comments should be taken into consideration in determining the point of compliance.

1094

6. WAC 173-340-704 – Use of Method A.

It is our understanding that Method A numeric cleanup levels were lowered because of the soil to ground water pathway. These more stringent levels may have a significant economic impact on small businesses in industrial corridors such as the Duwamish or Interbay. Thus, if the party doing the cleanup can show that there is no soil to ground water migration pathway, i.e., the ground water is clean, then the current Method A numbers should apply. For example, leach testing should be allowed to establish whether a pathway exists. This section should be revised to reflect this reasonable and protective approach.

1095

7. WAC 173-340-750 – Cleanup Standards to Protect Air Quality.

The cleanup standards for the other media – soil, surface and ground water – allow for an adjustment to cleanup levels based on natural background. This adjustment should be added to the air quality cleanup standard because a property owner cannot control area-wide air quality, and background levels should be factored into setting cleanup levels.

1096

8. WAC 173-340-7490-94 – Terrestrial Ecological Evaluations.

The City is concerned about this new feature of MTCA because the City over time acquires much of the remaining open land in urbanized areas. If eco-risk standards are unreasonably stringent as applied to such land, then open space and parks programs will suffer because this new regulation creates a significant disincentive to the acquisition of open space and park properties. These properties will not be able to off-ramp from the regulation because of the Tier I criterion of "no contamination within six (6) feet of the soil surface. This overly-stringent criterion should be changed to two (2) feet of clean soil cover, which is sufficient for vegetation and soil biota to thrive without deleterious effects.

A few City representatives would like to meet with some Ecology representatives to discuss these comments in more detail, and then the City would like to provide more detailed comments within two weeks of such a meeting. Thank you for considering the City's comments. You may call me to set up a meeting regarding these comments at 206-233-2158.

Very truly yours,

MARK H. SIDRAN
Seattle City Attorney

By: Peter E. Hapke
Peter E. Hapke
Assistant City Attorney

Cc: Tim Croll, SPU
Marrell Livesay, Parks

Akana, Trish Alicia

From: Valentine, Melanie G. [MValentine@HEWM.COM]
Sent: Tuesday, January 18, 2000 2:03 PM
To: 'taka461@ecy.wa.gov'; '104626.151@compuserve.com'
Cc: Newlands, Marcia
Subject: MTCA Comment Letter

MTCAcmmt.rtf

Attached is the comment letter from Tom Aldrich for Asarco. It is also being sent today via facsimile and by U.S. mail.
<<MTCAcmmt.rtf>>

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January 18, 2000

Trish Akana, Rules Coordinator
Toxics Cleanup Program
Department of Ecology
P. O. Box 47600
Olympia, WA 98504-7600

Re: Comments on Proposed Amendments to the Model Toxics Control Act Regulation

Dear Ms. Akana:

ASARCO Incorporated (Asarco) thanks the Department of Ecology for an opportunity to provide comments on the proposed Model Toxics Control Act (MTCA) regulation. Asarco has followed the amendment process since the passage of ESHB 1810 in 1995. Asarco appreciates the amount of time and effort that has been put into the process by so many stakeholders as well as the department, and is hopeful that the final rule that is issued by Ecology will reflect the interests of those stakeholders, particularly as reflected in the MTCA Policy Advisory Committee (PAC) Report issued in December, 1996.

Has the amended rule met the goals of Ecology and the PAC?

Although Ecology stated its intent to make environmental cleanups fairer, easier to understand, more flexible, less ambiguous, and less expensive, Asarco is concerned that the proposed amendment has not succeeded in reaching those goals. From our review of the proposed regulation, it appears that cleanups will be slower, more complex, and more expensive than under the existing rule. A pertinent threshold question may be whether these changes will result in greater protection of human health and the environment, the goal of the Model Toxics Control Act.

Asarco is particularly concerned with what it sees as a disconnect between the language of the Policy Advisory Committee Report and the draft rule. Ecology has prepared a chart outlining the changes to the rule and identifying the source of each

change. Ecology claims many of the revisions are the result of incorporating "new science" from the Science Advisory Board (SAB) or from the Duwamish Coalition Project Oversight Group (POG). Where new science has been used to amend the regulation, it is reasonable to anticipate that Ecology would hold itself to the same standard to that to which it holds other PLPs. *See* Subsection –702(15)-(16). Instead, Ecology is asking the public simply to trust Ecology that whatever new science the department has chosen to adopt is appropriate without the opportunity by the public to review the bases for the changes. This is contrary to the PAC recommendations and the language of the draft rule.

Risk-based cleanup.

In the enabling legislation, ESHB 1810, the legislature directed the PAC to "review, provide advice, and develop recommendations on," among other topics, "cleanup standards and cleanup levels, including the use of site-specific risk assessment." Developing regulations for the use of site-specific risk assessments was a priority for the PAC. The PAC recommended that the MTCA regulation be revised to allow the use of site-specific risk assessment in setting cleanup levels, remediation levels, or in making remedial action decisions under MTCA. The PAC further recommended the use of alternative exposure scenarios where appropriate for residential, commercial, and industrial sites, as well as the calculation of reasonable maximum exposures (RME) to integrate a realistic estimate of current and future site use into the remedy selection process.

Although the development and use of site-specific risk assessment is addressed in Subsection –708, in application the rule does not facilitate the use of a realistic evaluation of potential risks in making remedy selection decisions. In the case of groundwater, for example, the regulation stipulates that the RME for groundwater use will be drinking water at almost all sites, with only a few limited exceptions. By restricting the ability of a party to establish a site-specific RME based on the presence of non-drinking water, the rule effectively restricts the integration of a site-specific risk assessment. This is contrary to the intent of the legislature and the PAC.

The groundwater scenario is only one example. A general review of the regulation demonstrates that, although a process for developing a site-specific risk assessment is provided in -708, Ecology has made it virtually impossible to incorporate risk into remedy selection decisions in practice.

"Technically possible" as a criterion.

Ecology has used the standard of "technical possibility" as the default standard for evaluating cleanup actions and remedies. There is very little in the world of remediation that is not technically possible if a PLP is able to put unlimited resources to the task. However, this is not the stated goal of MTCA. If an alternative is technically practicable, and it can be demonstrated that the remedy will be protective of human health and the environment, in consideration of the anticipated current and future uses, the remedy should be acceptable. The concept of technical practicability is the appropriate standard.

Technical practicability incorporates a disproportionate cost analysis in determining whether a similar level of protection is available at a lower cost. The PAC Report approved the use of the cost test for analyzing alternatives and selecting a remedy. However, counter to the recommendations of the PAC, Ecology has unilaterally incorporated technical possibility as the criterion for evaluating cleanup actions. The use of technical possibility as a threshold criterion unnecessarily restricts options available to PLPs, including the selection of a cost-effective and often more expedient solution to protecting human health and the environment. The criterion should be replaced throughout the rule with technical practicability.

Remediation levels.

The PAC specifically directed Ecology to revise the regulation to incorporate the concept of remediation levels as a valid alternative for implementing remedy selection. According to the PAC, when selected as part of a cleanup action plan that could include institutional controls, remediation levels would be considered protective of human health and the environment even though hazardous substances may be left on site at concentrations above cleanup levels. Although the concept of a remediation level has been defined in the rule (*see, e.g.,* Subsection -350(11)), in the remedy selection provisions, and elsewhere where cleanup levels are discussed, Ecology has failed to incorporate the concept of remediation levels appropriately. For example, where a remediation level may be established using site-specific information and a site-specific risk assessment, the default scenarios mandated by Ecology eliminate the opportunity to incorporate a remediation level. Even where a remediation level may be allowed, the regulation is ambiguous, leaving the PLP confused. The rule should be revised to integrate the concept of remediation levels fully and to facilitate their application as directed in the PAC Report.

Remedy selection.

The PAC Report states that the hierarchy or treatment technologies will no longer be a stand-alone criteria for remedy selection. Although the hierarchy should be used as a guide to analyze the long-term effectiveness of alternatives, and as a list of options to evaluate, the prior list would be replaced by a revised set of remedy selection criteria already existing in the current rule, *e.g.,* protectiveness of human health and the environment, permanence, cost, etc. In direct contravention of this directive, the treatment hierarchy permeates the current regulation. Priority is given to the selection of a treatment technology over other remediation methods. For example, a PLP can use a risk-based Method C cleanup level only after all practicable methods of treatment are used. However, it may be possible to meet Method C levels without relying on treatment. The rule eliminates that option for a PLP. Ecology should revise the rule throughout to eliminate the preference for treatment as it was specifically directed by the PAC.

Cleanup levels.

The PAC did not agree to open Method A for revisions to the cleanup levels. However, Ecology has accomplished the revisions indirectly. At the request of the stakeholders, the PAC recommended that the existing soil-to-groundwater approach, using the "100 times" (100X) formula, be amended to incorporate alternative options to address those situations in which the 100X approach would be inappropriate, for example, where the result was either unduly conservative or underprotective. Instead, Ecology eliminated the 100X approach and substituted methodology that is confusing to execute and inappropriate under many site conditions. As a result of the revisions to the soil-to-groundwater formulae, Ecology revised the Method A tables, without appropriate stakeholder input or review. Ecology should reinsert the 100X formula as an additional method in subsection -747 of the regulation, and any revisions to the Method A tables should be subject to appropriate stakeholder review and discussion. Ecology should also work with stakeholder input to revise the formulae in subsection –747.

Institutional controls.

The PAC Report directed Ecology to clarify the institutional controls provisions of the regulation to "ensure that institutional controls are judged by the same remedy selection standards, including protectiveness and long-term effectiveness, as are used to judge other cleanup actions." What the PAC did not direct Ecology to do was to deny the use of institutional controls where it would be "technically possible to implement a cleanup action alternative that utilizes a more permanent cleanup action for all or a portion of the site." *See* Subsection –440(5). The effect of the restrictive clause is to

prohibit the use of institutional controls where, in consideration of the risk presented at a site, such tools would provide adequate protection. For example, institutional controls such as limited access or restrictive covenants might be sufficiently protective of the risk posed by hazardous substances left on a site, obviating the need for a more permanent alternative that is technically possible, but is available at a greater cost and would require longer to implement. However, as written, this option is unavailable.

The PAC directed Ecology to provide a regulation that was more flexible, more cost-effective and easier to use. Institutional controls were a primary feature of those goals. However, in spite of much negotiation over language among the stakeholders, Ecology effectively eliminated the realistic use of institutional controls by imposing the technical possible standard.

Applicability of the revised rule.

In Subsection –702(12), the rule states that the cleanup level that should apply to a cleanup action under an order or decree with Ecology shall be that in effect at the time the final cleanup action plan is issued for the release. Contrary to the goals of the PAC, this has the effect of potentially wasting time and money that has been expended on a remedial investigation/feasibility study for a site. An RI/FS is designed to investigate the hazardous substances that have been released at a site, based on the cleanup standards in effect in the MTCA regulation. If a different regulation is applied to the final cleanup action plan, it is very likely that a PLP will have to redo much of the RI/FS, potentially at substantial cost. Further, the time between the release and actual remediation of the release will be extended of necessity. A more reasonable alternative would be to apply the cleanup levels that are in effect at the time the order or decree for the RI/FS is issued. This would allow a PLP reasonably to rely upon the work that the PLP undertakes to investigate the site and to analyze realistic remediation alternatives. Further, if the rules of the game are changed at the cleanup action plan stage, with additional costs to be incurred, Ecology runs the risk that a formerly cooperative PLP may resist entering into a consent decree for the remediation stage of the project.

The terrestrial ecological evaluation process is not yet adequately designed or incorporated into the rule.

Perhaps the major new provision in the rule is Ecology's proposal to evaluate the effects of a release on terrestrial ecological receptors. At every site where soils are affected by a release, Ecology requires either a site-specific ecological evaluation, or a demonstration that the site is exempt from the requirement. *See* –490(2). If a site qualifies for an exclusion, the rule generally requires institutional controls, such as

restrictive covenants on site use. The imposition of institutional controls can only be avoided in many cases by conducting the more costly, detailed evaluation. This was not the intended consequence of the PAC recommendation or the rule negotiations.

The eco-risk rule was developed largely outside the negotiated rulemaking process. There was little stakeholder input. There is a real possibility that an unintended consequence of adopting this portion of the rule as it is drafted will be the destruction of habitat by landowners anxious to avoid the long arm of eco-risk. The rule should be rewritten with a stakeholder group providing input and review.

Cost of citizen technical advisor.

Asarco strongly objects to the proposal that a PLP should underwrite the cost of a citizen technical advisor, as proposed at subsection –340-550. There is no authority in the Model Toxics Control Act, RCW 70.105D, that such a cost is somehow a "remedial action cost." Although Ecology is authorized, and in fact required to provide technical assistance to the public and to PLPs, to extend this authority to recover such costs from PLPs is not within the language of the Act. Asarco requests that this language and the requirement for payment of a citizen technical advisor be deleted from the rule.

Asarco appreciates the opportunity to comment and looks forward to appropriate revisions in light of the comments that Ecology is receiving. Please contact me at (253) 756-0203 if you have questions or need additional information.

Very truly yours,

Thomas L. Aldrich
Project Manager

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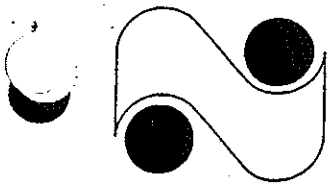

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January 18, 2000

Ms. Trish Akana
Rules Coordinator
Toxics Cleanup Program
Department of Ecology
P.O.Box 47600
Olympia, WA 98504-7600

Re: Northwest Pulp & Paper Association Comments on Proposed Amendments to the Model Toxics Control Act Cleanup Regulation

Dear Ms. Akana:

The Northwest Pulp and Paper Association (NWPPA) represents the majority of pulp and paper mills in Washington State. Our members have conducted a considerable number of cleanups pursuant the Model Toxic Control Act Cleanup Regulations, participated in various committees on redrafting the rules, and will be significantly impacted by the revisions as currently proposed. In our comments, we will be addressing mostly policy issues.

NWPPA endorses and incorporates by reference those comments submitted by The Weyerhaeuser Company. The Association also supports comments submitted by Western States Petroleum Association, as well as the Association of Washington Businesses (AWB).

I. NWPPA's Position

1097 A. The Department of Ecology should delay the proposal and adoption of these regulations until such a time as rule language is developed which adequately and correctly reflects the recommendations of the PAC, technical requirements are adequately reviewed, and the revisions meet the goals set forth by Ecology.

1098 B. It is NWPPA's view that the regulations can be vastly improved if PAC recommendations are consistently integrated into the regulations instead of Ecology staff recommendations, which attempt to circumvent the intent of the PAC negotiated rule process.

Comments submitted by e-mail 1/18/00

1099 C. NWPPA recommends that Ecology reclaim and build on the MTCA ethic that emerged in the early years after initial passage of the act, namely independent voluntary cleanups. To preserve and promote this ethic, Ecology needs to dedicate itself to producing clear and understandable rules that can be applied by a reasonably educated affected party.

II. General Comments

1100 A. From the beginning of the effort to revise the MTCA regulation in 1995, the stated goal has been to make environmental cleanups "fairer, easier to understand, more flexible, less ambiguous and less expensive." Ecology has restated this goal many times in its various public documents including its most recent fact sheets issued in November of 1999. These revisions do not meet any of the stated goals.

1101 B. We appreciate that Ecology has attempted to make this rule more understandable by changing the previous draft, however, the integration of various risk assessment scenarios, the use of confusing terrestrial ecology provisions, lack of consistency with PAC recommendations, and insertion of more regulatory language is counter productive. In essence, implementing all provisions of this new draft is virtually impossible. The Governor's Executive Order 97-02, states that "*...rules be written and organized so they may be easily understood and used by people who are affected by them.*" As with the prior draft, this version of the rule still does not conform to regulatory reform objectives in that it is not understandable, extremely complex, and is virtually impossible to apply as currently written.

1102 C. The draft regulations are long, ambiguous, inflexible, unclear, and fraught with arbitrary determinations made by Ecology. The drive to adopt these regulations as currently written will promote misunderstandings and increase the possibility of legal challenges in the future.

1103 D. Rules in Washington must achieve two basic tenants; these are: (1) understandability and (2) the ability of a reasonable person to ascertain what is expected. The MTCA revisions are so confusing and unwieldy that experienced environmental managers will be hard pressed to understand, let alone implement these revisions unless they have been members of the PAC or Science Advisory Committee for several years. The complexity of these regulations is telling based on the need for yet another technical advisor necessary to explain implementation of these provisions to the public. As regulations become more complex and harder to apply, less actual cleanup and environmental protection will take place. This is not the only regulation that the regulated community has been confronted with recently that is unnecessarily confusing, inflexible and in complete antithesis to its stated goals. Ecology needs to reevaluate this regulation and take appropriate steps to accurately reflect the PAC consensus process instead of Ecology's wishes, and make this regulation both understandable and usable by the regulated community if cleanups are to actually take place.

III. Specific Comments

1104 A. Scientific Feasibility

1) The Washington Administrative Procedure Act (APA) requires rules to be technically sound and within the agency's authority. The current draft rule presents many instances whereby the scientific community would find it is not technically sound. For example, the new soil to groundwater Method B calculations to establish cleanup levels are extremely conservative and not scientifically justified.

1105 2) The changes in cleanup levels together with new process requirements do not correspond with the further protection of human heath or an improvement in the environment. In addition, these changes equate to increased costs for studies rather than enhancing actual cleanup.

1106 B. Risk Management and Assessment

1) Although there are now a variety of risk assessment and risk management tools that can be utilized, these provisions are incomprehensible, and will actually make cleanups harder to accomplish. In its Small Businesses Economic Impact Statement Ecology has in fact acknowledged the technical and complex nature of the risk assessment methods. With this in mind, Ecology needs to redraft these provisions to allow better understanding of these new tools and perhaps consider guidance on their implementation.

1107 2) In its report, the PAC recommended that site specific risk assessments could be performed for a variety of land uses including agricultural and commercial properties. The risk assessment sections as currently written do not allow for development of cleanup levels for commercial or other properties, only industrial or residential cleanup levels. The proposed rule should be changed to reflect the site specific risk assessment recommendations made by the PAC.

1108 C. Grandfather Clause

1) NWPPA is concerned with Section 702 (12) which requires Ecology to determine the applicable cleanup level based on the "rules in effect ...at the time the department issues a final cleanup action plan for that release. For independent cleanups, the applicable cleanup level will be based on the rules in effect at the time of the final cleanup action began or when Ecology reviews the cleanup action plan, which ever is less stringent. This section presents a problem if the RI/FS has been started, but a final cleanup action plan has not been formulated. There will be significant costs associated with going back and re-studying an area based on a new set of standards. Additional costs that could have been avoided will also be incurred in the event of an interim action completed before a final cleanup action plan. This section will require the unreasonable expenditure of

funds that could be more appropriately used for implementation of the cleanup remedy.

1109 D. Ecological Evaluation/Institutional Controls

1) The terrestrial/ecological evaluation provisions are drafted in such a way that they are nothing more than new study provisions. The rule language will require almost all sites qualifying for an exclusion from this section to be subject to institutional controls, such as deed restrictions or maintenance requirements.

1110 2) Once an ecological evaluation has been completed, there is little direction on how it will be used in remedy selection.

E. Remediation Levels

1111 1) The proposed rules do not adequately incorporate the use of "remediation levels" as part of the cleanup remedy selection. Remediation levels are essentially a codification of historic "cleanup action levels, which were used in the field under certain conditions when cleanup levels could not be achieved. The current language limits the use of remediation levels when discussing cleanup actions, and inconsistently includes the concept in specific provisions. To maintain the intent of the PAC recommendations, the concept of remediation levels should be consistently incorporated into the rule.

1112 F. Costs

1) The disproportionate cost analysis language inadequately describes the process and use as recommended by the PAC. The PAC intended for the disproportionate cost analysis to be the basis for selecting a remedy, but as currently drafted it is vague and inflexible. This provision should be redrafted to reflect PAC recommendations. It is suggested that site-specific information also be incorporated into the analysis where appropriate.

1113 2) According to Ecology's SBEIS, the proposed rule will increase the costs for all businesses responsible for cleanup actions under this revised rule. This outcome directly contradicts the stated goal of the regulation.

NWPPA appreciates this opportunity to submit comments.

Sincerely,

Cathy Feole
Environmental Affairs Manager

Cc Jim Pendowski

Akana, Trish Alicia

From: Kenefick, Andrew M. [AKenefick@HEWM.com]
Sent: Tuesday, January 18, 2000 3:35 PM
To: 'taka461@ecy.wa.gov'
Subject: Comments on Proposed Revisions to MTCA

Attached as a Word '97 file are Rayonier, Inc.'s comments on Ecology's proposed revisions to Chapter 137-340 WAC. A hard copy of these comments will be mailed to your attention. Thank you for your consideration of Ecology's comments.

<<ATTACH.rtf>>

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Rayonier

Donald L. Schwendiman
Assistant General Counsel
Assistant Secretary

January 18, 2000

46

Ms. Trish Akana
Rules Coordinator
Toxics Cleanup Program
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Re: Rayonier Comments on Proposed Revisions to Chapter 173-340 WAC – Model Toxics Control Act Regulations

Dear Ms. Akana:

Rayonier appreciates the opportunity to provide comments to the Department of Ecology on the proposed amendment to the Model Toxics Control Act (MTCA) Regulation. Rayonier recognizes the effort put into the process by all the stakeholders and by Ecology staff. It is Rayonier's hope that the process will be a success and the "new MTCA" will be a substantial improvement over the old. For that hope to be realized, there are some portions of the revised regulation with which Rayonier has concerns, as described in our comments.

Rayonier has worked with Ecology implementing the MTCA regulation at its sites in Washington and recognizes that years of experience working with the rule make it apparent that some changes would be beneficial. Rayonier was encouraged by the report prepared by the MTCA Policy Advisory Committee (PAC) and supported the goals of the group to "fix" the MTCA regulation, particularly if the knowledge gained from experience in the field could be put to use. The overriding concern that Rayonier has with the draft proposal, however, is that much of this field knowledge has not been incorporated into the regulation. Instead, the rule appears to be more complex, less realistic, more conservative, and ultimately slower and more expensive than the current regulation. In the attached comments, Rayonier has outlined briefly those areas of the rule that Rayonier feels should be revised if Ecology is to meet the goals and direction of the PAC Report.

Thank you again for the opportunity to comment. If you wish to discuss any of these comments further, or if you have any questions, please contact me at (206) 248-4122.

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Telephone (206) 248-4133 • Fax (206) 248-4117

Very truly yours,

Don Schwendimann
Regional Counsel

bcc: Andrew Kenefick
Marcia Newlands

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COMMENTS ON PROPOSED AMENDMENTS TO THE MODEL TOXICS CONTROL ACT CLEANUP REGULATIONS; CHAPTER 173-340 WAC

SUBMITTED BY:
RAYONIER INCORPORATED

January 18, 2000

1114

Rayonier, Inc. hereby submits its comments on the Department of Ecology's ("Ecology") proposed revisions to the Model Toxics Control Act cleanup regulations, Chapter 173-340 WAC. While Rayonier generally supports Ecology's stated intention to revise these regulations to make them more equitable, flexible, understandable, and cost-effective, the proposed regulations in many cases do not achieve these stated intentions. Rather, many sections of the regulations have become more complicated, less realistic, and will likely make cleanups less expeditious and more expensive. Furthermore, the regulations frequently diverge from recommendations made by the MTCA Policy Advisory Committee (PAC). Even where the regulations include PAC recommendations, the regulations later eviscerate those changes through other revisions (e.g., use of institutional controls are conditioned on no other "technically possible" remedy).

I. General Comments

1115

A. Cost-Effectiveness

In its Fact Sheet issued in November 1999 with the release of the draft rule, Ecology stated that, among other goals, the amended rule would make MTCA less expensive. That is a goal that Rayonier wholly supports, as experience has shown that there were often more expeditious and less expensive ways to implement a remediation than were permitted under the prior regulation. Rayonier is concerned, however, that the amended regulation does not meet this admirable goal.

For example, the rule specifically directs that the hierarchy of treatment technologies be removed as a stand-alone criteria and be used instead as a guide to long-term effectiveness and as a checklist to evaluate remedial options. Ecology has done so by removing current WAC 173-340-360(4)(a). However, Ecology has then reintroduced the concept throughout the rule by giving priority to the selection of treatment technologies over alternative methods for remediation. If all practicable methods of treatment must be used before a risk-based standard can be applied, irrespective of the relative risk presented by each approach, where is the benefit of eliminating the treatment hierarchy? The anticipated cost savings have been effectively eliminated.

Comments submitted by email on 1/19/00 by Andrews Kenefick, HELCOM

1116

B. "Technically Possible"

Rayonier strongly disagrees with the use of the standard of "technical possibility" rather than "technical practicability". The effect is to eliminate the use of the disproportionate cost analysis as a tool of remedy selection. Almost every cleanup alternative is technically possible, but when subjected to disproportionate cost analysis, not technically practicable. For example, the PAC supported the expanded use of institutional controls as remedial alternatives, so long as they were judged by the same remedy selection standards as other alternatives. However, WAC 173-340-440(5) mandates that, where it is technically possible to use a more permanent remedy at a site, a PLP may not rely primarily on institutional controls and monitoring. Effectively, the costs savings that would be realized by using institutional controls, where the risk would be adequately addressed by their use, are eliminated by the use of technical possibility as the litmus test.

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The PAC report supported the use of a disproportionate cost analysis to weigh the costs and benefits in determining "permanent to the maximum extent practicable," as well as the use of cost as one of the criteria for selecting a remedy. The disproportionate cost analysis by definition requires that a risk analysis be incorporated to determine the relative protectiveness of the various cleanup alternatives. However, by giving treatment and other more permanent remedies a higher priority, the cost benefits to be gained by using a disproportionate cost analysis are effectively eliminated. Similarly, the cost savings to be realized from the use of institutional controls, technically practicable alternatives, and engineered controls evaporate.

1118

C. Risk-Based Remediation

The linchpin of the "new MTCA" was to be the use of site-specific risk assessment. The rule would be more flexible in allowing risk assessments to be used to develop remediation levels. Remediation levels could be used in lieu of cleanup levels in the remedy selection process. Remediation decisions could be made on the basis of Methods B and C cleanup/remediation levels that incorporated site-specific information, so long as these alternative levels were supported by a reasonable maximum exposure (RME) scenario. The PAC specifically allowed the use of alternative exposure scenarios, where appropriate, for commercial properties, recreational properties, urban residential properties, and agricultural properties, where landscaping, buildings, and pavement would cover much or all of the site.

The rule, as amended, fails to comply with these recommendations. Through omissions and revisions throughout the rule, Ecology has eroded the intent of the PAC by eliminating or eroding the ability of a PLP to use risk to evaluate a cleanup level or cleanup alternative realistically. For example, the owners of current industrial property

1119

that is not in use may choose to remediate the property and reuse it or market it as commercial property. There is no residential use or zoning in the area. Human health and

the environment will be sufficiently protected by a remediation level that is higher than the "unrestricted" use would otherwise allow, but more protective than an industrial level would provide, based on a reasonable maximum exposure scenario for the future use of the site. In this case, however, the only land use options that remain in the rule are "unrestricted," which is the equivalent of residential, and "industrial," which does not include commercial, agricultural, or recreational. Alternative RMEs are not provided for. The site owners will spend unnecessary funds to meet a cleanup/remediation level that is more protective than a risk-based analysis would require.

1120 The failure to integrate a risk-based approach into the amended rule is also apparent in the institutional control provisions. Where a risk analysis would permit the use of institutional controls, without more, as was specifically recommended by the PAC, the rule disallows this approach "where it is technically possible to implement a cleanup action that uses a more permanent cleanup action for all or a portion of the site." WAC 173-340-440(5). Where hazardous substances could remain on site to attenuate naturally, for example, and the only mechanism needed to protect human health and the environment is a fence to control access during the process, what is the need for a more costly, but no more protective, "technically possible" cleanup alternative? This is not a more flexible, cost-effective regulation.

1121 **D. Cleanup Levels**

Rayonier's experience with MTCA has shown that some cleanup levels are not appropriate given the realities of risk at a particular site. It appeared to be the intent of the PAC to address exactly these situations when it directed that Ecology permit the development of remediation levels. The rule, however, contains several provisions that result in cleanup levels that are more conservative than those currently in use, without any apparent justifiable scientific basis for the changes in many cases.

1122 In the soil-to-groundwater section, WAC 173-340-747, the stakeholders in the PAC process had argued for the development of alternate approaches to calculate a cleanup level where groundwater may be impacted by releases in soil. The 100 times (100X) approach was not universally applicable. Rather than amending this section, Ecology has eliminated the 100X approach and designed some very complex and potentially costly formulae designed to reach new cleanup levels. The results of those calculations can be seen in the revised Method A tables for soil. The potential impact of this revision is enormous, particularly where, elsewhere in the rule, Ecology has determined that the default scenario for groundwater will be, in almost all cases, a drinking water scenario. The combined effect of these two changes is to unnecessarily lower the cleanup levels. Has Ecology analyzed whether there is really any greater risk posed by the higher numbers? Or have they been revised simply for the sake of unnecessary added protectiveness?

1123 Another issue raised by some of these revised formulae and tables is whether Ecology subjected itself to the test for "new scientific information" and "criteria for quality of information" found in the revised rule? See WAC 173-340-702(15) & (16). Unless there has been a stakeholder review of any new science incorporated into this rule, it is possible that Ecology has already violated its own regulation. If Ecology is relying solely on the review provided by the POG and the SAB, Ecology should make the information provided to and by these entities available to the public.

1124 **E. Probabilistic Risk Assessments**

The definition of "probabilistic risk assessment" in WAC 173-340-200 should be amended to allow consideration of distributions for dose-response relationships where Ecology determines adequate scientific evidence is available to characterize the uncertainty in a dose-response evaluation. MTCA applies to numerous chemicals. Our scientific knowledge of the toxic characteristics of these chemicals varies significantly. For some chemicals, the scientific evidence and information supporting the evaluation of toxicity is greater than the evidence supporting exposure parameters such as soil ingestion. In such instances, it does not seem scientifically valid or logical to exclude the dose response relationship from the probabilistic analysis. Additionally, recent EPA guidance allows for the development of more site-specific cancer slope factors using techniques other than the multi-linear stage model. Moreover, it is inappropriate to set substantive requirements in the definitions section. Such restrictions should be placed elsewhere in the regulations. Finally, this definition should be amended to clarify that probabilistic risk assessments are applicable to both human health assessments and environmental risk assessments.

1125 WAC 173-340-708(11) relegates probabilistic risk assessments to "informational" because Ecology has not yet developed protocols or policies for such assessments. Ecology failure to keep its policies and technical expertise current is no reason to reject the use of probabilistic risk assessments. Evaluating the uncertainty of a risk estimate has not only been deemed as acceptable scientifically, but is now required by EPA and recommended by the National Research Council. Probabilistic techniques, such as Monte Carlo analysis, are acceptable means of quantifying uncertainty and have been used and reviewed by EPA for several years now. Furthermore, Monte Carlo analysis is an acceptable statistical technique which dates back more than 15 years and is used throughout the country in various disciplines besides risk assessments, such as financial forecasting, stock analyses, and traffic design. The state of Washington uses the statistical technique for many purposes as well. It is not justified to marginalize well developed, broadly acceptable, and scientifically defensible statistical technique until Ecology "adequately describes" a protocol. We suggest the text incorporate the use of probabilistic techniques following the 1998 EPA guidance and focus its use on characterizing uncertainty until further guidance and department familiarity can be attained, but not limit its use as informational only. Making such a designation is likely

to negate the use and availability of a statistical techniques that can provide valuable insight for decisions at hazardous waste sites.

1126

F. Groundwater & Drinking Water Aquifer

Rayonier agrees with the principle that groundwater should not be classified as a drinking water source if the groundwater is not a drinking water source or not likely to become a drinking water source. Rayonier disagrees however with the overly-restrictive test for determining whether groundwater is likely to be a drinking water source. WAC 173-340-720(2)(b). Groundwater can be an unlikely source of drinking water for numerous reason, not just those identified in the regulations. For example, a future statute or regulation may prohibit withdrawing groundwater as drinking water. The regulation should be revised to allow groundwater to be excluded based on other appropriate factors that make the groundwater an unlikely drinking water source.

1127

G. Institutional Controls

While the proposed regulations pay lip service to institutional controls as part of cleanup actions, the regulations effectively prohibit use of institutional controls in WAC 173-340-350(9)(e)(ii) and WAC 173-340-440(5) by not allowing institutional controls "where is it technically possible to implement a cleanup action alternative that uses a more permanent cleanup action." Given that "technically possible" does not address cost, virtually every site where institutional controls are reasonable alternatives will also have other alternatives that are "technically possible" if price is no impediment. For example, a fence or deed restriction may be perfectly adequate to protect human exposure to contamination. However, the proposed regulations would not allow such a control if the contamination could be removed, even if it cost a billion dollars to do so.

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The absurdity of this regulation become apparent when applied to landfills. Any landfill that requires some cleanup under MTCA could not rely on institutional controls because the entire landfill could be completely dug up and hauled away, even if the cost were exorbitant. While an appropriate institutional control would be a fence, deed restriction, and cover, these would be inappropriate given that other cleanup alternatives, such as complete excavation, would be "technically possible."

1129

Moreover, this requirement will effectively prohibit natural attenuation as a viable remediation alternative. Natural attenuation can be a reasonable method for addressing contamination, and it is often coupled with some form of institutional control to prevent exposure during the attenuation period. If institutional controls are not allowed if another alternative is "technically possible", then natural attenuation cannot be considered because it could not be coupled with the institutional control.

1130

H. Financial Assurance

The financial assurance requirements, WAC 173-340-440(11), are too vague and open-ended to be implemented. They state that financial assurance is required to "cover all costs associated with the operation and maintenance of the cleanup action, including institutional controls, compliance monitoring, and corrective action" without providing any basis for determining what that amount is. How will Ecology determine financial assurance for corrective action if the corrective action is not known? How far out into the future must a PLP project costs? If a gas station owner cleans up an oil spill and paves over the residual contamination, must the gas station owner keep financial assurance in place in perpetuity to repair the pavement in the event that it becomes cracked 100 years from now? Likewise, if a PLP places a building over residual contamination (thereby preventing further exposure), must the PLP maintain enough financial assurance to replace the building in the unlikely event it collapses? How does the PLP estimate the financial assurance amount with all the contingencies that may or may not occur? For certain institutional controls, such as deed restrictions or zoning laws, it is impossible to make any estimate of the amount of financial assurance that would be required.

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Furthermore, Rayonier seriously questions whether Ecology has the authority – statutory or constitutional – to require a PLP to provide financial assurance. While financial assurance is often included in consent decrees and agreed orders, these obligations are part of an agreement reached between the PLP and Ecology. Likewise, if a company wants to site a facility, financial assurance can be required. In contrast, Ecology cannot simply order a PLP to provide financial assurance as part of a cleanup. (For example, we are not aware that Ecology includes financial assurance when it issues an enforcement order.) A financial assurance mechanism is tantamount to requiring a company to tie up its assets or incur ongoing financial obligations every year. Ecology cannot require such commitments unilaterally.

1132

I. Point of Compliance/No Allowance for Dilution Zones

The proposed regulations perpetuate a requirement that groundwater flowing into surface waters must achieve surface water quality standards at a "conditional point of compliance that is located within surface waters as close as technically possible to the point or points where ground water flows into the surface water." E.g., WAC 173-340-720(9)(d)(i). The refusal to allow for some level of mixing is not reasonable, practical, or scientifically supportable. First, the proposed regulations would allow dilution zones for hazardous substances flowing into surface waters, except for groundwater to surface water flows. WAC 173-340-730(6). There is no apparent rationale for allowing a dilution zone in one instance and not in another when the only difference is whether the water flows into surface waters above or below ground.

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Second, this requirement makes no sense in terms of protecting human health or the environment. If groundwater cleanup levels are set based on surface water standards,

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then those cleanup levels should recognize the context and purpose of the surface water standards and the concept of mixing zones. It is inappropriate to premise a groundwater cleanup level on a surface water quality standard that is intended to be met after some degree of mixing in the surface waters. For example, a chronic water quality criteria developed for the protection of fish does not assume that the fish will reside its entire life at the exact spot where groundwater flows into surface water. Rather, it is assumed any exposure from pollutants will occur after some degree of mixing in the stream.

1134 Third, the lack of dilution zones will lead to absurd results. Consider, for example, a site with groundwater that exceeds surface water quality standards. Cleanup of the groundwater would be required regardless of the total amount of hazardous substances flowing into the surface waters and the total flow of the receiving surface water. Groundwater flowing at a rate of one ounce per day into the Columbia River would have to be cleaned up if it exceeded the surface water quality standard at the groundwater surface water interface. (Given that the sampling would occur "as close as technically possible" to the point of entry, there is no telling how close Ecology would require the sampling to occur.) The total loading of the substance would be trivial and any further reductions would not reduce risks to human health and the environment.

1135 **J. Conditional Points of Compliance**

WAC 173-340-720(9)(c) conflicts with (9)(d)(ii) in that it prohibits conditional points of compliance beyond the property boundary. Given that (9)(d)(ii) explains the circumstances in which off-property points of compliance are allowed, section (9)(c) should not include the limitation on points of compliance not exceeding the property boundary.

1136 In WAC 173-340-720(9)(d)(ii), Ecology unlawfully delegates cleanup decision authority to downgradient landowners in setting conditional points of compliance. While notification of downgradient landowners is reasonable, Ecology cannot delegate its responsibility in determining what is necessary to protect human health and the environment. As such, the Department of Ecology must retain its authority to regulate the groundwater quality, not delegate it to downgradient property owners.

1137 **K. Citizen Technical Advisor.**

In WAC 173-340-550, Ecology has added to its list of recoverable remedial action costs the costs of paying a citizen technical advisor. There is no basis in MTCA for Ecology to recover the costs of such an advisor as remedial action costs. While Ecology has the authority to recover "remedial action costs," those costs do not include providing technical assistance to third parties. MTCA defines "remedial action" as

> any action or expenditure consistent with the purposes of this chapter to identify, eliminate, or minimize any threat or potential threat posed by

> hazardous substances to human health or the environment including any investigative and monitoring activities with respect to any release or threatened release of a hazardous substance and any health assessments or health effects studies conducted in order to determine the risk or potential risk to human health.

RCW 70.105D.020(21). This definition cannot possibly be read to include the costs of providing technical assistance to persons who do not have direct responsibility for "identifying, eliminating, or minimizing any threat or potential threat posed by hazardous substances to human health or the environment." While Rayonier does not object to Ecology providing technical assistance to interested members of the public, the costs of doing so cannot be recovered from PLPs under MTCA. All references to recovery of "citizen technical advisor" costs as "remedial action costs" must be deleted from the regulations.

1138

L. Applicability of New Cleanup Levels

WAC 173-340-702(12) states that Ecology will apply the cleanup levels that are in effect at the time a cleanup action plan is issued for a remedial action carried out under an Ecology order or decree. While Rayonier agrees with the principle of grandfathering, the grandfathering protection should extend further back in time to the point when the PLP and Ecology enter into an agreement to undertake the RI/FS. Where a site is under active remedial investigation, or an RI/FS workplan is under development, the PLP is operating under the standards of the current regulation. If the standard that is applied to review of the RI/FS and to development of the cleanup action plan is different than that used in carrying out the RI/FS, the ramifications for the project are many. The timing may have to be extended to allow for the development of new plans, or for additional investigations and sampling. The cost of these additional measures will be an added burden to a PLP. There are likely to be other effects as a result of this change mid-project. Rayonier believes a better solution would be to apply the standards that are in effect at the time the remedial investigation workplan is developed, or when the consent order or decree is signed to conduct the RI/FS.

1139

M. Natural Attenuation

In WAC 173-340-200, the definition of "Natural Attenuation" specifies soil and groundwater. Natural attenuation as a process also occurs in surface water, sediments, and air. The definition should include all environmental media.

1140

N. Background Levels

In WAC 173-340-750, the "air" cleanup levels section, the regulations should allow for consideration of background air concentrations at sites where local urban background concentrations of ambient air exceed natural background concentrations. In

such instances, cleanup levels would be impossible to achieve for a specific property owner because the local urban background would continually recontaminate the air to a level exceeding a risk-based concentration.

1141

O. Bioconcentration Factors

WAC 173-340-730(3)(c) states that adjustments to reference dose, cancer potency factor, and bioconcentration factor are site-specific. These factors are not site-specific, but chemical specific. Site-specific factors that should be discussed in this section are the fish consumption rate and the fish diet fraction.

1142

P. Use of Risk Assessments.

WAC 173-340-708(1) states site-specific risk assessments will be evaluated only if they do not result in a significant delay in cleanup. While consideration of cost and schedule is necessary, equally if not more important to some sites are the development and presentation of alternative cleanup values to support and justify appropriate cleanup actions. Ecology should clarify this language to reflect that approval of alternate methods and values will be based on several variables which include available data, proposed methodology, and community concerns, as well as schedule.

1143

Q. Acute Toxicity

We suggest providing an example time frame for the definition of Ecology means by "Acute Toxicity", WAC 173-340-200. As stated, it simply notes short-term, a relative value that can be interpreted as less than 14 days for bioassays, or several months in a carcinogenic evaluation.

II. Comments on Specific Cleanup Standards

1144

A. Cleanup Standards for Indicator Hazardous Substances

WAC 173-340-720(3)(b)(iii) and several other sections require cleanup of indicator hazardous substances to natural background or the practical quantitation limit for constituents that are not in the Method A Tables or have no value in applicable state and federal law. This requirement is inappropriate and unnecessary. Method B calculations can be developed specifically for sites as needed. Such calculations will provide conservative cleanup for chemicals that are not listed on the method A Tables and conform with the intent of making prudently conservative decisions based on the best available information. Simply requiring a PQL in the absence of promulgated regulatory values contradicts the use of a risk-based approach.

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1145

B. Naphthalenes

Table 720-1 sets cleanup levels for naphthalenes based on a summing of naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene. There is no toxicological data to justify summing these constituents of for Method A cleanup levels. These constituents cannot be summed simply because each contains "naphthalene" in the name.

1146

C. Heavy Oils

Table 720-1 should not set Method A cleanup levels for heavy oils on the assumption that heavy oils are similar in composition to diesel oil. Heavy oils, such as lubricating fluids, often have a composition more similar to mineral oil than diesel fuel. In addition, there are a number of practical considerations that will make it difficult to utilize a Method A level of 0.5 mg/L for heavy oils, such as the ability to achieve a 0.5 mg/l PQL due to interferences.

1147

D. Xylenes

It is not scientifically justified to limit the Method A cleanup levels in Table 720-1 for xylenes based on aesthetics and the presence of TPH. The occurrence of xylenes in groundwater is not always related to petroleum. There is no toxicological justification for setting a cleanup level at 1 mg/l. We suggest a level consistent with the MCL.

1148

E. Use of TEQs

WAC 173-340-720(4)(c)(iii) allows use of TEQs for assessing potential carcinogenic risk. The toxicity equivalency factor procedures for dioxins, dibenzofurans, and polycyclic aromatic hydrocarbons are accepted by EPA, and most states as a scientifically acceptable approach. TEQs should be considered the standard procedure rather than an alternative approach for the "modified Method B and C".

1149

F. Leaching Tests

The leaching tests presented in WAC 173-340-747 (3)(b)(i)(A) & (B) are not appropriate for determining how materials will react under site conditions. These test were developed for use in evaluating disposal options, not evaluating site-specific conditions. As such, the tests are designed to extract as much contaminant as possible from a sample. Because of the nature of these tests, they will provide no useful information regarding site specific conditions, and thus be of little scientific use for making prudent cleanup decisions protective of "real world" conditions.

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G. Multiple Hazardous Substances

Many sections state cleanup levels (WAC 173-340-700(5)(b) & (c), WAC 173-340-705(4); WAC 173-340-706(4)) for individual hazardous substances must be adjusted

1050 cont.

downward to account for additive health effects when multiple hazardous substances are present. Because the amendments use and define the words "must" and "shall" as mandatory requirements, this language implies such cleanup levels will always be adjusted downward in the presence of multiple hazardous substances. This is overly conservative and often results in cleanup levels that are below ambient conditions, not possible to attain, or not necessary. Furthermore, adjustment of the levels downward is not always required to attain a target risk level of 1 x 10-5 . The cleanup levels for non-carcinogens only need to be adjusted downward when the cumulative hazard quotient for compounds with similar toxic effects exceeds 1. Cleanup, levels for carcinogens only need to be adjusted downward when the cumulative cancer risk exceeds 1 x 10-5. EPA recognizes in their screening guidance, that although multiple chemicals exist on many sites, only a small percentage may actually contribute significantly to the total risk. For example, if you have three carcinogens with cancer risks of 4 x 10-6, 9 x 10-8, and 1 x 10-6, no downward adjustment would be needed of the individual cleanup level in order to attain a 1 x 10-5 target risk level. We suggest the proposed language be clarified to allow for downward adjustment to allow instances where downward adjustment of cleanup levels is not mandatory.

III. Typographical Errors

Although there are undoubtedly some others that Rayonier has not identified, there are a number of typographical errors in the proposed regulations.

1151 • WAC 173-340–720(6)(b). It is unclear whether the factors considered under –720(6)(b) must all be met or just one must be met. The confusion arises because of inconsistent use of "and" and "or" within the list of factors to be considered.

1152 • WAC 173-340-7492(2)(c)(ii) – The referenced Table 7 is missing.

1153 • WAC 173-340-700(5)(a) - The first sentence provides a faulty reference. The section refers the reader to section WAC 173-340-130, but the section moved to WAC 173-340-120 definitions.

1154 • WAC 173-340-730(3)(b)(iii), Equations 730-1 and 730-2 - Bioconcentration factors are not unitless. Bioconcentration factors are noted as the concentration of a chemical in fish tissue (mg/kg tissue) divided by its concentration in water (mg/L water). Consequently, BCFs are expressed in units of (L/kg).

1155 • Equations 740-3, others - The definitions for the equation include "GI" (gastrointestinal absorption conversion factor), but this is not included in the actual equation. The GI factor should be included.

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IV. Conclusion

Ecology has more work to do before the revised MTCA regulation meets the goals and directives of the MTCA PAC Report. The revisions do not lead to a "fairer, easier to understand, more flexible, less ambiguous and less expensive" program. Environmental cleanups in this state will not benefit from this revised rule. There are parts that are clearly an improvement, but there are still major errors and omissions in the language and in the applicability of the rule as a whole. Rayonier encourages Ecology to work with the stakeholders to redraft significant portions of the proposed regulation before putting it into effect. The regulation is not ready for release.

120288 v01.SE (2KTC011.DOC)
1/20/00 4:13 PM (13399.0045)

Akana, Trish Alicia

From: rodger herbst [rherbst@igc.apc.org]
Sent: Tuesday, January 18, 2000 2:31 PM
To: Akana, Trish Alicia
Subject: RE: MTCA update

MTCACO.DOC

Ms Akana;

attached are comments on behalf of Washington Environmental Council RE revised MTCA rule.

A hard copy on WEC letter head will follow

Thank you.

At 04:12 PM 9/7/99 -0700, Akana, Trish Alicia wrote:
>You have been added to the mailing list of persons who want to receive a
>hard copy of the draft EIS.
>Trish Akana
>(360)407-7230
>
>
>----Original Message----
>From: rodger herbst [mailto:rherbst@igc.apc.org]
>Sent: Thursday, September 02, 1999 11:03 PM
>To: TAKA461@ECY.WA.GOV
>Subject: Re: MTCA update
>
>
>Please send me a hard copy of the draft EIS.
>
>Thanks.
>
>Rodger Herbst
>Chair
>WEC Pollution & Health Committee
>
>17003 148th Ave NE
>Woodinville WA 98072
>
>425-483-2664
>
>>From: "Akana, Trish Alicia" <TAKA461@ECY.WA.GOV>
>>To: "'Dan Ballbach'" <dballbach@aol.com>, "'Grant Nelson'"
><GrantN@awb.org>,
>> "'Greg Wingard'" <gwingard@earthlink.net>,
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>> "'Rod Brown'" <rbrown@martenbrown.com>,
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>> <SCHWARZ.JUDI@EPAMAIL.EPA.GOV>
>>Cc: "Silver, Dan" <dsil461@ECY.WA.GOV>,

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Page 1 of 7

>> "Fitzsimmons, Thomas"
>> <TFIT461@ECY.WA.GOV>,
>> "Pendowski, Jim" <jpen461@ECY.WA.GOV>,
>> "Gerla, Kathy (ATG)" <KathyG@ATG.WA.GOV>,
>> "Alkire, Bill"
>> <WALK461@ECY.WA.GOV>
>>Subject: Status of MTCA - rule revisions
>>Date: Thu, 26 Aug 1999 12:30:46 -0700
>>MIME-Version: 1.0
>>
>>In short, the date for a published draft rule is moved out to October since
>>the Order Typing Service--of the code reviser's office-- needs a minimum of
>>5 weeks for a project of this size--and not 3 as previously believed by OTS
>>staff--to complete the initial changes submitted.
>>
>>What you can expect as the finish line approaches:
>>Draft rule - preview before formal public comment period
>>Current thinking is that the program will post on its web site, a copy of
>>the document showing the proposed changes to MTCA that will be published in
>>the Washington State Register. The posting may occur simultaneously with
>>filing the draft rule at the Office of the Code Reviser or follow shortly
>>thereafter. Note that filing with the code reviser occurs 2 weeks before
>>publication in the register.
>>
>>Draft rule - formal public comment period
>>The program is extending the 30-day minimum requirement and providing 60
>>days after publication in the Register before the comment period ends.
>>
>>Draft Environmental Impact Statement
>>The EIS will be available on the date the draft rule is published in the
>>Register.
>>
>>Small Business Economic Impact Statement
>>The SBEIS will be available on the date the draft rule is published in the
>>Register.
>>
>>Preamble and Notes to Reviewers
>>As agreed during the November 98 negotiations, the program will post a
>>preamble and notes to reviewers. The notes to reviewers will summarily
>>identify any substantive changes by section. The notes will indicate
>>whether the substantive changes were initiated by the department, the
>Policy
>>Advisory Committee, the Duwamish Project Oversight Group, the Science
>>Advisory Board, the Governor's Executive Order 97-02 on Regulatory Reform
>or
>>some other law, for instance, the Administrative Procedures Act.
>>
>>Mailing List
>>For the nearly 300 interested persons on the MTCA rule-making mailing list,
>>the program will send hard copies of: (1) the draft rule as published in
>>the State Register; (2) a copy of the preamble and notes to reviewers; and
>>(3) the Small Business Economic Impact Statement. A copy of the Draft EIS
>>will be available upon request.
>>
>>Program Web Page
>>* A preview of the rule filed with the Code Reviser, the Preamble, and
>>Notes to Reviewers will be posted about the date the rule is "filed" with
>>the code reviser.
>>* The Small Business economic impact statement and Draft Environmental
>>Impact Statement will be posted about the date the Register is published
>>and distributed.
>>* An electronic link to the draft rule--located on the code reviser's
>>and legislature's web page--will be provided upon the publication and
>>distribution date of the Register.

>>
>>Public Hearings
>>The program will provide an opportunity for oral comment to be received in
>>rule-making hearings. A notice of the hearings will be published in the
>>State Register at least 20 days before the rule-making hearing is
>scheduled.
>>The program will send a notice of the hearings to each person on its
>mailing
>>list at least 3 weeks before the first hearing date.
>>
>>Cost-Benefit Analysis
>>A draft cost-benefit analysis will be provided for public review about 2
>>months prior to rule adoption. The final cost-benefit analysis will be
>>completed and available when the rule is adopted.
>>
>>Rule Adoption: Final rule
>>With a published rule in October...rule adoption would be 6 months later or
>>April 2000.
>>
>>Final Environmental Impact Statement
>>The Final EIS will be available when the rule is adopted (April 2000).
>>
>>Responsiveness Summary or "Concise Explanatory Statement"
>>After the formal public comment period ends in December 1999 and before the
>>program files an adopted rule with the code reviser in April 2000, the
>>program will prepare a reply:
>>
>>(1) identifying the reasons for adopting the rule;
>>(2) describing differences between the text of the proposed rule as
>>published in the register and the text of the rule as adopted–and the
>>reasons for differences; and
>>(3) summarizing all comments received regarding the proposed rule, and
>>responding to the comments by category or subject matter, indicating how
>the
>>final rule reflects program consideration of the comments, or why it fails
>>to do so.
>>
>>The program will provide the Responsive Summary to any person upon request
>>or from whom the program received comment.
>>
>>Effective Date of Adopted, Final Rule
>>The effective date will be the date the rule is adopted in April 2000.
>>
>>Please contact me if you have any questions about the rule-making process,
>>timeline, or subject of the proposed rules.
>>
>>Trish Akana, MTCA Rule Coordinator
>>
>>
>>
>
>

The following comments on the revised MTCA rule are submitted on behalf of Washington Environmental Council. WEC is an umbrella organization representing over 90 member organizations and 3000 individuals. WEC has been actively involved in MTCA since its inception, and appreciates the oppertunity to provide comment on its revision.

Note: WEC concerns and recommendations are in **bold face**

WEC supports some of the modifications of the MTCA as set forth in WSR 99-22-077, especially those that truly clarify the original Act.

Beyond these clarifications, WEC has concerns which include the following:

1156

A. Potential for arbitrary weakening of default equations for site specific cleanup

(WSR pg. 130). WAC 173-340-420 periodic review: when required, periodic reviews shall be conducted by the department at least every 5 years after the initiation of a cleanup action.

periodic reviews required at the following sites:
...
(d) Where , in the departments judgment, modifications to the default equations or assumptions using site-specific information would significantly increase the concentration of hazardous substances remaining at a site after cleanup or the uncertainty in the ecological evaluation or the reliability of the cleanup action is such that additional follow up review is necessary to assure long-term protection of human health and the environment.

[WEC comment: If in the departments judgment, such modifications using site specific information might threaten human health or the environment, why would it be approved in the first place?]

[WEC comment: In Section 1.6.1 of MTCA Proposed Rule Amendments DEIS, Site-Specific Risk Assessment, pg. 13 states "If inappropriate changes are made to risk assumptions, there is a potential for underestimating the risk to human health..... Based on Ecology's experience with use of site-specific risk assessment under the current rule, increased use of Site Specific Risk Assessment can result in more delays and increased concentrations of contamination remaining at sites after cleanup".]

1157

B. Inadequate independent cleanup actions
WSR pg. 136:
New Section:
173-340-515 Independent Remedial Actions ....without department oversight or approval...
(4) (a) Reports
Any person who conducts an independent interim action shall submit a written report to the department within 90 days of completion of the action.
(3) Standards (a)
in reviewing independent remedial actions, the department shall determine whether the ...actions meet ...the requirements and/or whether further remedial action is necessary.

[WEC comment:
Allowing carte blanch independent cleanup authority would appear very risky to the potentially libel person taking the independent action, and causes a potential loss of time and resources.]

[WEC recommends that the Department require notification of a contaminated site, and approve independent action based on 1) the nature of site and contamination and

2) the knowledge and experience of the potentially libel person before authorizing independent action.]

1158 WSR pg. 136 notes:
(5) technical consultations: Upon ...review of an independent remedial action the department my provide opinion; remove the site or portion of the site from hazardous sites list, and describe deficiencies of remedial action.

[WEC comment: although there is a mechanism to de-list successful independent remedial actions, There appears no mechanism set in place for the department to act to cleanup the contaminated area if the independent plan was inadequate.]

1159 **C. Potential misuse of the concept of "cleanup level"**
WSR pg. 148:
Part VII Clean Up Standards
Introduction of concept of "cleanup level": concentration of hazardous substance determined to be protective of human health and the environment: i.e., leave residual contamination up to point that meets risk factors for human health.

"remedial levels": concentration of hazardous substance above which a cleanup technique will be applied.

[WEC comments:
are remedial levels the same as cleanup levels? what is the reason for introducing remedial levels in addition to the concept of cleanup levels?

Introduction of the concept of "cleanup level" admits the possibility that contaminated soil meeting MTCA cleanup levels may be termed "clean soil" and used as clean soil.]

WEC Recommends that a definition be provided for cleanup level soil, as well as true clean soil. The distinction between the defined "cleanup level soil" and true clean soil should be incorporated throughout this rule to avoid misconception.

1160 **D. Continuity of cleanup through changes of land ownership or right of way**

[WEC comment: Although a "prospective purchase consent decree" is described, (WSR pg. 137) no section appear to require a prospective purchaser to submit such a decree; i.e.; the site may change hands before a contaminated area has been reported to the agency, and the new owner may not have site information, or ignore that information. Further, no apparent provision is provided to prevent relatively small contaminated sites from being disturbed by large scale construction, which may allow pathways to contaminated material to inadvertently be created. This is especially true if a site qualifies for exclusion from a Terrestrial Ecological Evaluation via reason of WAC 173-340-7491]

1161 **E. Inappropriate exclusions from Terrestrial Ecological Evaluation**

WSR pg. 197:
WAC 173-340-7491 Exclusions from a Terrestrial Ecological Evaluation:

section (a). soil contaminated with hazardous substance is located six feet below ground surface

[WEC comment:

No stipulation is provided for defining the ground fill placed above the hazardous substance, which may be in fact contaminated soil meeting MTCA Method A cleanup levels. Adding contaminated material as fill is not in the spirit of the original MTCA act.]

1162 Section (c) Where the site conditions are related or connected to undeveloped land in the following manner:

(I) less than 1.5 acres of exposed land contaminated with toxics not listed in (ii)

(ii) less than 0.25 acres of exposed land contaminated with certain toxics

[WEC comment: (c) appears to allow unrestricted land use, regardless of the concentration of toxics at the location. What is the scientific basis for this?]

1163 **F. Department Filtering of information in the public process**

WSR pg. 143:
173-340-600 Public Notice and Participation
WSR pg. 145: Public participation plans:
subsection (e):
"The department shall determine if the variables proposed to be modified in a site- specific risk assessment or alternative reasonable maximum exposure scenario may affect the significant public concerns regarding future land use and exposure scenarios. If the department finds that those concerns may be affected, then ecology shall assure appropriate public involvement and comment opportunities will occur as identified in the public participation plan".

WEC comment: Because such variable modification may be of primary concern to the public, such modification should be part of the information available to the public for comment. Department "filtering" of what the public may or should be concerned with defeats the purpose and spirit of the public participation process.

1164 **G. Potential recycling of hazardous materials in inappropriate ways.**

(WSR pg. 117):
WAC 173-340-350 Remedial investigation and feasibility study
(8) Procedures for conducing a feasibility study
(c) contents of a feasibility study
(i) general requirements
(C) (WSR pg. 119):

"Each alternative may consist of one or more cleanup action components, including but not limited to, components that reuse or recycle the hazardous substances, destroy or ....."

[WEC recommends MTCA state explicitly that hazardous substances may not be recycled into commercial or domestic products, other than the actual product present in the contaminated waste]

1165 **H. Inadequate protection of non- endangered species wildlife.**

WSR pg. 196:

1165 cont.

173-340-7490
Terrestrial Ecological Evaluation
(3) Goal: The goal of the terrestrial ecological evaluation process if the protection of ... receptors from significant adverse effects. For species protected under the Endangered Species act or other ....laws that extend protection to individuals of a species, a significant adverse effect means an impact that would significantly disrupt normal behavior patterns ..... For all other species, significant adverse effects are effects that impair reproduction, growth, or survival.

WEC comment:
Failure to protect individuals of a non -endangered species provide impetus for that species to become endangered.

1166

I. Degraded aesthetics for petroleum cleanups.

Section 1.6.2 of MTCA Proposed Rule Amendments DEIS, Petroleum Cleanups, notes: several method A values for petroleum related substances are higher, so three will be higher contamination. Although values are "expected" to be protective of human health and the environment, some taste and odor impacts to water and odor impacts to soil could result.

use of ASTM risk based corrective action model, will likely result in higher levels of petroleum contamination, so taste and odor may be impacted

[WEC comment: Such aesthetic degradation of resources is contrary to the spirit of the original MTCA Rule.]

Sincerely;

Rodger Herbst
Chair, Pollution and Health Committee
Washington Environmental Council

CC Dave Mann, President , WEC

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Office of
The General Counsel

The Boeing Company
P.O. Box 3707, MC 13-08
Seattle, WA 98124-2207

January 18, 2000

VIA E-MAIL, FAX AND U.S. MAIL

Trish Akana, Rules Coordinator
Toxics Cleanup Program
Washington Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

RE: Proposed Changes to MTCA Rule

Dear Ms. Akana:

I am submitting these brief comments as a former member of the MTCA Policy Advisory Committee and External Advisory Committee, urging again that the Department further refine the current draft proposal. Although some of the 18 pages of comments which I submitted January 29, 1999 regarding the December 1998 draft have been addressed, many have not. I ask that the Department reconsider those additional comments.

1167

While the vast majority of my comments were detailed, I am most troubled by what I perceive as fundamental flaws in the current draft. Unfortunately, the current version still suffers from some of the basic problems which I identified a year ago, including the following comments I submitted at that time:

> I continue to be concerned that the draft proposal is overly complex and will be difficult for small businesses and the general public to understand. This is in part due to the insertion of numerous new provisions, many of which appear to be based upon Ecology initiative, as well as significant gaps in the draft which make it difficult to understand. For instance, some of the new provisions initiated by Ecology make the identification of cleanup levels much more complex, such as the new subsections adding requirements for vapor and dermal pathways in sections 740, 745 and 750, and complicating the soil to groundwater pathway in new section 747. In other sections, changes related to PAC recommendations are not fully integrated into the rules in a way that makes it clear how the process has changed, such as how "remediation levels" are identified and how ecological risk is integrated into remedy selection.

ooo

I certainly applaud the long term efforts expended by Department personnel to refine the proposal and address significant comments. However, much as I would like to call the task complete, I do not believe it to be true.

1168

One of the concerns mentioned above, regarding full integration of conceptual changes, remains just as true of the current draft. For instance, while the draft makes some changes to integrate the concept that a cleanup action may be selected based upon remediation levels (if a permanent cleanup is impractical and the remediation levels are protective), other provisions still say that cleanups must still, at a minimum, achieve "cleanup standards." [See proposed sections WAC 173-340-350(11)(b)(ii) and WAC 173-340-350(9)(a)(ii)]. Clearly this is incongruous, if other provisions are also accurate. That is, WAC 173-340-200 defines "cleanup standards" to only include "cleanup levels" (Ecology refused to accept my suggestion that "cleanup standards" be defined to include remediation levels approved for a site), and proposed section WAC 173-340-350(11)(a) reinforces that concept by pointing out that "Remediation levels are not the same as cleanup levels." The inconsistency of language, taken collectively, is quite apparent. On the one hand it says that cleanups must, at a minimum, achieve cleanup levels (i.e., the only thing recognized in the definition of "cleanup standards"), and then says some cleanups may instead be based on remediation levels in some circumstances. Internal inconsistencies within the draft are certain to cause confusion.

1169

Of even greater concern is the issue of approach. That is, much of the streamlining and flexibility originally envisioned by the PAC in its deliberations and its recommendations for improving MTCA have been overwhelmed by the addition of numerous layers of technical complexity. In essence, it appears that the Department has not sufficiently reviewed its proposed text with an eye to weighing the practical effect of its proposals from a policy standpoint. If it had, I doubt that it would have made some of the proposals contained in the draft.

For instance, I doubt that the Department would have so radically changed its approach to establishing a relationship between soil and groundwater concentrations (wholly eliminating the existing default, which could be simply understood and applied), and correlatively its Method A soil cleanup levels (potentially calling into question the sufficiency of past cleanups approved by the Department), which are apparently based more upon a recommendation from the SAB that the "science" needed updating than upon data showing the current cleanup levels to be unprotective. Indeed, even the new "more perfect" models are fallible (e.g., the new models would predict that natural background levels of arsenic in Washington soils would leave the State's groundwater pervasively contaminated at 50 times observed concentrations). I have difficulty perceiving,

without persuasive evidence that existing cleanup levels are not protective, the policy reason that justifies imposing a much more complex and expensive approach when the "scientific improvement" is still simply a fallible approximation.

1170

BOEING

Similarly, of particular concern in the industrial context is the extension of MTCA air quality standards to include indoor air concentrations. The processes and indoor air exposures at industrial facilities are already subject to extensive worker safety regulations imposed by WISHA and OSHA. The MTCA approach of either modelling or measuring indoor air concentrations in order to determine whether soil or groundwater cleanups are adequate is simply flawed. Members of the SAB have previously indicated that fate and transport modeling of vapors is highly variable, and that measurements may be much more reliable. Yet measurement is not determinative of MTCA compliance in the industrial context, since indoor air is often affected to some extent by the processes contained in the buildings themselves. Thus, it cannot be assumed that detected concentrations relate to soil concentrations under a building floor instead of the industrial processes located within the buildings. Indeed, it may be likely that detections of chemicals in indoor air will exceed the MTCA-modeled parameters. For instance, OSHA standards for 8 hour worker exposure to benzene is one ppm, while the MTCA proposal would potentially trigger cleanup activities with dramatically lower detections (four orders of magnitude lower). Obviously, if a MTCA-derived level is less than that imposed by WISHA and OSHA and the source of vapor is potentially an industrial process, measurement will not be adequate for determining MTCA compliance. Yet, at the same time, modeling has been thought to be unreliable. Ecology should refrain from regulating indoor air concentrations in the industrial context when the same indoor air is already subject to safety regulations imposed by WISHA and OSHA. It is both unnecessary and difficult to implement. Again, it would surprise me if these implications were considered by Department personnel at an appropriate level for making such policy-laden decisions.

1171

To my understanding, the Department is in a policy role, for the purpose of identifying rules that are as simple and effective as possible while achieving the end goal of protectiveness. While the Department does and should allow PLPs to elect to spend significant sums of money to approach "more perfect" site-specific cleanups, capturing every nuance of scientific advancement in rules of general applicability is not in fact part of the Department's charter. Nor should it be, from the standpoint of forming a workable and effective program for the vast majority of cleanups in the State.

1172

While the PAC suggested numerous changes for improving the MTCA program, there were successes that it never envisioned would be jeopardized. Part of what

was clearly successful about the MTCA program reviewed by the PAC was its simplicity and its implementation by PLPs without the need for extensive Department involvement or oversight. Indeed, the Department was clearly proud of the fact that so many cleanups had been conducted in the first five years of the MTCA program at a relatively low cost to the Department, with over 90% of the cleanups being conducted independently. I would urge you to consider that this trend may not continue if the cleanup process is transformed into something substantially more complex and more akin to the federal cleanup program, such that it is much more difficult and expensive to apply.

BOEING

Thank you once again for the opportunity to comment on the Department's proposals. If there are any issues which the Department determines it wishes to consider further, I welcome the opportunity to participate.

Very Truly Yours,

Taryn M. McCain, Counsel
The Boeing Company
Office of the General Counsel
(206) 544-3255, Mailstop 13-08

Reply 4
Page 4

January 29, 1999

TO: Ecology Toxics Cleanup Program

FROM: Taryn McCain, Boeing

SUBJ: Comments on December 14, 1998 Revised Draft of MTCA Rules

I have reviewed the subject draft of proposed revisions to chapter 173-340 WAC. My comments on the draft reflect concerns which were, in large part, either raised in a memo that Mike Gillet and I submitted to Carol Kraege on November 17, 1998 in reference to the October 30 Ecology draft, and/or which were discussed with Carol during negotiations last November.

As mentioned in our earlier comments, the revised draft is both structurally and substantively a significant improvement over the draft circulated by the department in February 1998. As also mentioned earlier, I believe that many of the remaining substantive problems appear to be fixable. Unfortunately, a number of the issues we have raised have not been adequately addressed in the latest version.

Second, the Ecology draft includes numerous revisions based on the work of the POG and SAB, as well as revisions required under Executive Order 97-02, rather than any recommendation from the MTCA Policy Advisory Committee (PAC). As we mentioned previously, since Ecology has chosen to incorporate revisions that originate from these non-PAC sources, it should at least be clear about the source for each non-PAC recommendation and clear about the substance of the recommendation. I have noted that the "notes to reviewers" in the proposal allude to some POG and SAB review, but am unaware of any documentation of recommendations from those bodies. Absent the documentation of recommendations, it is virtually impossible to identify what precisely the POG and SAB have considered and to comment upon the technical merit of the proposal.

Third, I continue to be concerned that the draft proposal is overly complex and will be difficult for small businesses and the general public to understand. This is in part due to the insertion of numerous new provisions, many of which appear to be based upon Ecology initiative, as well as significant gaps in the draft which make it difficult to understand. For instance, some of the new provisions initiated by Ecology make the identification of cleanup levels much more complex, such as the new subsections adding requirements for vapor and dermal pathways in sections 740, 745 and 750, and complicating the soil to groundwater pathway in new section 747. In other sections, changes related to PAC recommendations are not fully integrated into the rules in a way that makes it clear how the process has changed, such as how "remediation levels" are identified and how ecological risk is integrated into remedy selection.

Despite the foregoing, I applaud Ecology's efforts to improve the draft revisions since the issuance of the February 1998 draft. I remain hopeful of resolving the issues I address here.

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Attachment

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COMMENTS ON THE OCTOBER 30TH REVISED DRAFT

COMMENTS ON SPECIFIC PROVISIONS

1300 **WAC 173-340-200 Definitions**

p.6 The definition of "carcinogen" contains a note saying that current rule drafting requirements eliminate references to potential amendments of referenced documents. As I understand the discussions during negotiation, the Attorney General's office takes the position that this is required by a Washington Supreme Court case. I have not, however, been able to identify any such case. It seems ludicrous that language be changed in a manner making the reference potentially obsolete the next time the reference is amended (which could indeed happen at any time). Further, this contradicts the intent of Executive Order 97-02, which encourages consistency with other agencies and programs. I would encourage Ecology and the Attorney General's office to rconsider whether there is any room for different interpretation.

1301 p.7 As Mike Gillet and I noted during November 1998 negotiations, there are numerous provisions in the rules that are confusing because the definition of "cleanup standards" does not refer to "remediation levels" and "conditional point of compliance." While we agreed during negotiation that the problem could be fixed in each substantive provision, rather than in the definitions, there are numerous places where there is still a need to change language to be consistent with the intent that remediation levels are considered protective when approved. An example of an agreed change is in subsection 380(a)(iv), in which the language "and, where appropriate, remediation levels," was added to clarify that remediation levels may be approved and deemed protective even though they are not the same as "cleanup standards." Additional places where similar language changes are needed include:

- On page 25, in WAC 173-340-350(8)(d)(i)(B), after "cleanup standards" insert "or, where applicable, remediation levels".
- On page 26, in WAC 173-340-350(8)(e)(i), after "cleanup standards" insert "or, where applicable, remediation levels".
- On page 29, in WAC 173-340-360(5), in the second algorithm, strike "Soil cleanup level" and insert in lieu thereof "Soil remediation level".
- On page 42, in WAC 173-340-430(4)(b), after "site" insert "or, where determined to be applicable during remedy selection, compliance with remediation levels has been confirmed at the site".
- On page 47, in WAC 173-340-450(7), after "cleanup standards" insert "or, where applicable, remediation levels".
- On page 74, in WAC 173-340-702(5), after "(applicable" insert "or, where applicable, remediation levels".

1302 p.8 The term "equivalent carbon number" is related to TPH, but appears overly technical for inclusion in general definitions. Should it be moved to a TPH provision where the term is used? Is it used in more than one provision?

1303 p.8 "Federal Cleanup Law". See comment on "carcinogenic" above. This seems extraordinarily short sighted. It is not PAC related.

1304 p.10 "MCL". See comment on "carcinogenic", above.

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COMMENTS ON THE OCTOBER 30TH REVISED DRAFT

1305 p.10 The term "native vegetation" is related to PAC discussions, but has been broadened in the most recent revision to include "or other scientific botanical publications approved by Ecology." This change is unacceptable because the term is used in the rules to identify which sites are required to conduct a site specific assessment. This establishes a vague and subjective standard regarding applicability (essentially a moving target) thereby raising due process concerns, and is therefore of questionable enforceability. See, e.g., section 7491(2)(a) (i) and (iii).

1306 p.10 The term "natural biodegradation" is defined more narrowly than agreed to during post PAC negotiations. That is, it was acknowledged that some metals (e.g., cyanide) naturally degrade and that section 370(1)(g) should not be limited to "bio" degradation since it would not accurately describe inorganics that naturally degrade.

1307 p.12 The definition of "Probabilistic Risk Assessment" should be deleted as unnecessary. The only place it is used is in 708(11), which allows use for informational purposes only. Also, this definition is unnecessarily constrained, given its restricted use.

1308 p.13 The definition of "routine cleanup action" should not be limited to "excluded" eco-risk sites. They should also include those where application of the simplified terrestrial ecological evaluation procedure under section 7492 is utilized to support selection of the cleanup action. For instance, if the site is cleaned up to levels specified in Table 7 under section 7492, this would be analogous to cleaning up to levels in Method A under section 740. Note also that there is a typographical error – "routine cleanup actions consist of...," should be moved so that it is not part of the same bullet as the provision regarding ecological evaluations.

1309 p.13 Either the definition of "restoration time frame" or the language of subsection 350(9)(e) needs to recognize that an approved cleanup action may rely upon remediation levels and conditional points of compliance. The current draft of 350 (9)(e) appears to only allow selection of a cleanup action that will achieve cleanup levels at points of compliance within a reasonable restoration timeframe. Of course, this may not be the case. Presumably, remediation levels, if approved, should also be achieved in a reasonable timeframe and the rules need to reflect this concept.

1310 p.13 The definition of "semi native vegetation" suffers from a similar problem as "native vegetation". (See comments above). It is vague in stating that "at least some" species must be native. Earlier definitions proffered by Ecology were more appropriate, in that they stated that native species should be "ecologically dominant." "At least some" gives no sense of a minimum number or proportion of native species in relationship to the plant community, and is thus patently vague, subjective, and likely unenforceable.

1311 p.13 Throughout the draft, the term "site" can range from the synonym of facility (roughly any location where hazardous substances have or are deposited, stored, disposed of, or placed or otherwise located) to the equivalent of an "area of contamination" (the specific area where contamination above cleanup levels is present). This is significant in the following ways: 1) In assessing ecological risk, where the size of a facility (which will always be equal to or larger than the area of contamination) could put you into the process, but the size of the area of contamination may not. (A portion of the "site" may be within 500 feet of habitat, whereas the area of contamination may not.) 2) There are many uses to either facility or site as part of the description of some requirement of the other (see WAC 173-340-350(7)(c)(i) and (ii), where, clearly, site and facility do not equal one another).

The problem appears to arise because each of the authors, writing their particular sections, use the term differently. Ecology should clarify their meaning for each reference in

the text by using a term such as "area of contamination" in lieu of "site" when reference to property boundaries is not intended.

1312 p.15 The definition of "wildlife" should exclude pest species as they are defined under federal law (FIFRA). Similarly, subsections 7490-7494 should exclude pest species from the ecological receptors protected under those sections.

1313 **WAC 173-340-300 Site Discovery and Reporting**

p.16 Subsection (2)(b) provides examples of circumstances that may trigger a report. This was criticized by the PAC when first proposed. It is not related to a PAC recommendation (see PAC Report, p. 50, which contains nothing on this in the release reporting discussion). The primary criticism was that determining reportability requires a judgment call regarding whether there is a "threat to human health or the environment" which is not amenable to rule language. Also, the proposed revisions use terms like "contaminated" and "chemicals" which are not precise and which are not clearly related to the release of a "hazardous substance" in an amount or manner that poses a threat. The changes are as likely to cause confusion as they are to clarify the requirements, and as such should not be included in the rule. They are certainly unnecessary for establishing Ecology's authority in requiring reporting and are more appropriately addressed in guidance.

1314 **WAC 173-340-350 Remedial Investigation and Feasibility Study**

p. 24 Subsection (7)(c)(iii)(F)(II) attempts to respond to a comment that ecological risk may be most appropriately considered after developing remedies for protection of human health. Thus, the first example is inappropriate if the hazardous substance of primarily ecological concern will be co-remediated or otherwise addressed along with constituents that are primarily a human health concern (e.g., through a model remedy). Language should be added to the first example so that this is clear, saying something like "a site contaminated with a hazardous substance that is primarily an ecological concern, such as zinc, which will not obviously be addressed by the cleanup action for human health."

1315 p.24 Subsection 8 (a) should be revised. First, in the second sentence, "at a point of compliance throughout the site" should be revised to delete "throughout the site" since it is not accurate in describing the point of compliance for soils under sections 740 or 745. Also, the last sentence of subsection (8)(a) is not entirely accurate. What is necessary is to evaluate potential cleanup actions in a feasibility study and apply the disproportionate cost analysis to determine whether a cleanup action is required, and if so, what cleanup action should be selected. For instance, Ecology has allowed "no action" alternatives when the exceedance of cleanup levels was determined to be marginal. Thus, "evaluate and select a cleanup action" should be changed to "evaluate cleanup action alternatives, and select a cleanup action, if appropriate, according to the procedures set forth in section WAC 173-340-360."

1316 p. 26 Subsection (8)(d) discusses minimum requirements applicable to all cleanup actions. During 11/98 negotiations with Carol Kraege, it was agreed that the sentence in (d)(i) stating "These requirements are not subject to qualifications or waivers." would be deleted. Trish Akana's summary of negotiations reflects this agreement. This oversight should be corrected. See also comments above under section 200, definition of "cleanup standards" which suggests language to correct (d)(i)(B) because the current draft fails to recognize that remediation levels may be approved and is thus inaccurate.

1317 p. 26 Subsection (9)(a) and Figures 740-1 and 745-1 should be modified to recognize that cleanup levels need not be established under the ecological risk evaluation rules at sections 7490 through 7494. No cleanup levels are needed if the site is excluded under section 7491, passes the simplified evaluation under section 7492, if the department finds that the site is addressed adequately under section 7493(2)(c), or sufficient information is available to select a cleanup action protective of ecological receptors without determining appropriate cleanup levels. Development of cleanup levels is similarly not required for model remedies approved under section 390.

1318 p.27 See comments under section 200 for "restoration timeframe", which also affect subsection 350(9)(e).

1319 **WAC 173-340-360 Selection of Cleanup Actions**

p.28 Subsection (3)(c) is needlessly inflexible, since the iterative approach described is not really necessary if there is an obvious baseline or obviously disproportionate alternatives. The following should be added to (c): "Application of the disproportionate cost analysis shall be consistent with the following procedures, although the procedures may be simplified on a site-specific basis if appropriate:"

1320 p. 28 Subsection (3)(c) describes application of the disproportionate cost test. It provides that the baseline alternative shall be discarded from further consideration if its incremental costs over a less costly alternative exceed the incremental benefits it provides. However, it fails to incorporate the PAC recommendation that where two or more alternatives are equal in benefits, Ecology shall be required to select the less costly alternative. See PAC Report, p. C-48.

1321 p. 29 <u>Subsection 360(4)(b)(v) desperately needs additional language</u>! Since the land use scenarios other than industrial and unrestricted (e.g., urban residential, commercial, recreational, agricultural) have all been eliminated and moved to "remediation levels," and since Ecology believes that Method C has also been eliminated for these uses (I do not agree that this was approved by the PAC), additional language is needed to fill the gap and implement the PAC recommendations on page 25 of the PAC report. Specifically, it should be made explicit that where the reasonable maximum exposure (RME) scenario is an involuntary adult or child, that residual risk should not exceed one in a million for individual carcinogens and one in one hundred thousand for total site carcinogens, a hazard quotient of one for non-carcinogens and a hazard index of one for total site noncarcinogens. Where the RME is a voluntary adult, remediation levels for that RME for individual carcinogens should be based on a residual risk not to exceed one in one hundred thousand. The current draft language does NOT adequately address this issue. Conforming changes should also be placed in subsection 708(3)(e) and (4).

1322 p. 29 Subsection 360(5) needs to be corrected to use "soil remediation level" instead of "soil cleanup level" in the second equation, since it is describing the parameters for remediation levels.

1323 **WAC 173-340-370 Expectations**

p. 34 Subsection (1)(g) should cover natural degradation of inorganics also, and not just <u>bio</u>-degradation. This was discussed during negotiations in 1998. See comments to the definition of "natural biodegradation."

COMMENTS ON THE OCTOBER 30TH REVISED DRAFT

1324 **WAC 173-340-400 Cleanup Actions**

p. 37 Subsection (4)(a)(xviii) sets forth a requirement regarding draft financial assurance documentation in the engineering design report. Subsection (4)(a)(xix) also requires that for sites where institutional controls are used, the engineering design report shall include copies of draft deed restrictions and other documents. Copies of financial assurance documents and recorded deed restrictions and other institutional control documents are required under subsection (4)(c)(xiii) and (xix), which discusses operation and maintenance plan requirements. None of these particular requirements were part of the PAC recommendations on institutional controls and financial assurance.

While documentation is certainly required on both issues, these proposals appear to require too much too early. For instance, while it may be reasonable to estimate costs and required amounts of financial assurance at a design and planning stage, it is most practical (and costs are most amenable to estimation) as part of construction documentation. That is, until a system is installed, there is no "as built" on which to refine an estimate of operation and maintenance cost. Further, until construction is complete, there is nothing to operate and maintain. Similarly, until a cleanup action is implemented, it may be premature to expect that all required documentation of institutional controls can be procured. Also, financial assurance documentation often has financial impacts associated with their issuance, and imprecision and need for revision should not be the product of unnecessarily premature requirements.

1325 p. 39 Subsection (6)(b)(iii) is confusing by combining concepts in paragraph (b)(iii). UST and non-UST provisions should be in separate provisions. Also, "other comparable" is confusing in the third sentence and should be deleted as vague and unnecessary.

1326 **WAC 173-340-440. Institutional Controls**

p. 43 Subsection (5) provides that cleanup actions may not rely primarily on institutional controls and monitoring where it is technically possible to implement a more permanent cleanup action for all or part of the site. A similar provision is also included in the revised draft under WAC 173-340-350(8)(d)(v)(B) (p. 26). This is inconsistent with the PAC recommendation that "institutional controls [be] judged by the same remedy selection standards ... as are used to judge other cleanup actions." See PAC Report, p. C-49. It is also inaccurate in describing agency decisions that have allowed institutional controls and monitoring when active cleanup was prohibitively costly (e.g., cleaning up groundwater when there is only a minor exceedance of cleanup levels).

1327 **WAC 173-340-515 Independent Remedial Actions**

p. 51 As mentioned during negotiations in November 1998, Ecology should issue guidance to further clarify what is meant by "independent remedial actions must still meet the substantive requirements of this chapter" in subsection 515(3)(b). The Note to Reviewers should also point out that the new provisions are NOT intended to alter submittal requirements formerly located in section 300(4) and should solicit comments on how to make that clear.

COMMENTS ON THE OCTOBER 30TH REVISED DRAFT

1328

WAC 173-340-545 Private Rights of Action

p.56 In Subsection 545(4)(a), the generic reference to section 350 is confusing. Ecology should issue guidance on what is meant by "substantially equivalent" in this context.

1329

WAC 173-340-700 Overview of Cleanup Standards

p.69 Subsection (2) describes the concept of cleanup levels, and is notably different from its definition in section 200. This is unnecessarily confusing! It provides that, in addition to being a concentration of a hazardous substance in an environmental medium, a cleanup level also defines the area or volume of the medium that must be addressed by the cleanup action. This is not accurate, because it is the cleanup level combined with the point of compliance in any particular media that generally describe the area or volume to be addressed.

1330 p. 69 Subsection (3) describes cleanup standards. See comments on the definition of "cleanup standards" in section 200.

1331 p. 69 Subsection (4)(a) describes the relationship between cleanup standards and cleanup actions. It states that it is MTCA's goal "to restore sites to cleanup levels without the need for future restrictions on the use of affected properties or resources." Such a goal is not found in RCW 70.105D.010 or WAC 173-340-100, and was not a PAC recommendation. Indeed, this actually misstates the statutory goal in RCW 70.105D.030(2)(e) which says "Apply industrial clean-up standards at industrial properties" and provides for land use restrictions on such properties.

1332 p.69 Additional language should be added at the end of subsection 700(4)(a) clarifying how remediation levels fit into the picture, stating something like the following: "Remediation levels shall meet the protectiveness standards set forth in WAC 173-340-360(4)." For completeness, the changes suggested above regarding subsection 360(4) must also be made to clarify residual risk parameters.

1333 p. 70 Subsection (5)(a) describes Method A. The way it is currently worded implies that cleanups that meet industrial Method A soil cleanup levels are not considered "clean." This is unnecessarily confusing, since Method A industrial numbers are certainly deemed to be "protective" when properly applied. It would be clearer to move the introductory clause "except for industrial method A soil cleanup levels" to the end of the sentence.

1334 p.71 Subsection (6)(d) should not delete the reference to "new scientific" information since it is still relevant (i.e., the addition of "site-specific" is good, but it is not synonymous with and should not replace, "new scientific"). Rather, a cross reference to subsection 702(14) should be added for new scientific information.

1335 p.72 Subsection (7) again suffers from the lack of acknowledgment that cleanup actions may ultimately be based upon remediation levels. This will certainly lead to confusion. Probably here and in subsection 410 there should be some statement along the lines of the following: "If the department approves remediation levels as part of remedy selection under WAC 173-340-360, then the department will approve the means of demonstrating compliance with remediation levels in conjunction with the compliance monitoring plan under WAC 173-340-410."

1336 p. 72 Subsection (8) discusses the process for setting cleanup standards and selecting remedies for petroleum contaminated sites. This subsection should be rewritten along the

lines proposed by Mike Gillett during negotiations in November 1998. See language provided to Ecology (Trish Akana) by Mike Gillett during negotiations.

1337

WAC 173-340-702 General Policies

p. 74 Subsection (3) provides that both cleanup standards and cleanup actions shall be provide conservative estimates of risk to human health and the environment. The current rule does not apply this provision to cleanup "actions", and it is not clear what this means in relation to remediation levels. This provision should only refer to cleanup "standards", since that is what section 702 is supposed to cover.

1338

p.74 Subsection 702(9) should be deleted. It is repetitive of the discussion in subsection 700(4), but different enough to be confusing. Further, Subsection 702(9) is incorrect in stating that cleanup levels must be met "throughout a site". Under 740 and 745, the point of compliance is NOT necessarily throughout the site. The last sentence in Subsection (9) resembles the old hierarchy that the PAC recommended be eliminated. Further, "may be acceptable" in the second sentence is not descriptive of the requirements imposed on all cleanup actions that they be protective of human health and the environment. These changes are not from language approved by the PAC.

1339

p. 75 Subsection (14) describes burden of proof requirements. These requirements currently apply to persons proposing to use Method C cleanup levels or conditional points of compliance. The revised draft extends these requirements to proposals for use of alternate RME scenarios and site-specific exposure parameter values. This was not part of the PAC's risk assessment recommendation.

1340

p. 75 Subsection (15) describes considerations applicable to new scientific information. It limits the consideration of new scientific information up to the time of issuance of an order or decree, unless triggered under periodic review or a reopener. This was not part of the PAC recommendation on risk assessment, and the timing doesn't make much sense. That is, there is often a substantial amount of work during the RI/FS that could uncover new scientific information. If a time period is specified, it should be the time of issuance of a draft cleanup action plan under section 380 rather than the time of issuance of an order or decree.

1341

WAC 173-340-704 Use of Method A

p. 76 The provision in subsection 704(1)(d) is potentially very confusing, because it is mixing concepts. Essentially, Method A is NOT used for establishing soil cleanup levels protective of terrestrial ecological receptors, but the provision is written as if it is used in that fashion, as long as it isn't inconsistent with the eco risk provisions. This seems like a very convoluted way to address eco. Instead of the language used here, it should be replaced with a caveat along the lines of the following: "Method A is not necessarily protective of terrestrial ecological receptors. The ecological evaluation provisions of WAC 173-340-7490 to 7494 should be consulted to determine cleanup levels, if any, necessary to protect terrestrial ecological receptors."

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1342 **WAC 173-340-705 Use of Method B**

p. 77 There is no discussion of modified Method B or how site-specific risk assessment can be used to develop remediation levels. For example, there is no discussion of how land uses other than residential should be evaluated (i.e., with site-specific risk assessment resulting remediation levels). There should at least be some text and a reference to the provisions addressing modified method B in WAC 173-340-708(10) and remediation levels in WAC 173-340-360.

1343 **WAC 173-340-706 Use of Method C**

p.78 Subsection (1)(b) limits the use of Method C for soil cleanup levels to industrial sites that qualify under section 745. This goes beyond the PAC recommendation to eliminate the current default commercial RME scenario under section 720. See PAC Report, p. C-1.

1344 p. 79 There is no discussion of what modified Method C consists of, or how site-specific risk assessment can be used to develop remediation levels. See comments above on modified Method B.

1345 p. 79 The provision added in subsection 706(1)(c) regarding Method C air cleanup levels for utility vaults and manholes is not related to a PAC recommendation, and potentially may conflict with OSHA and WISHA worker exposure rules. It should be deleted.

1346 **WAC 173-340-708 Human Health Risk Assessment Procedures**

p. 82 Subsection (3)(c) refers to evaluation criteria under sections 720 through 760. It is not clear what criteria in 720 through 760 this text is referring to. Consistent with PAC recommendations, when a site-specific risk assessment is performed, the PLP must demonstrate that the reasonably maximum exposed individual and scenario are appropriate and justified. If a PLP demonstrates this, no other constraints should exist.

1347 p. 82 Subsection (3)(e) and (4) should include additional language to address risk levels used for determining remediation levels based on alternative RMEs. See comments above for subsection 360(4).

1348 p. 86 Subsection (8)(d) describes methods applicable to the assessment of risk posed by dibenzo-p-dioxins and chlorinated dibenzofurans. This was not a PAC recommendation. What is its basis?

1349 p. 86 Subsection (8)(e) describes methods applicable to the assessment of risk posed by carcinogenic PAHs. This was not a PAC recommendation. What is its basis?

1350 p. 87 The revised draft drops the discussion of methodologies for assessing lead toxicity, including the IEUBK model. The use of the IEUBK model was not part of the PAC recommendations, but hasn't it been approved by the Science Advisory Board? If so, since Ecology is including SAB initiatives in the revised draft, shouldn't the IEUBK model be included?

1351 p. 87 Subsection (9)(a) describes how bioconcentration factors shall be established. It provides for the use of the octanol-water partitioning coefficient for organic substances where no value is available from EPA. This was not a PAC recommendation. During 11/98 negotiations, it was clarified that this was an option based on "new science" and not a require-

ment. Thus, the last sentence should be revised to add ", if appropriate," after "may be used."

1352 p. 89 The revised draft strikes the provision that risk assessment results be presented using one significant figure. This was not a PAC recommendation.

1353 **WAC 173-340-709 Methods for Defining Background Concentrations**

p. 89 The revised draft amends this section "to bring it into conformance with current Ecology guidance." Similar amendments are made in sections 720 through 750. These amendments, which eliminate methodologies permitted under the current rule, were not part of the PAC's risk assessment recommendation.

Further, it is not clear how the addition of this language improves on or clarifies the existing process, because PLPs have the ability to use these statistics under the current rule. In addition, policy and technical issues associated with mandating these statistical techniques have not been addressed.

The current language identifies compliance goals, some statistical techniques for evaluating site data, and says that other methods are accepted by the department. The purpose of developing the Statistical Guidance for Site Managers document was to identify other methods that are approved by the department. Examples of problematic language include:

- The proposed language for dealing with site data below the practical quantitation limit mandates methods that must be used and does not provide flexibility. PLPs should always have the ability to use 1/2 of the detection limit for data below the practical quantitation limit if they so choose.
- When comparing site data to the three-fold criteria the PLP should have the ability to compare the maximum detected site concentration to the cleanup/remediation level in instances when the maximum detected concentration is less than the cleanup/remediation level 95% UCL statistic. This is critical when the detection level and cleanup level vary significantly in a way that affects the standard deviation.

Examples of problems with the current language include the following:

Case 1: all samples below cleanup level

If your sampling data includes non-detects as well as samples near (but -for this example- below) the cleanup level, and the detection level is a couple orders of magnitude below the cleanup level, the 95% upper confidence limit on the data will be higher than the cleanup level (can be order of magnitude or more higher depending on the data) due to the large standard deviation in the data set (i.e. the large numerical difference between the non-detects and the samples near the cleanup level reduces confidence in the ability to predict an upper level)

Case 2: data insufficient to assume a distribution

The ability to calculate a 95% confidence limit is predicated on the assumption that the data is normally distributed (bell curve). You need sufficient data to make that assumption, which you may not have available. If the data is lognormally

distributed you can transform it to a normal distribution by looking at the logs of the data, but you still need enough data to make a determination.

1354 **WAC 173-340-720 Ground Water Cleanup Standards**

p. 92 Subsection (1) provides an overview of the section. The overview is lengthy, confusing and inconsistent with the later portions of the rule. For example, in the seventh paragraph, it states that few ground waters are expected to be considered non-potable. This appears groundless. For instance, it clearly ignores the substantial number of low-volume perched ground waters in the State. If this statement is retained, it should state that few "large volume" ground waters will be nonpotable.

Subsection (1) also states that additive health effects need to be considered if there are multiple contaminants with the same health effect (such as cancer). Similar provisions are found in sections 730 through 750. Additive effects need not be considered merely because multiple chemicals have carcinogenic effects, unless those effects relate to the same organ. Requiring consideration of additive effects where the same organ is not targeted was not a PAC recommendation.

1353 p. 95 The changes to the Method A table appear to be department initiated except regarding TPH. In particular, the justification for, and impact of, reducing the standard for vinyl chloride to two orders of magnitude below the federal MCL are unclear. It is questionable that 20 parts per trillion VC will ever be achieveable through current treatment technology, or that vinyl chloride can be detected in groundwater without interference from its parent compounds TCE and DCE. Has anyone examined the practical implications of the change or analyzed whether the extra conservatism over and above EPA standards is worth the correlative cost?

1356 p.98 Subsection (7)(b) describes provisions applicable to cleanup levels for ground water that flows into nearby surface waters, where those cleanup levels are not based on a drinking water use. This is based on the current provision at WAC 173-340-720(1)(c) (the Harbor Island example), but a number of new requirements have been added which were not part of the PAC's recommendation. For example, a requirement is added that a PLP must be able to demonstrate that the public water system serving the site has sufficient capacity to meet future development. The expectations are unclear. Further, the provision in subsection 720(7)(b)(iv) goes beyond the current requirement that groundwater flow not cause an exceedance of surface water standards, and includes sediment standards. This should be deleted since it is duplicative of the "cross-media contamination" prohibition in subsection 730(2)(d), but also since it addresses sediment points of compliance outside of the context of WAC 173-204 and is thus confusing.

1357 p. 100 New Subsection 8(b)(iii)(E) is unclear. What is meant by "will not adversely impact public or private site development"? This is much too vague to be meaningful.

1358 p. 102 Subsection (10)(d)(i)(D) describes off-site conditional points of compliance. It requires the use of AKART for sites abutting ground water. The PAC recommended that this provision be eliminated from the rule, or limited to the maximum extent practical to eliminate duplicative analyses. See PAC Report, p. C-50. To our knowledge, nothing has been issued from the Attorney General's office in writing explaining why the AKART analysis and the MTCA remedy selection process cannot be considered essentially equivalent. The current draft leaves a lot of uncertainty regarding what meets AKART.

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1359 p. 103 Subsection 10(e) is inconsistent with the PAC recommendation that upland monitoring wells be usable for measuring compliance with a conditional point of compliance in the surface water near the surface water/groundwater interface. The discussion at the PAC was to the effect that the use of upland wells was often necessary for measuring compliance since dilution in the surface water was not allowed. Further, the PAC recommended that dilution within the groundwater between the upland well and conditional point of compliance "should" be allowed. Thus, the language making the use of upland wells and dilution considerations discretionary by the department is inconsistent with the PAC recommendation. See the PAC report, pg. C-50. At the very least, the language should be changed so that it is apparent that upland monitoring wells and dilution allowances will typically be allowed, with the caveats being the exception. Further, the intent of subsection 10(e)(iii)(B) is unclear. What is being described? Also, "adversely affect the surface water or sediments" sounds like a different standard from provisions elsewhere indicating that groundwater discharges should not cause exceedances of surface water and sediment quality standards. There should not be a different standard here, and the provision is unnecessary because it is redundant.

1360 p. 103 Subsection (11)(a) contains language regarding bioassays and biomonitoring that are unrelated to any PAC recommendation. It is also confusing in light of differing provisions in subsection 730. Isn't it more appropriate to rely on 730 to state the means of showing compliance?

1361 p. 103 The changes in subsection (11)(d) are not PAC-related. Substantively, the changes are problematic. See comments for section 709.

1362 **WAC 173-340-730 Surface Water Cleanup Standards**

p. 110 Most of the proposed changes are unrelated to PAC recommendations, except regarding TPH and site-specific risk assessments. Many of the comments applicable to section 720 are similarly applicable here. Ecological risk provisions (e.g., sections 730(4)(c)(iii), 730(5)(b)(ii) and 730(8)(g)) are completely unrelated to PAC recommendations, which focused solely upon terrestrial risk because the appropriate stakeholders were not represented on the PAC to address surface water and sediment issues. Additionally, addressing sediments in subsection 730(8)(g) is redundant to both subsection 730(2)(d) and section 760 and is potentially confusing. The reference to sediments in subsection 730(8)(g) should be deleted.

1363 p. 110 There are problems with the statistical provisions in subsection 730(8). See comments above regarding section 709.

1364 **WAC 173-340-740 Soil Cleanup Standards**

p. 112 Subsection 740(1) only obliquely refers to remediation levels, including those related to nonresidential land uses, in the eighth, ninth and tenth paragraphs. "Remediation levels" and land use based modifications allowed under 708 should be clearly referred to in order to provide a clear explanation.

1365 p. 113 Subsection 740(2)(b) misstates MTCA requirements by saying that a cleanup action must address "all areas" of the site. This ignores the point of compliance of 15 feet for direct contact, which may be the only issue at a site.

1366 p.115 The draft is misleading in how it describes the relationship between Method A and the eco risk provisions. See comments above regarding section 704.

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1367 p. 115 Revisions to Subsection (4)(b) eliminates the existing default method for setting soil cleanup levels that are protective of ground water (the 100 times method), and replaces them with a new section 747. We understand that this change has been initiated by Ecology and reviewed by the SAB, however we have not seen any SAB recommendation covering the new 747 provisions. Boeing has submitted technical comments on the 747 proposal that have not yet been addressed. While the provision of guidance on acceptable methods for site specific estimates are welcome, we are very concerned about the complexity and potential costs associated with the changes, especially the elimination of the current default. The economic analysis of the rule changes should clearly address this issue.

1368 p. 124 Subsection (4)(b)(iv) adds dermal contact as a pathway to be considered under standard Method B provisions when "changes to default equations and values would result in soil cleanup levels that are high enough that dermal contact would become a significant potential exposure pathway." This change is very troublesome for several reasons. First, the PAC recommendation was that additional pathways be considered when a Modified Method B or Modified Method C cleanup level results in significantly higher values for cleanup levels than would be calculated under standard methods. See PAC Report, p. C-10 regarding 708(10)(c). Therefore, it is confusing as to why this change is included under the Standard Method B provisions rather than the Modified B provisions. It begs the question then what "changes to default equations and values" means if it doesn't mean Modified Method B. Indeed, there is additional language included under the Modified Method B provisions in subsection 4(d) that make this all the more confusing. Why is it in different places? Additionally, the draft "standard" in 4(b)(iv) for considering the pathway is whether "levels high enough that dermal contact would become a significant pathway". Why is this different from the standard specificallly negotiated in the language of subsection 708(10), which looked at whether the modified B level itself was "significantly higher" than the Standard B level? The difference has no apparent justification, and is confusing. In negotiations last November, Carol Kraege agreed that the language of 708(10) should be the model for what is done with dermal and vapor pathways.

1369 Even more troublesome is the fact that the consulting community tells us there is not enough scientific information for dermal exposure to meet the quality of information requirements identified in 173-340-702. For example, there currently is not one dermal toxicity value in IRIS or HEAST. Therefore, in addition to all of the exposure factors, every dermal toxicity value must be reviewed and approved by the SAB, the Department of Health, and EPA. This again supports use of the standard agreed to by the PAC, that dermal exposure issues must cause Modified B and C levels to be significantly higher than Standard B and C levels before this pathway is added.

1370 p. 117 Section (4)(b)(v) also requires that Standard Method B cleanup levels consider the volatilization of soil vapors both to ambient and indoor air. As with the dermal pathway, this completely ignores the specifically negotiated language of 708(10) limiting this pathway to consideration under Modified Method B, and only when Modified B is "significantly higher" than Standard B. Further, insufficient technical and policy analysis has been conducted to support this change.

1371 p. 118 References in 4(d)(ii) and (iii) to 708(11) should likely refer to 708(10).

1372 p. 119 Subsection 4(e)(iv) imposes a new dust consideration, which is imprecise (based on particulates? concentrations?) and is not based on a PAC recommendation.

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1373 p. 120 Subsection 7(b), and similar language in the overview in subsection 1, contains new language indicating that the point of compliance for vapor is throughout the site. This does not appear appropriate below the groundwater table.

1374 p. 120 Subsection 7(e) misstates the process when it says that "the cleanup action may be determined to comply with cleanup standards" in the second sentence. It is predicated on containment, thus the department would be approving remediation levels, not determining that the action complies with cleanup standards (Ecology has specifically refused our request that "cleanup standards" be defined to include remediation levels).

Section (7)(e) also describes certain requirements with respect to cleanup actions that involve containment. It requires the use of a "site-specific risk assessment" to demonstrate that a cleanup action involving containment is protective. This is confusing, and should state instead that remediation levels must be approved that meet the standards in 708 and 860.

1375 p. 120 Section (8)(d). See similar comments under 709.

WAC 173-340-745 Industrial Soil Cleanup Standards

p. 123 See comments under section 740. Most apply here as well.

1376 p. 123 The overview in Subsection (1) misstates the applicability of industrial standards in the third paragraph by saying that "It is expected that a limited number of industrialized areas" qualify for industrial standards. This is completely contrary to the statutory mandate in RCW 70.105D.030(2)(e) that requires the department to "apply industrial clean-up standards at industrial properties." This statement should be deleted as erroneous and misleading.

The seventh paragraph also contains a statement with a questionable basis, saying that "Industrial facilities typically need a plentiful source of water and thus are often located over highly productive aquifers." This not only sounds like conjecture, but also ignores that many industrial facilities in urban areas rely upon municipal water just like everyone else, which is entirely from surface water supplies in some areas. Further, many industrial facilities do not need much water, such as warehouses and rail transportation. This statement is not only inaccurate, but unnecessary, and should be deleted.

1377 p. 126 Subsection 745 (3)(a)(iv) inaccurately describes the relationship between Method A and Eco risk standards. See comments to section 704.

1378 p. 128 Subsection 745(5)(b)(iv) suffers from the same problem as subsection 740(4)(b)(iv). See comments above.

1379 p. 129 Subsection 745 (5)(b)(v) suffers from the same problem as subsection 740(4)(b)(v). See comments above. Also, of particular concern in the industrial context is the potential conflict of the new MTCA provisions with OSHA and WISHA provisions that already regulate indoor air concentrations. Members of the SAB have previously indicated that fate and transport modeling of vapors is highly variable, and that measurements may be much more reliable. Note however, that measurement is not determinative of MTCA compliance in the industrial context, since indoor air is often affected to some extent by the processes contained in the buildings themselves. Thus, it cannot be assumed that detected concentrations relate to soil concentrations under a building floor instead of the industrial processes located within the buildings themselves. The processes and indoor air exposures at industrial facilities are subject to safety regulations imposed by WISHA and OSHA. If a

MTCA derived level is less than that imposed by WISHA and OSHA, and the source of vapor is potentially an industrial process, measurement will not be adequate for determining MTCA compliance. Yet, at the same time, modeling has been thought to be unreliable! Ecology should refrain from regulating indoor air concentrations when the same indoor air is already subject to safety regulations imposed by WISHA and OSHA. It is both unnecessary and difficult to implement.

1380 p. 130 References to 708(11) in subsections 5(d)(ii) and (iii) should likely be changed to refer to 708(10).

1381 p. 131 The point of compliance for vapor in subsection (7) has the same problem as pointed out above in reference to 740(7).

1382 p. 131 Subsection (8) has the same statistical problem as pointed out in comments on section 709.

WAC 173-340-747 Soil Concentrations for Groundwater Protection

See comments on this issue above, regarding 740(4)(b).

1383 **WAC 173-340-7490-94 Terrestrial Ecological Risk Sections**

In general, these provisions still seem too complex and will likely be confusing and burdensome for small businesses and the general public. As a general matter, the Ecology draft still does not address how agricultural or large recreational lands (e.g., golf courses) will be handled under this section. This is potentially a huge source of large sites that may be subject to site specific evaluations, and should be more clearly addressed.

Additionally, it is not really clear from the Note to Reviewers how the pilot rule will be handled procedurally. The rule text itself doesn't mention that it is a pilot rule, and it certainly should if it is adopted before required pilot studies are complete. This whole concept should be clarified for the public.

1384 **WAC 173-340-7490 Terrestrial Ecological Evaluation Procedures**

p. 138 Subsection (1)(a)(iv) should more specifically refer to the provisions in 350(7)(c)(iii)(F) and 350(8)(c)(i)(D), that discuss consideration of eco investigation and risks in the context of human health related activities.

1385 p. 138 Subsection (3)(b) does not provide sufficient direction regarding what will be considered a "significant" adverse effect in the context of a site specific evaluation. In lieu of the department's proposal, the following language is suggested, which provides a more complete idea of what "significance" will mean:

"For the purposes hereof, the significance of an adverse effect relates to the ecological significance of an impairment of reproduction, growth or survival for the impacted species at a site. When site-specific studies are performed, the measurement endpoints should be relevant to the management goals of protecting the terrestrial environment from significant adverse effects. Not all statistically significant changes in measurement endpoints are ecologically significant. For threatened and endangered species, the significance of an adverse effect is evaluated relative to an impacted individual. For all other species, the significance of an adverse effect is evaluated relative to an impacted local

population of species of concern, rather than to a particular individual or subgroup, and refers to an adverse effect that is significant in the way that it alters important structural or functional characteristics or components of the affected ecosystem."

1386 p.139 The definition of "commercial property" in Subsection (3)(d) is too narrow for the purposes it is used in this section. The definition is only used in this section for a very limited purpose, that is, to identify which properties in addition to industrial property should be evaluated primarily regarding their effect on wildlife. The definition is only used to distinguish it from other properties, which must consider effects on both wildlife and plants. These properties are typically so highly disturbed that there is only minor native or semi-native plant life. Thus, protecting plants should be a minor concern since most are ornamental. Accordingly, the definition of "commercial property" should be revised to be more along the lines of the following:

"For purposes of this section, "commercial property" shall mean any property used for non-residential or urban residential/mixed use purposes that is typified by a high degree of land development or disturbance, such that most of the property is either covered with man-made surfaces, gravel, landscaping, or plants which are primarily ornamental rather than native or semi-native."

Ecology should also consider extending this same treatment to agricultural lands, since they are highly disturbed and have as their main purpose growing plants which are not native or seminative. It makes sense, therefore, to primarily evaluate these lands for their effects on wildlife rather than protection of plants (which these property owners already do for purposes of their business!).

1387 p. 139 The 15 foot point of compliance in subsection (6) is inconsistent with the PAC recommended flow chart and guidance where 6 feet was identified as the maximum depth of concern for terrestrial ecological receptors. If subsurface soil is excavated, there will no longer be any habitat over the excavation. If excavation is occurring, it is likely that development will also occur which will also eliminate habitat.

1388 **WAC 173-340-7491 Exclusions From a Terrestrial Evaluation**

p. 139 The current draft of Subsection (1)(c)(i) and (ii) are completely unacceptable. Subsection (1)(c)(i) provides: For sites contaminated with hazardous substances other than those specified in subsection (ii), there is less than 1.5 acres of contiguous undeveloped land on the site or within 500 feet of any area of the site. In the PAC-approved flow chart, this criteria was: "Is there less than 1.5 contiguous acres of undeveloped land within 500 feet of the area of contamination." Similar language was used by the PAC for the provision contained in (1)(c)(ii) of the draft. The definition in the rule is an apparent attempt to expand the previous definition, and is inconsistent with the PAC recommendation. The original language was intended to assure a particular proximity of undeveloped land of a certain size (chosen specifically as a surrogate for relevant, potential habitat) to a contaminated area with certain contaminants (chosen specifically due to heightened concerns associated with those particular chemicals). This is obvious from the way that subsections 7491(c)(i) and (ii) are structured! The use of the term "site", which can encompass a whole property (if the department decides to include a larger area, e.g., where there is more than one area of contamination), completely departs from this concept. The terminology used by the PAC should be substituted here.

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1389 p. 140 Subsection (1)(c)(iii) is too narrow for the purpose it is to serve. Essentially, it is intended to be a surrogate for what is potential habitat. Requiring that there be impervious surfaces or "other barriers" gets away from the intent, which was to suggest what might be a place where potential receptors would likely be located. We suggest the following instead:

"'Undeveloped land' shall mean land that is characterized by native or semi-native vegetation, and shall not include land which is, or is reasonably expected to be, covered by buildings or roads or otherwise substantially altered as part of its land use, such as lands used for agriculture, industry, commercial development, high density residential development, transportation, or intensive recreation."

1390 p. 140 Subsection (2)(a)(i) provides: The site is located on, or directly adjacent to, property where management or land use plans will maintain or restore areas of native or semi-native vegetation (e.g., green-belts, forestlands, locally designated environmentally sensitive areas, open space areas managed for wildlife, and some parks or outdoor recreation areas. This does not include park areas used for intensive sport activities such as baseball or football).

This criterion was not discussed during the PAC process. The criterion that was discussed was the presence of existing sensitive habitat in the vicinity of the site. This criterion will result in most if not all non-urban sites having to perform site-specific evaluations. It is also uncertain what level of documentation is required for a "management or land use plan." It should be at the very least something of official public record.

1391 **WAC 173-340-7492 Simplified Terrestrial Ecological Evaluation**

p. 140 Subsection (1)(b) should be expanded to include agricultural land similarly to commercial land. See comments above regarding the definition of "commercial property."

1392 p. 140 Subsection (1)(d) provides: If none of the simplified evaluation screening step conditions are met, a potentially liable person may use the chemical concentration numbers listed in Table 7 as cleanup levels, or shall conduct a site-specific terrestrial ecological evaluation under WAC 173-340-7493.

This language is inconsistent with the PAC flow chart and guidance. Thereunder, a PLP could use the Simplified Evaluation screening numbers as cleanup levels, could perform site-specific bioassays to evaluate toxicity and/or bioaccumulation, or could also perform a voluntary site-specific evaluation.

1393 p. 141 Subsection (2)(c)(i). See comments above on point of compliance.

1394 p. 141 Table 6. See comments above regarding distance issue on page 139, and the definition of "undeveloped land" discussed in relation to page 140. These same issues are involved in the first item on the table.

1395 p. 141 Table 7 and Table 8. There is no known justification for the TPH concentrations listed. TPH does not appear to meet the criteria set forth in section 7494 for inclusion in table 7, since we are unaware of evidence that it is persistent, bioaccumulative or highly toxic. Indeed, it is known to degrade quite readily.

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1396 **WAC 173-340-7493 Site-Specific Terrestrial Ecological Evaluation**

p. 141 Subsection (2)(b) requires that a site-specific evaluation be done in consultation with the department. This is unacceptable to the extent it pertains to independent cleanups.

1397 p.142 Subsection (3)(a)(i) suffers from the same statistical problem as identified for section 709. See comments above.

1398 p. 142 Subsection (4) provides: If it is determined during the problem formulation step that further evaluation is necessary, the soil concentrations listed in Table 8 may be used as the cleanup level. As discussed with Carol Kraege during negotiations in November 1998, a much stronger caveat is needed regarding use of these concentrations as cleanup levels because they are very conservative and could result in decisions to destroy habitat if used without weighing the potential impacts of the remedy. Even though subsection (3)(a)(i) contains a caution, it is unfortunately the case that these numbers are the only numbers easily derived under the draft rules. Even more clarity is needed that these should primarily be considered as conservative screening levels. The suggestion that they could be used as cleanup levels could result in Ecology site managers using these numbers as a starting point, which is clearly inappropriate and could lead to unnecessary habitat destruction. On this issue, Carol Kraege agreed that guidance should warn against use of these numbers for other than screening purposes.

1399 p. 144 Subsection (7) provides that the department shall consider proposals for modifications to default values provided in this section based on new scientific information in accordance with WAC 173-340-702(14).

The quantitative approach used in sections 7942 and 7943 contains many policy and technical issues that may not themselves meet the section 702 quality of information requirements. The current rule though, presumes that any new information must be scrutinized based on 702. This does not acknowledge, however, that the science is both evolving rapidly and that the proposed rules are not replicating anything we are aware of in any other program in the nation. We would suggest that PLPs be allowed to overcome an assumption underlying the standards in the rules by showing that it either does not reflect site conditions or does not meet the quality of information requirements relevant to that particular site.

WAC 173-340-750 Cleanup Standards to Protect Air Quality

p. 145 See the comments on the vapor pathway in Subsection 745(5)(b)(v).

p. 146 Language in subsection (2) should be underlined since it is new language.

1400 p. 146 Regarding the statement regarding a need to address "all areas" of the site in subsection (3)(b), see the comments on point of compliance in subsection 740(7)(b).

1401 p. 150 Subsection (8) regarding point of compliance is subject to the comments above.

1402 p. 150 Subsection (9)(a) regarding potentially required monitoring is subject to the comments on the vapor pathway in 745 (5)(b)(v).

1403 p. 150 Subsection (9) regarding statistical issues is subject to the comments on section 709.

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Your statewide
business advocate

January 18, 2000

Trish Akana, Rules Coordinator
Toxics Cleanup Program
Washington Department of Ecology
P.O. Box 47600 Olympia, WA 98504-7600

RE: Proposed Changes to MTCA Rule

Dear Ms. Akana,

The Association of Washington Business (AWB) appreciates the opportunity to comment on proposed amendments to Chapter 173-340 WAC, Model Toxics Control Act (MTCA) cleanup regulation, Chapter 173-322 WAC, Remedial Action Grant regulation, and Chapter 173-321 WAC, Public Participation Grants regulation as filed by the department November 17, 1999.

Regarding substantive comments on proposed rule language, AWB supports comments by the Western States Petroleum Association, Washington Oil Marketers Association, Weyerhaeuser, Michael Gillett, Boeing, Kennedy/Jenks Consultants, Fluor Hanford Incorporated and many other stakeholders which represented business interests throughout the rule-making process.

The AWB has organized its' comments in the following order:

I. General Comments
II. Specific Concerns
III. Small Business Economic Impact Statement Comments
IV. Environmental Impact Statement Comments
V. Negotiated Rulemaking Process Comments
VI. Summary/Conclusion

1173

I. General Comments

In 1995, the Legislature passed Engrossed Substitute House Bill (ESHB) 1810, which directed Ecology to establish the MTCA Policy Advisory Committee (PAC). This committee was comprised of a broad range of interests including the Legislature, Ecology, agriculture, large and small businesses, environmental organizations, and local and state governments, and was tasked with establishing goals and recommendations for new MTCA regulations.

comments submitted by fax and e-mail on 1/18/00

1173 cont.

Those goals, which were part of the PAC's 1996 report to the Legislature, included making the rule:

> **"fairer, easier to understand, more flexible, less ambiguous, and less expensive."**

Ecology restated these goals in the form of a MTCA Fact Sheet in November 1999. While the members of the AWB MTCA Task Force commend Ecology for their efforts and hard work relative to revising the MTCA, we believe that the proposed rule falls considerable short of attaining the goals established by the MTCA PAC. Many of our members have indicated that the new rule is actually worse and will make cleanups more difficult than the current MTCA rule. Therefore,

> **AWB requests that the Department postpone the MTCA rule-making process until discussions between interested stakeholders results in rule language that accomplishes or at the very least, comes closer to achieving the above stated goals of the MTCA PAC.**

II. Specific Concerns

As stated above, we believe the proposed MTCA rule does not accomplish the goals of the MTCA PAC:

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1) The rule is *not* fair.

- The increased costs associated with the new requirements and cleanup levels are not associated with an improvement in the environment.
- The increased costs associated with the new requirements and cleanup levels are not associated with a reduction in risk or further protection of human health.
- The proposed rule contains many risk assessment and risk management tools that will make cleanups more complex and confusing.

1175

2) The proposed rule is *not* easier to understand.

- The requirements of the rule are confusing even to those who are familiar with the current MTCA rule. Ecology has replaced the current soil-to-groundwater standards formula with two possible methods – both of which are confusing and difficult to implement.

1176

- Ecology states in the Small Business Economic Impact Statement (SBEIS) that the new risk assessment and risk management methods "are more complex and technical," which was not the intent or directive of the PAC.

1177

3) The proposed rule is *not* more flexible.

- ESHB 1810 required that cleanup standards to be based on scientific evidence, human exposure levels, and not be based on "redundant conservative assumptions." Furthermore, the MTCA PAC recommendations included an increased use of site-specific risk assessments. The proposed rule erroneously bases cleanups of groundwater

to drinking water standards. This standard is not appropriate for many sites and adds an unreasonable and restrictive burden where increased flexibility is needed.

1178 **4) The proposed rule is *not* less ambiguous.**

- The proposed rule is vague and lacks instruction on how to complete a disproportionate cost analysis.
- 1179 The terrestrial ecological evaluation provisions add uncertainty and confusion for ecological risk assessments.

1180 **5) The proposed rule is *not* less expensive.**

- Ecology states in the SBEIS that certain small businesses can expect an increase in costs of 20%. Ecology further concludes that the proposed rule will " virtually always" increase cleanup costs for "any business responsible for cleaning up even a small portion of a small area of low toxicity contamination."
- Ecology states in the SBEIS that "small businesses are more likely to face disproportionately higher costs than large businesses."

1181 **III. Small Business Economic Statement Comments**

In accordance to the Regulatory Fairness Act (RFA), RCW 19.85, Ecology is required to prepare a Small Business Economic Impact Statement (SBEIS) if the proposed rule will impose more than minor costs on businesses. Ecology has determined that the proposed MTCA rule does impose more than minor costs to businesses. The RFA obligates Ecology to (1) reduce the costs imposed by the rule on small businesses; (2) list in detail the requirements imposed by the proposed rule; (3) state the costs incurred by businesses in order to comply with the rule; (4) state potential lost sales or revenue; (5) compare costs on small and large businesses; (6) state how the Department will involve small businesses in the development of the rule; and (8) list affected industries.

In preparing the SBEIS, Ecology has not met the requirements of the RFA pertaining to the following areas:

- Methods the Department lists that supposedly reduce costs to businesses including model remedies, site-specific risk assessment, the area-wide point of compliance provision and other methods are not likely to be implemented at many sites due to their complexity.
- Ecology has not adequately considered methods of cost reductions for businesses.
- The SBEIS does not include many costs to businesses such as increased labor, supplies, equipment, and administrative costs required by statute.
- Many requirements such as soil cleanup levels and new minimum testing requirements have not been identified as significantly increasing costs to businesses.
- Ecology has not adequately compared the costs associated with the rule on large and small businesses.

- The SBEIS does not list how Ecology will involve small business in future rule-making procedures as required by statute.

1182

IV. Environmental Impact Statement Comments

The State Environmental Policy (SEPA), RCW 43.21C requires that an Environmental Impact Statement (EIS) be submitted for all "major actions significantly affecting the quality of the environment." The statute further requires that the EIS list "alternatives to the proposed action." The Draft EIS submitted by Ecology is deficient is several key areas:

- The EIS inadequately identifies only two plausible alternatives: (1) No Action Alternative (existing MTCA rule unchanged); and (2) Proposed Action Alternative, (adoption of the proposed rule amendments).
- The EIS completely ignores two alternatives: (1) Implementing the PAC recommendations which AWB supported; and (2) implementation of the Project Oversight Group's recommendations for petroleum cleanups.

1183

V. Negotiated Rule-Making Process Comments

The process of re-writing MTCA began after Ecology and the Legislature received the PAC's recommendations in December 1996. Ecology began holding meetings with stakeholders and in March 1997, the Department issued the following statement in the Rule Authorization Document:

> " All of the Policy Advisory Committee's recommendations to the Legislature and Ecology focus on making the business of cleanups fairer, easier to understand, more flexible with less ambiguity, and less expensive. The Committee has recommended important changes to the cleanup rules that are used to carry out the law. Ecology is committed to carrying out the recommendations of the Committee that resulted from the 18-month study. We believe the changes will create a better Model Toxics Control Act thereby resulting in a cleaner environment."

Ecology stated at the first meeting of the External Advisory Workgroup that "the goal is to reach consensus on the terms of a proposed rule which is presented for public review and comment." By the end of 1997 however, it was clear that Ecology was not interested in developing rule language through a consensus approach – choosing instead to exclude stakeholders from participating in the rule-making process, including the External Advisory Workgroup.

Due to Ecology's departure from the negotiated rule-making process, the Department received numerous negative comments on its February 1998 draft. While we appreciated discussions between Ecology and stakeholders, which resumed in the later part of 1998, the Department again decided to write the rule without stakeholder's input and chose not to consider substantive comments from many stakeholders including AWB. Between December 1998 and when the current proposal was filed in November 1999, Ecology did not participate in negotiated rule-making and did not present stakeholders with any opportunities to review proposed substantive language revisions made by the Department.

1183 cont.

Our specific concerns with the way in which Ecology conducted itself in the negotiated rule-making process are as follows:

- The current proposed rule is mostly language developed by Ecology rather than from the consensus approach the Department agreed to.
- Despite being based on recommendations by the PAC, Ecology rejected the majority of the comprehensive discussion draft developed by AWB without discussions between stakeholders.
- The countless hours and efforts of the many stakeholders involved in the MTCA rule-making process and in the negotiations with Ecology, did not produce a MTCA rule that represents those efforts. The current proposed draft exemplifies this fact in that Ecology has not included a substantial amount of suggested language from those stakeholders, nor does the proposed rule accomplish the goals of the MTCA PAC.

VI. Conclusion

RCW 34.05.328 requires an agency to (1) determine that the probable benefits of the rule are greater than its probable costs; (2) consider alternative versions of the rule; and (3) assure the adopted rule is the least burdensome alternative for those required to comply with it's provisions. We believe that Ecology has failed to meet the requirements of this statute.

We further believe that Ecology has failed to streamline the process of site cleanups, and as previously stated the Department has not implemented the requirements of ESHB 1810 and the recommendations of the MTCA PAC. We also contend that Ecology staff is capable of developing a MTCA rule that better serves the residents of the state of Washington, the environment and the regulated community that must abide by the standards within the MTCA rule. We look forward to working with Ecology and interested stakeholders in developing a rule that better exemplifies the efforts of those committed to this process.

Sincerely,

Grant Nelson
Regulatory Coordinator

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Page 5 of 5

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Columbia Business Center
2501 SE Columbia Way, Suite 240
Vancouver, Washington 98661

January 18, 2000

Trish Akana, Rules Coordinator
Toxics Cleanup Program
Washington Department of Ecology
P.O. Box 47600 Olympia, WA 98504-7600

RE: Proposed Changes to MTCA Rule

Dear Ms. Akana,

Columbia Business Center (CBC) appreciates the opportunity to comment on proposed amendments to Chapter 173-340 WAC, Model Toxics Control Act (MTCA) cleanup regulation as filed by the department November 17, 1999.

Regarding substantive comments on proposed rule language, CBC supports comments by AWB, businesses and many of the other stakeholders, which represented interests throughout the rule-making process. CBC's comments are provided below and organized by overall general comments and more specific comments.

1184

General Comments

The 1995 Legislature required the Washington Department of Ecology to establish the MTCA Policy Advisory Committee (PAC). The PAC was tasked with establishing goals and recommendations for new MTCA regulations. The PAC goals presented to the Legislature included making the rule:

"fairer, easier to understand, more flexible, less ambiguous, and less expensive."

CBC believes that the proposed rule falls considerably short of attaining the goals established by the MTCA PAC. My review of the new rule leads me to believe clean-ups will now be more difficult to complete and more expensive to perform than the current MTCA rule. Therefore, CBC requests that Ecology postpone the MTCA rule-making process until discussions between interested stakeholders results in rule language that accomplishes or at the very least, comes closer to achieving the above stated goals of the MTCA PAC.

Comments submitted by fax on 1/18/00

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As stated above, we believe the proposed MTCA rule does not accomplish the goals of the MTCA PAC:

-The rule is **not** fair.
-The proposed rule is **not** easier to understand.
-The proposed rule is **not** more flexible.
-The proposed rule is **not** less ambiguous.
-The proposed rule is **not** less expensive.

1185

Specific Comments

The remedy selection process described in the proposed amendments is clearly biased toward active remediation as opposed to selecting cleanup actions based on protection of human health and the environment. WAC 173-340-350(9)(e)(ii) states that "cleanup actions shall not rely primarily on institutional controls and monitoring where it is technically possible to implement a cleanup action alternative that utilizes a more permanent cleanup action for all or portion of the site." If human health and the environment are not at risk, natural attenuation and institutional controls should be judged as an adequate remedy for a particular site.

1186

As I read the current proposed rule it becomes clear Ecology disregarded comments and suggestions made by the regulated community and other stakeholders. Ecology chose **not** to develop the regulation by consensus, but rather by directive. This rule-making process was not fair and the process followed by Ecology was largely for "show".

Summary

1187

We further believe that Ecology has failed to streamline the process of site cleanups, and as previously stated Ecology has not implemented the requirements of the Legislature or adopted recommendations of the MTCA PAC. We also contend that Ecology staff is capable of developing a MTCA rule that better serves the residents of the state of Washington, the environment and the regulated community that must abide by the standards within the MTCA rule. We look forward to working with Ecology and interested parties in developing a rule that better exemplifies the efforts of those committed to this process.

Sincerely,

Jim Jakubiak
Environmental Administrator

Tosco Refining Company
A Division of Tosco Corporation
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Telephone: 360-384-1011

TOSCO

January 18, 2000

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Ms. Trish Alicia Akana
TCP Rule Revision
Washington Department of Ecology
P.O. Box 47600
Olympia, WA 98504

Re: Comments on Proposed MTCA Rule Amendments

Dear Ms. Akana:

On behalf of Tosco Refining Company, following are brief comments regarding the Model Toxics Control Act (MTCA) rule amendments proposed November 17, 1999 by the Department of Ecology (Ecology). Tosco's concerns with the proposed amendments are primarily with respect to petroleum cleanups. Within Washington State, Tosco Corporation doing business as various Tosco companies owns and operates the Tosco Ferndale Refinery, several product terminals and some hundreds of gasoline stations that may be impacted by the proposed amendments.

Tosco Refining Company is a member of both Western States Petroleum Association (WSPA) and the Association of Washington Business (AWB). We endorse the comments submitted by both WSPA and AWB regarding these proposed amendments.

Ecology's stated intentions for these amendments are to "make the business of environmental cleanups fairer, easier to understand, more flexible, less ambiguous and less expensive." However, the proposed amendments appear: more complex, less flexible to Potentially Liable Persons (PLPs), reserve more arbitrary requirements by Ecology and will likely result in more expensive cleanups than the current rule. We request Ecology's consideration and response as regards:

1188

1. With regard to the remedy selection process, the amendments fail to incorporate the Policy Advisory Committee's (PAC) recommendation that the bias toward active remediation be eliminated. WAC 173-340-350(9)(e)(ii) illustrates this bias: "[c]leanup actions shall not rely primarily on institutional controls and monitoring where it is technically possible to implement a cleanup action alternative that utilizes a more permanent cleanup action for all or a portion of the site." This bias significantly restricts the use of institutional controls or method C cleanup levels even when such approaches are protective and permanent to the maximum extent practicable.

   Although MTCA 70.105D.030(1)(b) states "In conducting, providing for or requiring remedial action, the department shall give preference to permanent solutions to the maximum extent practicable and shall provide for or require adequate monitoring to ensure the effectiveness of the remedial action" it does not preclude recognizing natural and/or augmented bioattenuation as a permanent solution.

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Tosco recommends that Ecology follow the PAC recommendation.

1189 2. With regards to, at least gasoline release cleanup levels, the proposed amendments result in overly conservative values for method A cleanup levels. This is the result of the computer model and the input values Ecology has selected for use. This is in conflict with any intention to make cleanups easier and less expensive vs. the present rule. Did Ecology undertake any evaluation of current method A corrective actions completed in the state to determine if the current rule and policies were insufficient for protecting human health or the environment? Tosco is not aware of any study concluding that method A gasoline cleanup levels are not protective of human health and the environment.

   Tosco recommends that Ecology change the selected computer model and/or allowed input values or retain current method A clean up levels for gasoline release sites, unless review of relevant data show current clean up levels are not protective of human health or the environment.

1190 3. Under the proposed amendments, the establishment of cleanup levels lacks significant flexibility primarily due to Ecology's choice of groundwater as drinking water as the Reasonable Maximum Exposure (RME) at the vast majority of cleanup sites. The ASTM Risk Based Corrective Action (RBCA) process, anticipates cleanup levels at many, if not most, sites will be based on RMEs other than groundwater ingestion. The proposed amendments establish cleanup levels for nonpotable groundwater via site-specific risk assessment. By comparison, the ASTM RBCA provides for Tier 1 cleanup levels for both soil and groundwater based on a variety of exposure pathways including ingestion, direct contact, and transport to other media. This results in a system that is more useable for all sites.

   Tosco recommends that Ecology re-examine the default groundwater as drinking water RME and allow realistic RBCA RMEs other than drinking water.

Tosco Refining Company appreciates the opportunity to comment on the proposed amendments. We hope that Ecology's responses will result in changes that really do "make the business of environmental cleanups fairer, easier to understand, more flexible, less ambiguous and less expensive."

Please contact me at 360-384-8243 if you have any questions or interest in further discussion. regarding these comments

Sincerely,

R.T. Bremer

R.T. Bremer
Environmental Coordinator

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AVISTA Corp.

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January 19, 2000

Ms. Trish Akana
Washington State Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

RE: Comments on November 1999 Proposed Changes to the Model Toxics Control Act Cleanup Regulation

Dear Ms. Akana:

Thank you for the opportunity to provide comments on the proposed changes to the Model Toxics Control Act (MTCA) regulation. We support Ecology's stated intent of making the business of environmental cleanups more equitable, more flexible, easier to understand, less ambiguous, and less expensive. We are concerned, however, that making the proposed changes to the MTCA regulation will not achieve Ecology's intent.

1191 Numerous changes are proposed to the MTCA regulation. The result would be a regulation that is longer, more complex, and more difficult to comply with than the current regulation. The numerous changes would make it more difficult, more costly, and more time consuming to get from discovery of a potential problem to cleanup of a site; whether cleanup is performed under direct Ecology oversight or as an independent action. If a significant percentage of the parties doing independent cleanups contact Ecology for guidance, Ecology's workload will increase significantly. It is our understanding that Ecology is not currently able to respond to all requests in a timely manner. An increase in the complexity of the process and the number of requests will likely result in cleanup delays at many sites.

1192 The MTCA regulation currently requires protection of the environment, as well as human health, but no procedures to do so are included. The proposed changes include procedures for evaluation of environmental protection (WAC 173-340-7490). We support including exclusions from further ecological evaluation that are applicable at most sites in the evaluation process. High voltage electrical substations, distribution stations, or switchyards should be clearly included in the exclusion criteria. Protection of plants and animals is not an appropriate objective for high voltage facilities. These sites are typically not paved but have special surfaces to eliminate static electricity or electrical arcs. The second exclusion criteria [WAC 173-340-7491(1)(b)] should be reworded to specifically include high voltage electrical substations, distribution stations, and switchyards.

1193 The proposed changes to the regulation include options for a conditional groundwater point of compliance to be off-property in three cases: sites abutting surface water, sites near surface water, and an area-wide point of compliance [WAC 173-340-720(9)(d)]. The proposed changes do not include one case where an off-property point of compliance may be appropriate. For sites where the person conducting the cleanup can assure that adequate institutional controls are implemented and where the affected property owners agree, a conditional point of compliance off of the property should be allowed, even if the groundwater does not discharge to nearby surface water.

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1194 Additionally, with regards to Table 720-1, Method A Cleanup Levels for Groundwater, a detection limit for benzene is not specified to determine whether benzene is present or not detectable in gasoline range total petroleum hydrocarbons. The applicable cleanup level is based on this determination. We recommend that a benzene detection limit of 5 micrograms per liter be specified.

We hope that you will consider these comments prior to finalizing the regulations.

Sincerely,

Douglas K. Pottratz
Environmental Compliance Administrator

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Page 2 of 2

January 11, 2000

Department of Ecology
Attn: Trish Akana
MTCA Rules Revision
P.O. Box 47600
Olympia, WA 98504-7600

RE: Proposed Amendments, MTCA Clean-up Regulations

Dear Ms. Akana;

This letter is in reference to the proposed cleanup levels for petroleum included in the Proposed Amendments to the Model Toxics Cleanup Regulation, and the very probable impact of those proposed amendments on Pollution Liability Insurance.

Kemper Environmental is an insurer for the Washington State Pollution Liability Insurance Agency's Underground Storage Tank Program. We also provide Storage Tank Pollution Liability Insurance in every other state. Prior to my association with Kemper, I was an underwriter for another environmental insurance company who also provided Storage Tank Insurance on a National Basis.

1290 We have not reviewed the proposed amendments in great detail, however, we are alarmed to be informed that the clean-up levels included in the proposed amendments are much more stringent than those currently in place. We are alarmed because if cleanup levels become more stringent in Washington, the cost of petroleum based cleanups will increase. This is because more time and effort will have to be put into the actual cleanup as well as the management oversight and labor that often exponentially increase the cost of the actual removal and treatment of groundwater and affected soils.

It is the insurance company that will most likely bear those clean-up cost increases. In order to pay for those increased costs, the insurance company would be forced into increasing premiums. On the surface, it appears those increases would be significant enough to place the small business owner in a more difficult position regarding the their ultimate goal in reducing operating expenses.

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1290 cont.

Quite frankly, if the proposed cleanup levels are adopted, the cost of cleanup will increase significantly as will the cost for storage tank insurance. If the proposed levels are adopted, Kemper Environmental may be forced to commence an actuarial study, (which would also cost money), to determine to what degree insurance premiums would increase. We sincerely hope that we will not put in this position.

The existence of the Washington State reinsurance program has resulted in saving small and medium size petroleum businesses a significant amount in insurance premiums. If more stringent cleanup levels are adopted and clean up costs increase, those savings will quickly dissipate.

We would like to see and strongly recommend that the department of Ecology withdraw the proposed cleanup levels. We further recommend keeping the existing cleanup standard, as is, for petroleum products.

I truly hope you consider our position before taking action.

Sincerely,

Joseph A. Valenza
Program Manager
Kemper Environmental

CC: Dan Silver
Deputy Director, DOE

Mailing Address:
Dan Silver
Deputy Director
Department of Ecology
PO Box 47600
Olympia, WA 98504-7600

BCC: Jim Sims
Pollution Liability Insurance Agency
1015 10th Ave SE
PO Box 40930
Olympia, WA 98504-0930

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JAN 2 1

Aluminum Company of America

ALCOA

Washington Department of Ecology
Toxics Cleanup Program
PO Box 47600
Olympia, WA 98504-7600

Attention: Mr. James J. Pendowski, Program Manager
Ms. Trish Akana

2000-January 14

Subject: ALCOA Comments on the Model Toxics Control Act Proposed Rule Amendments

ALCOA is pleased to submit comments on the Model Toxics Control Act (MTCA) Proposed Rule Amendments (Chapter 173-340 WAC) and on the associated Draft Environmental Impact Statement (DEIS) for the proposed revisions to this rule. We appreciate the Department of Ecology's efforts to make these amendments available for public review and comment. Our interest in the development of these amendments is reflected not only in the comments presented in this letter, but also as a result of our participation in the Pilot Studies that were conducted to provide information about real world MTCA sites to the Policy Advisory Committee (PAC). The PAC's mission was to develop recommendations to improve the MTCA Program.We were eager to participate in exploring and demonstrating faster and more innovative site cleanups by offering our Northwest Alloys Site as a Pilot participant.

While we are satisfied with some of the revisions , we also believe that there are several significant issues in the proposed amendments that will encumber implementation of MTCA cleanups. We hope Ecology will make needed modification before finalizing this rule, but we are realistic and expect that at this stage, many of our comments will be more a matter of record. We encourage Ecology, however, to keep these and previous detailed comments in mind after the amendments go into effect to see if they hold true. If the predictions described herein are legitimate, it would be prudent to adjust and correct the course of MTCA cleanups in a timely manner and not wait until the next 5-year review.

The following includes our general comments on the proposed rule amendments:

6200 Malaga/Alcoa Hwy Malaga, Washington 98828-9728 USA

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1291 **The Relative Significance of the PAC Process is Understated**

The DEIS reports that MTCA amendments were developed to implement recommendations provided by the PAC and the MTCA Science Advisory Board, to meet required rule update requirements, to reflect Department policies, and to clarify the readability of the current rules. ALCOA believes that the MTCA PAC, mandated by Engrossed Substitute House Bill 1810, should have been the most important source of ideas and suggestions for MTCA revisions. All of the other contributing factors were supplemental to the PAC, and not in our opinion, of equal significance.

The DEIS fails to clearly state under Section 1.1 Purpose and Need, that the fundamental reason that the MTCA amendments were necessary was because of a common concern that MTCA cleanups were too inflexible, procedural and costly. The PAC committed to a common goal, namely to find ways to make MTCA cleanups faster, easier to understand and implement, more innovative, and less expensive. The recommendations of the SAB on several key issues were the result of PAC requests and ideas; similarly the department policies were provided to add clarity and direction. Unfortunately additional non-PAC programs including dermal and vapor exposure pathways were added resulting in the elaborate rule revision that exists today.

1292 **Clarity & Readability of Proposed Rule Amendments are not Improved**

The proposed rule amendments are overly detailed and prescriptive. It is almost twice the size of its precursor suggesting that efforts to streamline the existing rule and achieve the PAC's goals were not very successful. In light of the DEIS statements that 'substantial progress has been made in the identification and cleanup of contaminated sites' in Washington (see also Figure 1.2 in the DEIS), we question why is there a need for a more detailed and complicated cleanup rule? This is particularly mystifying because, according to the department, the sites remaining to clean up represent only 20% of the total universe of sites. Does Ecology anticipate the identification of many undiscovered sites? Is the cleanup of the other 80% of sites (those under investigation or completed) inadequate?

The cascading and cross-referencing text of the new amendments is ambiguous. The documentation and submittal requirements are excessive given the purported problem of remaining contaminated sites mentioned above. And, although the amendments include flexible concepts like Remediation Levels, Disproportionate Cost Tests, Site Specific Cleanup Levels, and alternative groundwater uses, their utility is buried in regulatory doublespeak. As a result, many users may avoid applying them. For example, try to puzzle out the true meaning of a Remediation Level, as described in Sections 173-340-200 and 350:

1293

> *"Remediation Level (REL) means the concentration, or other means of identification, of a hazardous substance in soil, water, air, or sediment above which a particular cleanup action component will be required as part of a cleanup action at a site..."*

This text above obscures the real reason RELs are used – namely, because cleanups to MTCA cleanup standards may be technically impossible or impractical at some sites and that an alternate, higher cleanup level may be technically adequate and suitable.

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JAN 2 1 '04

1292 cont. The requirements of these rules should be easy to understand and implement. One should not have to puzzle for hours over the real meaning. We strongly suggest that Ecology acquire technical editing assistance to make the final rule amendments simple and straight forward.

An essential addition to the rule that we recommend is to include a comprehensive subject index in the final version. This will assist the user quickly locate needed information.

1294 **Too Much 'Command & Control' is Reflected in the Proposed Amendments**

A prevailing and redundant theme of these amendments is the emphasis on Ecology's approval rights and discretionary authority. This emphasis may erroneously suggest that innovative ideas or new proposals may be opposed or subject to excessive research efforts. Use of Site Specific Risk Assessments that are protective of human health and the environment is encouraging. However, to assume that, in all cases, the use of alternate cleanup levels requires institutional controls, such as Deed Restrictions, may be overly cautious.

1295 In the Remedy Selection Sections(350 – 390), the procedures for identifying and evaluating cleanup actions are too iterative suggesting too many submittals or records. What happened to the expedited and streamlined process for completing site cleanups?

1296 The Disproportionate Cost Test information is buried in the final evaluation stages. This important tool should be used earlier such as during the identification and scoping of plausible remedial actions.

1297 To obtain a Conditional Point of Compliance for groundwater (Section 720)requires following the entire RI/FS process and a demonstrating that '*all*' practicable treatment methods are used. These requirements may entail unnecessary delays for sites where a conditional POC is an obvious outcome.

1298 In the Ecological Evaluation Procedures (Section 7490),Table (749-3) presents ecological indicator concentrations that may erroneously become cleanup levels. Some values (e.g., lead to protect plants (50 ppm) and wildlife (118 ppm) are substantially below values accepted for human health, and may be misused. These values should appear in guidance since the scientific basis for their use and inclusion may not withstand the rigors of new scientific information criteria required in MTCA (Section 702(15)).

1299 **Guidance Should Accompany Final Rule Promulgation**

We hope that Ecology will encourage open and collaborative clean-up decisions at all sites. Ecology should provide information about how cleanups can be completed successfully utilizing new ideas. We recommend that Ecology prepare guidance with clear and unambiguous examples for the amendments, especially for developing Site Specific Cleanup Levels, implementing Petroleum Cleanups, pursuing Model Remedies, implementing Ecological Risk Evaluation Procedures, developing soil cleanup levels to protect groundwater, and during use of natural attenuation and dilution/dispersion . These guidance documents ideally should be available at the same time these amendments go into effect.

In addition to guidance, Ecology should make available any tools, spreadsheets, and updated information such as to the CLARC database to the public through its website and through Technical Information Memos.

ALCOA looks forward to the final adoption of the MTCA Cleanup rules. We hope the proposed schedule will be met as these amendments have been delayed for too long making it difficult for the regulated community to predict and prepare for any changes to site cleanups. Thank you for this opportunity to provide our comments. We hope that the implementation of the new rule amendments will result in better cleanup decisions and outcomes for all.

Sincerely yours,

A. B. Piecka
Northwest Environmental Manager

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
P.O. Box 47600 • Olympia, Washington 98504-7600
(360) 407-6000 • TDD Only (Hearing Impaired) (360) 407-6006

Formal Public Hearing Record
Hearing Transcript

Date:	**December 9, 1999**
Contact Person:	**Dawn Hooper**
Subject:	**MTCA Rule (173-340 WAC); Public Participation Grants (Chapter 173-321 WAC); Remedial Action Grants and Loans (Chapter 173-322 WAC) and the draft MTCA Environment Impact Statement.**
Facility Name and Address:	**Washington State University Satellite Room SS129 14204 Salmon Creek Avenue Vancouver, WA**
Ecology Staff:	**Curtis Dahlgren, Steve Robb, Dawn Hooper**
Public Present:	**Two**
Testimony Present:	**None**

On behalf of the Department of Ecology, Welcome, and thank you for coming to today's public hearing on the proposed rule changes and on the draft environmental impact statement. My name's Dawn Hooper and I'll be the hearing officer for the meeting

Tonight we're here to discuss the proposed rule revisions and the draft Environmental Impact Statement.

Let the record show it's 6:15 p.m. on December 9 and this hearing is being held in Vancouver, Washington on the WSU extension campus.

Legal notices of this hearing were published in the Washington State Register on November 17, 1999. Paid notices were published on or before Wednesday, December 8th 1999 in the Seattle Times/PI, Spokesman Review, and the Yakima Herald and in the Vancouver Columbian newspapers.

In addition, notices of the hearing were mailed to about 800 interested people. You may have received that notice.

As tonight's hearing officer

I have two main responsibilities:

- To make sure everyone who wants to comment, is allowed to.
- And, to make sure that the Department obtains a clear record of the hearing.

Are you (Sharon Martineau) interested in providing formal testimony?

No (responded Sharon Martineau)

In that case, we'll go ahead and adjourn the formal hearing. We'll stay to talk about the rule for as long as you wish.

Curtis – Do we have to do the rest of the formal hearing, can't we just close?

Dawn – No, we have to complete a short version of the formal hearing. Let's just walk through it quickly.

All testimony received at this hearing as well as at other the hearings to held in Vancouver, Seattle, Spokane and Yakima, along with all written comments received by January 17, 2000 will be part of the official hearing record for this proposal.

The next step for the rule is adoption.

The agency director or his or her designee will look at public comment, the responsiveness summary and staff recommendations and will make a decision about adopting the proposal.

Adoption is currently scheduled for May, 2000. If the proposed rule should be adopted that day and filed with the Code Reviser, it will go into effect 31 days later.

Let the record show that this hearing is adjourned at 6:25 p.m. on December 9, 1999.

BEFORE THE DEPARTMENT OF ECOLOGY

IN RE: MODEL TOXICS CONTROL)
ACT PROPOSED)
RULE REVISION)
)

VERBATIM REPORT OF MTCA PUBLIC HEARING

FOR THE PURPOSES OF PROPOSED RULE REVISIONS

DAWN HOOPER, HEARINGS OFFICER

DECEMBER 14, 1999

SEATTLE, WASHINGTON

Reported by:

SHAUN LINSE, CCR

CCR NO. LI-NS-ES-M4020H

COPY

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PUBLIC SPEAKERS	PAGE
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CHARLIE BROWN	10
JOSEPH ROCKNE	13
HYON LEE	14

EXHIBITS

NO.	PAGE	DESCRIPTION
1	6	Four-Page Document illustrating the slides that were shown while explaining the proposed rule revisions.

BE IT REMEMBERED that a Public Hearing was held on December 14, 1999, at the hour of 1:40 p.m. at 3190 160th Avenue S.E., Seattle, Washington, before Shaun Linse, CCR, Notary Public in and for the State of Washington, residing at Kent, Washington;

Whereupon, the following proceedings were had, to wit:

* * * * *

HEARINGS OFFICER: Let the record show that it's 1:40 p.m. on December 14th, and this hearing is being held in Seattle in the Mountaineers Building. Legal notices of this hearing were published in the Washington State Register on November 17, 1999 and paid notices were also published on or about Wednesday, December 8, in the Seattle Times, P.I, Spokesman Review, Yakima Herald, and also at the earlier date down in the Columbia paper in Vancouver. In addition, notices of the hearing were mailed to more than 800 interested people, and many of you have received that notice.

So as the hearings officer for this meeting I have two main responsibilities. One is to make sure that everybody who wants to comment is given an opportunity to and to make sure that the Department obtains a clear record of the hearing, and that's why we'll be recording this meeting.

So to do this I need your cooperation. I have a few ground rules designed to support comment courtesy and just maintain the structure of the meeting.

First is about speaking in order. During the formal public testimony portion of the hearing, I will call you by name in the order in which you gave me your registration card, and then I will open up the floor to anybody else who's decided they would like to comment.

And the commenters I'll have the recorder set up on this table, and I'll ask you to please step up to the microphone and give your name and your address for the record, and the person at the microphone will have the floor; one person speaking at a time.

Secondly, in order to make sure that everybody does have a chance to comment we will monitor the length of the comments. I want to make sure that you and everybody else here who would like to comment has an opportunity to. So if you could limit your comments to three to five minutes, and then after we finish the first full round of comments, if you have additional comments that you wanted to make, we'll just stay here as long as we need to in order to get all of your comments but make sure we get a first quick round, so people who need to can go ahead and leave.

I will ask that you summarize lengthy

comments or repetitive comments and make sure that you note whether your comment pertains to rules or the Draft EIS or you can also just send written comments to us, and towards the end of the meeting we will have that address posted on the overhead as well. And whether the comments are written or given to us verbally today, they receive the same consideration.

Then during the 20- to 25-minute question and answer period, that will be right after Curtis Dahlgren's presentation, that will be the time of the meeting when you can also ask questions for clarification or have an opportunity for us to respond back to you. So that will be an informal part of the meeting. After the public comment period is concluded, Ecology staff will prepare a responsiveness summary which identifies your questions and comments, and you'll all get a copy of the written responsiveness summary.

And then also I'll ask that while people are up giving their testimony that the audience be quiet so that we can be sure to get it both recorded and the court reporter copy of the meeting. And if the court reporter needs to during that time, she will also if she doesn't catch everything that is said, she will also ask you to stop and repeat anything she didn't hear.

So does that sound okay to everybody?

Okay. Great.

Okay. I think we're ready to get going here. I'd like to first introduce the Ecology staff. First, Curtis Dahlgren. He's our main presenter today, and he's the unit supervisor for the group that wrote the rules and Pete Kmet in the back. He's also key staff and Steve Robb. And they will be here to answer questions and then during the break available for you to talk with them as well.

So I'll have Curtis come up.

(Presentation given and brief question and answer period held.)

(Exhibit No. 1 marked for identification.)

HEARINGS OFFICER: Ready to get going. If I could have everybody please take a seat. Is there anybody else who wanted to give me a registration card?

We will start out with Bill Bellman and follow with Charlie Brown. I will ask that you come forward, state your name, your address, and who you're representing.

MR. BELLMAN: My name is Bill Bellman, and I am with the Washington Oil Marketers Association. My address is PMB 245, 3377 Bethel Road S.E., Suite 107, Port Orchard, Washington.

I'd like to thank you for the opportunity to

1195

speak to you today. I am here today to address the MTCA rule changes being made to the Method A cleanup levels for petroleum hydrocarbons, especially the changes in Benzene levels and gasoline TPH.

We know Ecology has worked long and hard on revising the rule. We commend your efforts but question the results.

Our members have sent their responses to the preliminary draft rule and also commented on the Environmental Impact Statement.

As a result of those comments changes were made to the preliminary draft rule cleanup levels.

1195 cont.

The Department of Ecology had reduced the Benzene Levels allowable to .02 in the preliminary draft rule Method A cleanup level. After comments were received from all segments of the industry, including environmental cleanup companies and the State Pollution Liability Insurance Agency indicating there was no substantial evidence requiring this drastic change in allowable Benzene levels, the Department returned the Benzene levels to .5 on July 6, 1999. On July 15, we were advised the level had been reduced to .1 on the recommendation of the Science Advisory Board. WOMA does not believe that there was credible evidence for this reduction to .1, just as the evidence justifying a drop to .02 in the preliminary

draft rule was lacking.

There appears to be no consistency in this rule making process, and the decision being made by the Department as it relates to petroleum hydrocarbon cleanup levels it appears to be at best arbitrary.

I am not a technical person, so I can only speak to this issue from the process I have seen take place. The following were worth noting:

1. The preliminary draft rule reduced the benzene levels to .02.

2. On July 6, the benzene level was returned to .5, the current standard.

3. On July 15, the benzene level was changed again. This time to .1.

The Department continues to ignore the findings of the 1995 Livermore report done in the State of California for the California State Water Resources Board. This report has been pushed aside and downplayed in this rule making process because you have indicated it is not applicable in the State of Washington. At the same time you are ignoring this report out of California, the Clean Air Section of your department, along with the local air authorities adopt the executive orders of the California Air Resources Board without questioning their validity. This double standard that the Department appears to be

condoning is puzzling to us. In one instance California's Scientific findings are adequate, while in the other instance California's scientific findings are not even worth review. At best, this form of rule making is arbitrary and capricious.

1199 We certainly understand the need to protect the ground water in the State of Washington. However, from the information we have seen, it seems the ground water is being adequately protected for current Method A petroleum cleanup levels. I will leave the comments on ground water contamination by petroleum hydrocarbons to the technical people, but we have been told it is small and does not justify the change you are recommending.

1200 The economic impact on small business is substantial. If these changes take effect, site cleanup is a costly process, and there will be additional costs in insurance and in meeting requirements for lending institutions.

1201 It was our understanding that the policy advisory committee was established to look at ways to make the rules adaptable to actual land use, to ensure the cleanup standards were not overly restrictive.

The Washington Oil Marketers ask you to reevaluate the need to change the Method A soil cleanup levels for benzene and gasoline and leave them as they are

1201 cont.

in the current rule.

Thank you for your time.

HEARINGS OFFICER: Charlie Brown, please.

State your name and your address and who you are representing.

MR. BROWN: Thank you. Good afternoon, I'm Charlie Brown, and I'm representing also the Washington Oil Marketers Association, and I was also a member of the External Advisory Work Group for this particular rule making as it was developed earlier on these last couple of years.

1202

On behalf of the Oil Marketers I too want to reiterate that I urge DOE, the Department of Ecology, to withdraw this rule due to the disproportionate impact the proposed petroleum cleanup standard will have on the majority of small business persons who own businesses that are subject to this rule.

1203

Specifically, I argue that there is no empirical data that was made available suggesting that the current standard under Method A is not protective of human health in the environment. As proposed the soil cleanup standards are based on a model and not the actual site tests of data.

1204

Moreover, that model has not been subject to review by nonagency related entities. While I understand

1204 cont.

it has been reviewed by the Scientific Advisory Board, it has not been made available for review by other entities and given the kind of acceptance by those others, and we would suggest that the model itself be put to more review than just the Science Advisory Board.

1205

We also think and know that the rule imposes a disproportionate cost on small businesses with no apparent mitigation that was stated in the Small Business Economic Impact Statement that was submitted along with this rule. The cost in the Small Business Economic Impact suggests the cost for the gasoline station owners should increase by at least 20 percent. Industry estimates are higher than the Small Business Economic Impact Statement would suggest.

1206

For example, we recently received a call from insurance companies that suggested that even without any kind of petroleum contamination those who own underground storage tanks are going to suffer increased costs because the insurance companies who cover those underground storage tanks as required by law have indicated that the premium costs will rise as a result simply by the adoption of this proposed rule.

1207

The Small Business Economic Impact Statement also discloses that the cleanup actions under Method B are more expensive and more complex. While the Small Business

207 Economic Impact Statement suggests that gasoline stations might be able to use the Method B cleanup standards or cleanup methods, I would suggest that the costs associated with that more complex Method B method is going to be financially infeasible for many small businesses; thus, leaving them only to be able to cleanup to standards under the Method A.

208 While we acknowledge that the draft rule contains a grandfather clause for the cleanup actions taken prior to the adoption of the rule, this clause is insufficient for small business owners. This is true because these owners will still have problems with property transactions where the property is not cleaned to the standards in effect at the time of the transaction. You heard some of those comments today in the question and answer period in this particular public hearing.

209 Again, I request that Ecology withdraw the petroleum cleanup standards for soil and maintain the current standards in the current rule. We will then be happy to work along with Ecology and other interested groups to look at the actual site data to accurately determine the true risk posed to human health and the environment from petroleum contamination, not one that is simply based on the model.

I reserve the right here to supplement our

comments with written testimony that will be sent to you prior to the closing date and thank you for your time.

HEARINGS OFFICER: Thank you very much.

Next is Joseph Rockne. I am not sure I have your name right.

MR. ROCKNE: Thank you. My name is Joseph Rockne. I'm the operations manager and general counsel for Davis Industries. We're a petroleum marketer and distributor based in Lynnwood, Washington.

Our address is 6425 212th Street S.W., Lynnwood, Washington 98036. I want to concur both with what Mr. Bellman spoke about and what Mr. Brown spoke about, and I would like to add a couple of comments.

1210

First, I would like to ask if there's been any evidence that the current standards are not protective of any human health and the environment? Specifically, if you found any evidence of individuals who have been harmed because of polluted sites?

1211

My second comment is regarding the Livermore report that has been routinely ignored by the Department of Ecology in the promulgation of their new Method A cleanup levels. We heard today that you are willing to wait, the Department of Ecology is willing wait for Massachusetts, information from the Massachusetts Department of Ecology on their soil and vapor cleanup

levels instead of developing your own cleanup levels, and yet you have ignored the Livermore report.

I would like to make a comment that I find that this decision to ignore the Livermore report is both arbitrary and capricious, and I would urge you to revisit that report before finalizing the rules. Thank you. Thank you very much.

HEARINGS OFFICER: Thank you very much.

And then finally Mr. Lee.

MR. LEE: My name is Hyon Lee from Heart of America Northwest, 1305 4th Avenue, Suite 208, Seattle, Washington 98101.

Heart of America is the leading Hanford citizens' watchdog group with 16,000 members in the Pacific Northwest. Many of our members live near sites impacted by hazardous waste releases affected by MTCA and are especially concerned with Hanford cleanup. Gerald Pollet, our executive director of Heart of America, represented the Heart of America and was one of several environmental organizations' representatives on the MTCA Policy Advisory Committee and MTCA External Advisory group.

I am here representing the public today. Heart of America is concerned that it not take any longer to get these proposed amendments to MTCA adopted. The

MTCA Policy Advisory Committee worked for two years and issued its report three years ago. The process was reviewed as successful. The rule changes proposals were agreed to by all interest groups often down to the detailed rule language on the key issues. The compromises were delicate. We support the adoption with one minor exception regarding the change that was not recommended by the MTCA Policy Advisory Committee. It's in 321.060..

HEARINGS OFFICER: Could you read that again.

MR. LEE: 321.060. I will try to get you a typed up copy of this later.

One of the key compromises was that of Site Specific Risk Assessment. The proposal recognizes the extreme burden on the public if potentially liable parties can vary their assumptions in a risk assessment, that could lead to magnitudes more contamination remaining in soil and possible far more risk.

Because of delay on this issue the public has indeed suffered because USDOE, Department of Energy, uses its own site specific risk assessment for the contaminated areas along the Columbia River. USDOE and Ecology staff say the protection and public participation requirements of this proposed rule change are just proposals and not required to be followed. Yet, MTCA does

not currently allow Hanford to substitute its own assumptions about public exposure. We need to have speedy adoption on this.

Two steps forward in this proposed rule are:

First, clearly stating that the cleanup level and risk assessment for a site shall be protective of health based upon reasonable maximum exposure scenarios, which include exposures when institutional controls fail.

Second, clear public input steps for determining what are the reasonable maximum exposure scenarios for potentially affected persons or groups over periods of time and then returning to the public to ensure understanding of how those exposure scenarios and risk assessment assumptions were used to allow public comment on those results.

There is an urgent need for creation of the Citizen Technical Advisor as proposed to increase stakeholder understanding of risk assessments and how key assumptions may affect public health or the environment. The primary goal of this position must clearly be defined as assisting the public. Language in a Small Business Economic Impact Statement implying that the primary role of this position was to advise business must be corrected to reflect the above.

A new issue arising from the Department of Health's proposed rule is a need to clearly state a rule that MTCA and its Washington Administrative Code chapter apply to all releases or threatened releases of hazardous substances, including radionuclides and radiation within the definition of carcinogens.

There is a need to specify that even if a carcinogen or radioactive release site is closed under another permit, these rules and cleanup requirements still apply if risk from residual contamination exceeds cleanup levels in MTCA. We urge other agencies and affected businesses that they are not exempt from MTCA.

On the PPG, Public Participation Grant, Ecology has no legitimate or legally defensible purpose in its proposed amendments to WAC 173-321-060 for public participation grants which would require grant applicants who receive a grant award to notify Ecology if legal action is being taken on the subject. Ecology rules prevent grant funds for litigation regarding the site which is the subject of the grant. Ecology reviews all costs prior to reimbursement. The only rationale for requiring notice of intended legal actions with a citizen group's own funds is to chill citizens' groups exercise of their rights. This provision was not agreed upon as a recommendation from the MTCA Policy Advisory Committee.

It is unclear in the rule what a legal action is under the new proposed rule. It could vary from appearing to testify at a public hearing such as this or filing an enforcement petition.

The rule for public participation grants is missing any reference to Ecology's commitment that Hazardous Substance Release Grants have a priority, and that Ecology shall award grants to meet projected eligible costs for all qualified applicants up to the award limit in WAC 173-321-010. The rule language needs to reflect that at least 50 percent of the available grant funds will be available for hazardous substance release grants to reflect the priority for such grants. If there are qualified applicants with eligible costs totalling 50 percent of the available grant funds, Ecology shall provide funding for eligible appropriate costs of qualified applicants for hazardous substance release grants whether such costs will exceed 50 percent of the available funding. Thanks.

HEARINGS OFFICER: Thank you. If we could have a copy of your notes that would be great.

Is there anyone else who would like to provide public testimony today?

Okay. Then all testimony received at this hearing, as well as the other hearing that Ecology is

conducting, along with all other written comments that are received by January 18, 2000 will be part of the official hearing for this record.

I would like to note that while the public comment period officially ends January 17th, that's a holiday and the post office is closed, so January 18th is just fine.

The next step for the rule is for Ecology to prepare a responsiveness summary. After that point processes will be followed, so that eventually the agency director or his designee will look at the public comments, the responsiveness summary, and staff recommendations and will make a decision about adopting the proposal.

Currently adoption is scheduled for June 17, 2000. If the proposed rule should be adopted that day and filed with the code reviser, it would go into effect 31 days later.

If we can be of further assistance to you, please don't hesitate to ask, and on behalf of the Department of Ecology, thanks for coming today. We appreciate your cooperation and participation in this process.

And let the record show that this hearing is adjourned at 3:05 p.m. on December 14, 1999.

Thanks very much for coming.

* * * * *

(Whereupon, the hearing was concluded at 3:05 p.m.)

A F F I D A V I T

I, Shaun Linse, CCR, Certified Court Reporter, do hereby certify that the foregoing transcript prepared under my direction is a true and accurate record of the proceedings taken on December 14, 1999 in Seattle, Washington.

COPY

Shaun Linse, CCR

CCR NO. LI-NS-ES-M4020H

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PENGAD-Bayonne,N.J
EXHIBIT
12/14/99
Public Hearin

Model Toxics Control Act
Proposed Rule Revision

MTCA Public Hearings

PROPOSED RULE REVISIONS

December 1999

1

Model Toxics Control Act
Proposed Rule Revision

Agenda

Welcome/Introductions

Purpose and Format

Overview – Proposed Amendments

Questions/Answer Period

Break

Formal Public Testimony

2

Model Toxics Control Act
Proposed Rule Revision

Ecology is proposing to adopt amendments:

- Model Toxics Control Act (MTCA) cleanup rule (Chapter 173-340 WAC)
- Public Participation Grant rule (Chapter 173-321 WAC)
- Remedial Action Grant rule (Chapter 173-322 WAC)
- And has issued a Draft Environmental Impact Statement.

3

Model Toxics Control Act
Proposed Rule Revision

SOURCES OF RULE CHANGES

- MTCA Policy Advisory Committee
- Duwamish Coalition Project Oversight Group
- Science Advisory Board
- External Advisory Workgroup
- Administrative Procedures Act
- Ecology

4

Model Toxics Control Act

<u>General Provisions</u>

- Adds Site Reporting Examples
- Adds Criteria for Removing Sites From the Hazardous Sites List That Use Containment

5

Model Toxics Control Act

<u>General Provisions</u>

- Clarifies Requirements for Institutional Controls and Financial Assurance
- New Section Consolidating Independent Remedial Action Requirements
- Updates Statistical Procedures

6

Model Toxics Control Act

Public Involvement Provisions

- Content of a Public Notice When a Site-Specific Risk Assessment is Used
- Notification to Local Governments and Affected Property Owners
- Establishes a Citizen Technical Advisor Position

7

Model Toxics Control Act

Public Participation Grant Rule

Proposed revisions to the Public Participation Grants rule, WAC 173-321 include:

- Increases the grant amount to sixty thousand dollars
- Allows for emergency grants

8

Model Toxics Control Act

Remedial Action Grant Rule

- Allows grants to local governments at sites where they are not a PLP
- Adds a grant category for area-wide groundwater contamination
- Removes the local government funding cap for minimum landfill closure requirements

9

Model Toxics Control Act

Human Health Risk Assessments in Cleanup Decisions

- Establishes a framework for changing assumptions in human health risk assessments
- Must use "reasonable maximum exposure"

10

Model Toxics Control Act

Human Health Risk Assessments in Cleanup Decisions

- Criteria for Evaluating New Scientific Information
- Effect of New Standards on Past Cleanup Actions
- Provides for the Use of Toxicity Equivalency Factors for Dioxins, Furans and PAHs

11

Model Toxics Control Act

Ground Water [Section 720]

- Three types of Ground Water More Explicitly Recognized
  - Drinking Water Aquifers
  - Ground Water Flowing into Surface Water
  - Non-potable Ground Water

12

Model Toxics Control Act

Ground Water [Section 720]

- Point of Compliance Changes:
  - Use of surface water monitoring when property not adjacent to surface water
  - Use of area-wide point of compliance
  - Allows use of upland monitoring wells for ground water discharging to surface water

13

Model Toxics Control Act

Soil Cleanup Levels (Section 740-745)

- Ingestion
- Skin Contact
- Inhalation of Vapor
- Leaching to Ground Water
- Land Use

14

Model Toxics Control Act

Petroleum Cleanups

- Adds Site-specific Options
- Updates Method A Tables
- Adds a Total Petroleum Hydrocarbon Testing Table

15

Model Toxics Control Act

Terrestrial Ecological Evaluation Procedures

[Sections 7490 - 7494]

1. Criteria for Exclusions
2. Simplified Evaluation
3. Site-specific Evaluation

16

Model Toxics Control Act

Remedy Selection (Sections 350-390)

- Incorporates Remediation Levels
- Adds Commercial Gas Station Soil Exposure Scenario
- Clarifies The Cost Evaluation Procedure

17

Model Toxics Control Act

Remedy Selection (Sections 350-390)

- Natural Attenuation
- Dilution/Dispersion
- Model Remedies

18

Model Toxics Control Act
Draft EIS

ALTERNATIVES

The alternatives considered in this DEIS are:

- No Action Alternative
- Proposed Action
- Policy and Guidance Action Alternative

19

Model Toxics Control Act
Draft EIS

Four Areas Evaluated in Detail:

- Use of Site-Specific Risk Assessments (including non-petroleum Method A table changes).
- A Strategy for Dealing with Petroleum Contamination (including petroleum related Method A table changes).
- Evaluating Terrestrial Ecological Risks.
- Enhancing the Remedy Selection Process.

20

Model Toxics Control Act
Draft EIS

IMPACTS

Elements of the Environment evaluated: Soil, ground water, surface water, air, human health, plants and animals, and land and water use.

The analysis of impacts concluded that there were no probable significant adverse environmental impacts that were not mitigated as part of the proposed action.

21

Model Toxics Control Act

22

BEFORE THE DEPARTMENT OF ECOLOGY

STATE OF WASHINGTON

In the matter of:)

Model Toxics Control Act)

Proposed Rule Revision)

and Draft EIS)

----------)

COPY

Hearing for the Proposed Rule Revisions

Before the General Public

December 14, 1999

Reported by:

Tami Lynn Vondran

CCR No. VONDRTL251PF

APPEARANCES:

For the Department of Ecology:

Dawn Hooper, Hearing's Officer
Curtis Dahlgren
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I N D E X

NAME	PAGE NO.
Erin C. Jezlorski	7

BE IT REMEMBERED that the hearing for the Proposed Rule Revisions was taken on DECEMBER 14, 1999, at the hour of 6:15 p.m., at SEATTLE, WASHINGTON, before Tami Lynn Vondran, CCR, Notary Public in and for the State of Washington, residing at Auburn, Washington;

Whereupon, the following proceedings were had, to-wit:

* * * * *

DAWN HOOPER: Good evening. Thank you for coming and setting up the room for us. On behalf of Ecology I would like to welcome you tonight. Thank you for coming for today's hearing on the proposed rule changes and on the draft EIS.

My name's Dawn Hooper and I will be the hearing's officer for the meeting. We're here today to discuss the proposed rule revisions and also the draft environmental impact statement. Today's meeting will have three main parts.

First of all, Ecology staff will give a brief presentation/overview, quickly explain their rule proposals and the draft environmental impact statement. Secondly, we'll open up the floor for a brief question and answer period, take a short break during which time if anyone would like to make public testimony you can fill out the registration card and bring that up to me or have

time to ask questions individually of any of the Ecology staff here. After that we'll formally open up the public testimony portion of the meeting if anyone is interested in providing formal public testimony at that time.

So I would like for the record to show that it is 6:20 on December 14, 1999. And this hearing is being held in Seattle at the Denny Park Building.

Legal notices of this hearing were published in the Washington State Register on November 17, 1999, and paid notices were also published on or about Wednesday, December 8, 1999 in the Seattle Times, P.I.; the Spokesman Review, the Yakima Herald and also the Columbia paper down in Vancouver. In addition notices of the hearing were mailed to about 800 interested people. Many of you probably received that notice already.

So tonight I have two main responsibilities: First of all, one, is to make sure that everybody who wants to provide formal comment has an opportunity to do so. And then second, to make sure that the Department can obtain a clear record of that recording for the hearing and that's why we'll be recording it and also have the court reporter here tonight. So to do this I'll need your cooperation, the usual grounds rules.

First of all, for speaking order, if anyone is interested in giving public testimony I'll call your

name in the order I receive the cards and whoever is providing public testimony has the floor. It's not a discussion period but simply an opportunity for formal public testimony.

Second, length of comments. I don't think we'll worry about that here, we don't have enough people, so however long someone wants to talk we'll just give them the floor for that. Some lengthy comments can be summarized. And in addition to an opportunity to provide spoken comment tonight, you can also send in written comments to the Department by January 18th and either spoken comment or written comment is treated equally.

We'll have the short question and answer period after the presentation, but when we begin the formal public testimony portion of the meeting, if anybody does present tonight, during that part of the meeting it's an opportunity to present but Ecology will not respond at that time.

So the agenda, I think we've covered that all and I think we can go ahead and get started.

Let me introduce the Ecology staff. First of all, Curtis Dahlgren is the unit supervisor and will be giving the presentation tonight. Steve Robb, cleanup standards and petroleum guy. Pete Kmet, risk assessment. Charles San Juan is our ground water expert here tonight.

So I guess that's it. Curtis -- I'm sorry, Norm, you're Ecology too. And Norm's here representing ecostandards, so he's our expert on that tonight. Okay, Curtis.

(Overview of the proposed amendments presented by Curtis Dahlgren, see Attachment A.)

(Informal question and answer time.)

DAWN HOOPER: We have one person who's interested in providing testimony, so why don't you come up. Please state your name and address and who you're representing and then go ahead and give testimony. And I would ask the audience to please not speak while the testimony is being provided so we can be sure to have a good copy of it. Thank you.

ERIN JEZLORSKI: I'm Erin Jezlorski with Heart of America Northwest. We are located at 1305 Fourth Avenue in the Cobb Building, Suite 208, downtown Seattle, Washington. I'm here representing Gerald Pollet from Heart of America Northwest as well, he's the executive director.

Heart of America Northwest is the leading Hanford citizens' watchdog group with at least 16,000 members in the Pacific Northwest. Many of our members live near sites impacted by hazardous waste releases affected by the Model Toxics Control Act and are especially concerned with Hanford cleanup. Gerald Pollet,

executive director of Heart of America Northwest represented Heart of America and was one of several environmental organization's representatives on the MTCA policy advisory committee and MTCA external advisory group.

First comment. Heart of America Northwest, representing the public, is concerned that it not take any longer to get these proposed amendments adopted. The MTCA policy advisory committee worked for two years and issued its report three years ago. The process was reviewed as very successful. The rule changes proposal were agreed to by all interested groups, often down to the detailed rule language on the key issues. The compromises were delicate. We support the adoption with one minor exception regarding a change that was not recommended by the MTCA policy advisory committee, and this was change 321.060.

One of the key compromises was that of site specific risk assessment. The proposal recognizes the extreme burden on the public if potentially liable parties can vary their assumptions in a risk assessment, leading to magnitudes more contamination remaining in soil, and possible far more risk.

Because of delay, the public has indeed suffered because the U.S. Department of Energy used its

1215 cont.

own site specific risk assessment for the contaminated areas along the Columbia River. USDOE and Ecology staff say the protection and public participation requirements of this proposed rule change are just proposals and not required to be followed. Yet, MTCA does not currently allow Hanford to substitute its own assumptions about public exposure. We need to have speedy adoption.

1216

Two sets forward in this proposed rule are: One, clearly state that the cleanup level and risk assessment for a site shall be protective of health based upon reasonable maximum exposure scenarios, which include exposure when institutional controls fail.

1217

A second step forward is the clear public input steps for determining what are the reasonable maximum exposure scenarios for potentially affected persons or groups over periods of time, and returning to the public to ensure understanding of how those exposure scenarios and risk assessment assumptions were used, to allow public comment on those results.

1218

Third point. There is an urgent need for creation of the citizen technical advisor as proposed to increase stakeholder understanding of risk assessments and how key assumptions may affect public health or the environment. The primary goal of this position must clearly be defined as assisting the public. Language in

the Small Business Economic Impact Statement implying that the primary role of this position was to advise business must be corrected to reflect the above.

19 A new issue arising from the Department of Health's proposed rule is a need to clearly state a rule that MTCA and its WAC chapter apply to all releases or threatened releases of hazardous substances, including radionuclides and radiation within the definition of carcinogens.

There is a need to specify that even if a carcinogen or radioactive release site is "closed" under another permit, these rules and cleanup requirements still apply to if risk from residual contamination exceeds cleanup levels in MTCA. We urge other agencies and affected businesses that they are not exempt from the Model Toxic Control Act.

20 In regards to the public participation grant, ecology has no legitimate or legally defensible purpose in its proposed amendment to WAC 173.321.060 for public participation grants which would require grant applicants who receive a grant award to notify Ecology if legal action is being taken on the subject. Ecology rules prevent grant funds for litigation regarding the site which is the subject of the grant. Ecology reviews all costs prior to reimbursement. The only rationale for

requiring notice of "intended" legal actions with a citizens' groups own funds is to chill citizens' groups exercise of their rights. This provision was not agreed upon as a recommendation from the MTCA. It is unclear what a "legal action" is under the proposed rule. Is it appearing to testify at a public hearing or filing an enforcement petition?

1221

Last but not least, the rule for public participation grants is missing any reference to Ecology's commitment that hazardous substances release grants have a priority, and that Ecology shall award grants to meet projected eligible costs for all qualified applicants up to the award limit in WAC 173.321.010. The rule language needs to reflect that at least 50 percent of available grant funds will be available for hazardous substance release grants to reflect the priority for such grants. If there are qualified applicants with eligible costs totalling 50 percent of available grant funds, Ecology shall provide funding for eligible appropriate costs of qualified applicants for hazardous substances release grants whether such costs will exceed 50 percent of the available funding. This must be formally adopted into the text of the WAC so that it will be preserved in Ecology's institutional memory and survive through the passage of various administrations. Thank you.

DAWN HOOPER: Thank you. Okay. If there's no other testimony tonight then we'll go ahead and adjourn the meeting at this time. Ecology folks are willing to stick around and talk with anybody who would like to talk about other aspects of the rule.

Next step for the rule is adoption. After review is completed Ecology will complete a responsiveness summary at the completion of this public comment period. It closes on January 17, 2000. It's fine if we receive comments on January 18th. January 17th is a holiday and the post office is closed, so the 18th is fine.

And so after the comment period is closed and Ecology has had a chance to prepare a responsiveness summary and make decisions about what it would like to propose to the Department, the agency director or his designee will look at the public comments, the responsiveness summary and staff recommendations and will make a decision about adopting the proposal.

Adoption is currently scheduled for June 17, 2000. If the proposed rule should be adopted that day and filed with the code revisor it will go into effect 31 days later.

If we can be of further help to you, please don't hesitate to give us a call. And on behalf of the Department of Ecology I would like to thank you all for

coming tonight and participating in this process.

So let the record show that this meeting is adjourned at ten minutes to 7:00 in the evening on December 14, 1999. Thank you very much.

* * * * *

(Hearing adjourned at 6:50 p.m.)

A F F I D A V I T

I, Tami Lynn Vondran, CCR, do hereby certify that the foregoing transcript prepared under my direction is a full and complete transcript of the proceedings held on December 14, 1999, at the hour of 6:15 p.m., at Seattle, Washington.

COPY

Tami Lynn Vondran, CCR
CCR# VONDRTL251PF

Model Toxics Control Act
Proposed Rule Revision

MTCA Public Hearings

PROPOSED RULE REVISIONS

December 1999

1

Model Toxics Control Act
Proposed Rule Revision

Agenda

Welcome/Introductions

Purpose and Format

Overview – Proposed Amendments

Questions/Answer Period

Break

Formal Public Testimony

2

Model Toxics Control Act
Proposed Rule Revision

Ecology is proposing to adopt amendments:

- Model Toxics Control Act (MTCA) cleanup rule (Chapter 173-340 WAC)
- Public Participation Grant rule (Chapter 173-321 WAC)
- Remedial Action Grant rule (Chapter 173-322 WAC)
- And has issued a Draft Environmental Impact Statement

3

Model Toxics Control Act
Proposed Rule Revision

SOURCES OF RULE CHANGES

- MTCA Policy Advisory Committee
- Duwamish Coalition Project Oversight Group
- Science Advisory Board
- External Advisory Workgroup
- Administrative Procedures Act
- Ecology

4

Model Toxics Control Act

General Provisions

- Adds Site Reporting Examples
- Adds Criteria for Removing Sites From the Hazardous Sites List That Use Containment

5

Model Toxics Control Act

General Provisions

- Clarifies Requirements for Institutional Controls and Financial Assurance
- New Section Consolidating Independent Remedial Action Requirements
- Updates Statistical Procedures

6

Attachment A

Model Toxics Control Act

Public Involvement Provisions

- Content of a Public Notice When a Site-Specific Risk Assessment is Used
- Notification to Local Governments and Affected Property Owners
- Establishes a Citizen Technical Advisor Position

7

Model Toxics Control Act

Public Participation Grant Rule

Proposed revisions to the Public Participation Grants rule, WAC 173-321 include:

- Increases the grant amount to sixty thousand dollars
- Allows for emergency grants

8

Model Toxics Control Act

Remedial Action Grant Rule

- Allows grants to local governments at sites where they are not a PLP
- Adds a grant category for area-wide groundwater contamination
- Removes the local government funding cap for minimum landfill closure requirements

9

Model Toxics Control Act

Human Health Risk Assessments in Cleanup Decisions

- Establishes a framework for changing assumptions in human health risk assessments
- Must use "reasonable maximum exposure"

10

Model Toxics Control Act

Human Health Risk Assessments in Cleanup Decisions

- Criteria for Evaluating New Scientific Information
- Effect of New Standards on Past Cleanup Actions
- Provides for the Use of Toxicity Equivalency Factors for Dioxins, Furans and PAHs

11

Model Toxics Control Act

Ground Water (Section 720)

- Three types of Ground Water More Explicitly Recognized
  - Drinking Water Aquifers
  - Ground Water Flowing into Surface Water
  - Non-potable Ground Water

12

Model Toxics Control Act

Ground Water [Section 720]

- Point of Compliance Changes:
  - Use of surface water monitoring when property not adjacent to surface water
  - Use of area-wide point of compliance
  - Allows use of upland monitoring wells for ground water discharging to surface water

Model Toxics Control Act

Soil Cleanup Levels (Section 740-745)

- Ingestion
- Skin Contact
- Inhalation of Vapor
- Leaching to Ground Water
- Land Use

Model Toxics Control Act

Petroleum Cleanups

- Adds Site-specific Options
- Updates Method A Tables
- Adds a Total Petroleum Hydrocarbon Testing Table

Model Toxics Control Act

Terrestrial Ecological Evaluation Procedures

[Sections 7490 - 7494]

1. Criteria for Exclusions
2. Simplified Evaluation
3. Site-specific Evaluation

Model Toxics Control Act

Remedy Selection (Sections 350-390)

- Incorporates Remediation Levels
- Adds Commercial Gas Station Soil Exposure Scenario
- Clarifies The Cost Evaluation Procedure

Model Toxics Control Act

Remedy Selection (Sections 350-390)

- Natural Attenuation
- Dilution/Dispersion
- Model Remedies

Model Toxics Control Act
Draft EIS

ALTERNATIVES

The alternatives considered in this DEIS are:

- No Action Alternative
- Proposed Action
- Policy and Guidance Action Alternative

19

Model Toxics Control Act
Draft EIS

Four Areas Evaluated in Detail:

- Use of Site-Specific Risk Assessments (including non-petroleum Method A table changes).
- A Strategy for Dealing with Petroleum Contamination (including petroleum related Method A table changes).
- Evaluating Terrestrial Ecological Risks.
- Enhancing the Remedy Selection Process.

20

Model Toxics Control Act
Draft EIS

IMPACTS

Elements of the Environment evaluated: Soil, ground water, surface water, air, human health, plants and animals, and land and water use.

The analysis of impacts concluded that there were no probable significant adverse environmental impacts that were not mitigated as part of the proposed action.

21

Model Toxics Control Act

22

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
P.O. Box 47600 • Olympia, Washington 98504-7600
(360) 407-6000 • TDD Only (Hearing Impaired) (360) 407-6006

Formal Public Hearing Record
Hearing Transcript

Date:	**December 15, 1999**
Contact Person:	**Carol Bergin**
Subject:	**MTCA Rule (173-340 WAC); Public Participation Grants (Chapter 173-321 WAC); Remedial Action Grants and Loans (Chapter 173-322 WAC) and the draft MTCA Environment Impact Statement.**
Facility Name and Address:	**6:00 p.m. Department of Ecology Eastern Regional Office First Floor Conference Room Spokane, WA**
Ecology Staff:	**Curtis Dahlgren, Steve Robb, Carol Bergin**
Public Present:	**Seven**
Testimony Present:	**None**

Let the record show its 6:51 p.m. on Wednesday, November 15. 1999 and this hearing is being held at the Department of Ecology, 4601 N. Monroe in Spokane, Washington in the 1st Floor conference room.

The primary purpose for this evening's hearing is to receive comments regarding the proposed rule revisions to the model Toxics Control Act, Public Participation Grant, Remedial Action Grants and Loan and the draft Environmental Impact Statement. Legal notices of this hearing were published in the Washington State Register on November 17, 1999. Paid notices were published on Wednesday, December 8, 1999

in the Spokesman Review. Paid notices were also published in the Seattle Times, the PI, and the Yakima Herald on or before December 9, 1999. In addition, notices of the hearing were mailed to approximately 800 interested persons.

We have no individuals that are interested in giving formal testimony this evening. There is no one in this room that wants to testify—correct? OK. We have no one that is interested in testifying so we will go ahead and move to close this hearing—let the record show that this hearing is adjourned at 6:52 p.m. on December 15, 1999.

Prepared by Dawn Hooper, Ecology
January 7, 2000

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
P.O. Box 47600 • Olympia, Washington 98504-7600
(360) 407-6000 • TDD Only (Hearing Impaired) (360) 407-6006

Formal Public Hearing Record
Hearing Transcript

Date:	**December 16, 1999**
Contact Person:	**Christina Zerby**
Subject:	**MTCA Rule (173-340 WAC); Public Participation Grants (Chapter 173-321 WAC); Remedial Action Grants and Loans (Chapter 173-322 WAC) and the draft MTCA Environment Impact Statement.**
Facility Name and Address:	**6:00 p.m. Department of Ecology Central Regional Office Waterfall Conference Room Yakima, WA**
Ecology Staff:	**Curtis Dahlgren, Steve Robb, Christina Zerby**
Public Present:	**Six**
Testimony Presented:	**One**

Let the record show that it is 6:35 pm on December 16, 1999 and this hearing is being held in Yakima, Washington at the Department of Ecology building in the Waterfall Room. Legal notices of this hearing were published in the Washington

State Register on November 17, 1999. Paid notices were published on or about Wednesday, December 8, 1999 in the Seattle Times, PI, Spokesman Review, and the Yakima Herald. In addition, notices of this hearing were mailed to about 800 interested parties. We will begin the formal part of this public hearing with Mr. Rod Smith. Please remember to tell us your name and your address.

My name is Rod Smith; our company headquarters is ___ East Main in Grandview. Also I am a board member of the Washington Marketer Association representing in this case the Eastern Washington Oil Marketers. We have operations from Cle Elum, Ellensburg, Yakima, the Valley, and Tri-Cities. We supply about roughly 40-45 different petroleum outlets—some that we own and some that are independently owned and operated by sub- franchises of our company.

I guess that I also want to state I represent small business—we do not represent an oil company—we are just a small business out there trying to make a living and provide you the services at the best cost that we can to give you the best price in fuel.

1230 I want to go on record stating that the cleanup levels their proposing for benzene—their proposing to change that from the standard of 5 part per million to 1 part per million—that is the basic part I alluded to earlier—while they were changing the cleanup levels for gasoline concentrations in the soil. I have been told by an insurance company that if this is changed at that level that I am going to have problems getting my insurance, number one, and if I am able to get it for all my sites it's going to be at least twice expensive—that can do nothing but increase the price of fuel. Another thing--I don't think they have taken into effect
1231 the Livermore study. In the impact statement you're stating that you are going to take a look at some of the new scientific data that is out there and I don't believe that you have taken to account the Livermore study that was done in California. You state that you are aware of the studies existence but that it doesn't apply here in Washington. If it applies in California why doesn't it apply in Washington?
1232 Also note this study took into account 160 contaminated wells throughout Washington—of that 160 wells only five of them were contaminated with gasoline—that is only 3.2 percent of the wells and I don't see that can be a justification from publishing this much higher stringent level with only less than five percent of the wells were contaminated with petroleum products.

1233 You talk about another method here of cleanup. It seems that is going to cost us in preparation for cleanup an awful lot of money to be able to use this method. We don't think it's really _____ to our industry. I will read you another quote here that our organization has come out with. "Until you can demonstrate scientifically that the current soil cleanup levels are not protective of human health and the environment by showing actual cases where ground water has been

1233 cont. contaminated by these constituents to a degree that violates drinking water standards you do not have the scientific and sufficient and justification to modify these cleanup levels and standards."

1234 And again I'll state that small businesses like ours are going to be pretty hard pressed to be able to get financing and to get insurance with this new level of cleanup of petroleum.

Thank you.

Anyone else here that would like to comment? (no response) Okay.

If you would like to send Ecology written comments, please remember that they must be received no later than January 18, 2000 and you can send them to Department of Ecology, Toxics Cleanup Program, c/o Rules Division, PO Box 47600, Olympia, Washington 98504-7600.

Please remember to send the written comments to the address that was just given to you.

All testimony received at this hearing as well as at other hearings held in Vancouver, Seattle, Spokane and here, along with all written comments received by January 18, 2000 will be part of the official hearing record for this proposal.

The agency director or his or her designee will look at public comments, the responsiveness summary and staff recommendations and will make a decision about adopting the proposal.

Adoption is currently scheduled for June 17, 2000. If the proposed rule should be adopted that day and filed with the Code Reviser it will go into effect 31 days later.

If we can be of further help to you please don't hesitate to ask—on behalf of the Department of Ecology thank you for coming tonight. I appreciate your cooperation and courtesy.

Let the record show that this hearing is adjourned at 6:45 pm on December 16, 1999.

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BEFORE THE DEPARTMENT OF ECOLOGY

IN RE: MODEL TOXICS CONTROL)
ACT PROPOSED)
RULE REVISION)
_____)

VERBATIM REPORT OF MTCA PUBLIC HEARING
FOR THE PURPOSES OF PROPOSED RULE REVISIONS
DAWN HOOPER, HEARINGS OFFICER
JANUARY 4, 2000
TACOMA, WASHINGTON

Reported by:
SHAUN LINSE, CCR
CCR NO. LI-NS-ES-M4020H

COPY

I N D E X

PUBLIC SPEAKERS	PAGE
GLENDA THOMAS	6
BEN CALEY	9

E X H I B I T S

NO.	PAGE	DESCRIPTION
1	5	Four-Page Document illustrating the slides that were shown while explaining the proposed rule revisions

BE IT REMEMBERED that a Public Hearing was held on January 4, 2000, at the hour of 10:05 a.m. at 2201 Portland Avenue, Tacoma, Washington, before Shaun Linse, CCR, Notary Public in and for the State of Washington, residing at Kent, Washington;

Whereupon, the following proceedings were had, to wit:

* * * * *

HEARINGS OFFICER: Let the record show that it is 10:05 a.m. on January 4, 2000, and this hearing is being held in Tacoma at the Waste Water Treatment Facility.

Legal notices of this hearing were published in the Washington State Register on November 17, 1999 or actually previous hearings. This is an extra hearing that we added on. It was noticed in the Olympian and the Seattle Times, P.I., on December 14, and notices were also published about the hearings and the proposed Rule amendments and EIS on December 8 in the Seattle Times, P.I., Spokesman Review, and in the Yakima Herald. In addition, notices of the hearing were mailed to more than 800 interested people. Many of you I'm sure received notice.

As today's Hearings Officer I have two main responsibilities. One is to make sure everybody who would

like to comment is allowed to, and, two, to make sure that the Department obtains a clear record of the hearing and that's why we're having a court reporter keep the record for us, but to do this I need your cooperation.

I just have a few ground rules to make sure that we can get a good record. First of all, speaking oral during the formal public portion of the meeting I'll call you in the order of the cards that I received and have you come up to the front and give your formal testimony. We ask that just one person speak at a time, and that there not be sidebar conversations, so that it's easy to get a record of the meeting.

Second is about the length of comments. We don't have very many people here today, but if you could summarize any lengthy comments, try to keep the public testimony part down to three to five minutes, give everybody a chance. And then if anyone has additional testimony they would like to present, we can come back and allow additional time for you.

So once the formal public testimony portion of the meeting does begin, that's your turn for the meeting. You can ask questions within the context of the testimony or simply present testimony, but Ecology won't be responding to your comments or questions during that portion of the meeting. Rather after the written comment

period is over, staff will prepare a written responsiveness summary that will identify your questions and comments.

You will get a copy of these written responses if you signed your name and address onto the registration card or if you have done so in the past requested a responsiveness summary.

The public comment period extends to January 17. We need to have written comments received by January 18th, extended by one day to accommodate for a Post Office holiday of January 17th. So if we receive comments postmarked by January 18, that's just fine or at the Department of Ecology by the end of the day on January 18th.

Let's go ahead and get started. Curtis will begin with the overall presentation.

(Presentation given and brief question and answer period held.)

(Exhibit No. 1 marked for identification.)

HEARINGS OFFICER: We have two people who would like to testify. I will call your names in the order I received them. When you come up, could you please state your names for the record, your address, and who you're representing, and then go ahead and provide your testimony. So just come on up to the podium.

This is the part of the meeting where the court reporter will be recording your formal testimony. So if anybody needs to move closer, please feel free.

MS. THOMAS: My name is Glenda Thomas. I am the director of the Oil Heat Institute of Washington. We are a nonprofit trade association of heating oil dealers in Washington State. We're located in Seattle, Washington. We have been in operation for 57 years.

We just have one question that we want to ask, but I did want to give you a little bit of perspective about where we are coming from in that about 200,000 homes, schools, small businesses, and churches in this state use heating oil for heating purposes. That amounts to about 135 million gallons of heating oil each year according to the DOE.

Through our heating oil pollution liability insurance program which we put together through the legislature some years ago, our intention was to provide protection against financial hardship for users of home heating oil, and this insurance coverage for spills or leaks from heating oil is paid for by heating oil dealers and free to consumers in heating oil.

It's administered by the pollution liability insurance agencies. It has been a very successful program for the heating oil consumers, as well as protecting the

1222

1222 cont.

environment. The program has been rated as best in the nation by the EPA. We have worked with Ecology and PLIA for two years to obtain the 2,000 ppm in Method A cleanup levels for heating oil contamination in the soil. This has resulted in huge savings to heating oil users and cost of cleanup, as well as protecting the human health and the environment.

1223

Our one question as far as the proposed amendments are concerned deals with the terrestrial ecological evaluation portion of the proposed amendments. We believe that most sites where the heating oil spill would qualify for exclusion under this portion.

The problem is that although an exclusion is granted, institutional controls may be imposed by Ecology on the site, and this institutional control situation is about which we are concerned.

The institutional control section reads: If any of the conditions listed in the 2(a) through (c) are used to end the simplified evaluation, institutional controls may be needed to ensure that the condition will continue to be met in the future. Institutional controls result in deed restrictions that would make the transfer of property, whether residents or small business or churches, all but impossible.

Now our question is with the imposition or

1223 cont.

possible imposition of institutional controls by an Ecology field inspector, you could have a disaster for many heating oil customers, particularly the elderly in selling homes or business or church sites.

1224

We believe that the bottom line in effect is that while Method A provides a soil cleanup level for heating oil of 2,000 ppm, for all intents and purposes the terrestrial ecological evaluation procedure brings the cleanup level back to 200 ppm.

Under our current heating oil pollution liability insurance program only about four percent of those now eligible for the program would be covered under this procedure. The only way to obtain a higher cleanup level than 200 ppm under this system for a site contaminated by heating oil is to conduct a site specific terrestrial evaluation.

We understand this, but site specific assessment tools are not currently available to readily measure the impact of chemical constituents on terrestrial ecological receptors. Results would be uncertain and ambiguous, and the process would be time consuming and expensive.

1225

We believe that this sentence must be changed. Institutional controls, if any, of the conditions listed in 2(a) through (c) are used to end this

1225 cont.

simplified evaluation, institutional controls may be used to ensure that the condition will continue to be met in the future.

Earlier it was mentioned here that programs must use reasonable maximum exposure. We believe that this balance might be interrupted by the imposition of institutional controls by an Ecology inspector with dire results to the people who own the property. That is my testimony.

HEARINGS OFFICER: Thank you. Ben Caley. Would you please state your name and address and who you represent.

MR. CALEY: My name is Ben Caley, and I am from Pacific Heating Oil in Seattle, Washington, and I am the owner of Pacific Heating Oil Company. My address is 3643 Woodland Park Avenue North, 98103. My phone number is (206) 632-1966.

To just go on a little from what Glenda has mentioned, I am just concerned that the cost will exceed the remedy value if we're to use this new method of evaluation on the sites. And we've had a great deal of protection to our consumers that has prevented a lot of costly cleanups, unnecessary costly cleanups as a result of a cottage industry that has been established with the removal of tanks and some of these things.

1226

There are some horror stories that have gone on in the past that have been pretty well curtailed with the implementation of the PLIA program, and with the cost of the PLIA program as it is the heating oil dealers who are funding the PLIA program can afford to do it at this time, and we would like to see the program remain in effect. And my greatest concern is that we could have a cost arise that will make it difficult for us to purchase insurance to fund this program. 1227

Personally I have not heard of any cases that would call for any extended or larger evaluations at these sites, and if there have been, I have been unaware of it. So I am a little bit surprised to hear that there's a need and necessity for increased evaluation of these sites. 1228

So I would just hope that in thinking about implementing a new program like this that thought will be given to what it might do to the overall effect of replacement of tanks properly and the cost to do so. And unfortunately I think there are some people if the cost of these things rise, why it's not difficult for someone to unscrew a fill pipe and cover it over with beauty bark and forget it's there, and there are situations where this can occur. And I just think when you make it more difficult and more costly, the fewer sites you'll have that will get 1229

1229 cont.

cleaned up. Thank you.

HEARINGS OFFICER: Thank you. Is there anyone else who would like to provide testimony today?

Well, you're also welcome to send in written comments to the Department. Please remember that they must be received not later than January 18, 2000. And if anybody needs the address, I just put away the overhead chart but come on up, and I'll give you the address. Otherwise, you have it on some of your documentation there.

So this hearing was added in order to provide additional notice of the Draft Environmental Impact statement and also to provide a hearing after the holiday season for anyone who just got caught up in the holidays, so I'm glad that you were all able to be here today and to take time out of your schedule to provide comments and learn more about the proposed rule amendments.

All testimony received at this hearing, as well as from the other hearings that have been held in Seattle, Spokane, Yakima, and Vancouver, along with all written comments received will be a part of the hearing record for this proposal. The next step for the rule is adoption.

The agency director or designee will look at

the public comments we receive, the responsiveness, and staff recommendations and will make a decision about adopting the proposal. The adoption is currently rescheduled for June 17 or thereabouts year 2000.

If the proposed rule should be adopted that day and filed with the code reviser, it will go into effect 31 days later.

If we can be of further assistance to you, please don't hesitate to ask, and on behalf of the Department of Ecology, thank you all for coming today. We appreciate your cooperation and participation.

Please let the record show that this hearing is adjourned at 11:30 a.m. on January 4, 2000.

* * * * *

(Public Hearing adjourned at 11:30 a.m.)

A F F I D A V I T

I, Shaun Linse, CCR, Certified Court Reporter, do hereby certify that the foregoing transcript prepared under my direction is a true and accurate record of the proceedings taken on January 4, 2000 in Tacoma, Washington.

Shaun Linse, CCR

CCR NO. LI-NS-ES-M4020H

COPY

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PENGAD-Bayonne, NJ
EXHIBIT 637
1/4/00
1
Public Hearing

Model Toxics Control Act
Proposed Rule Revision

MTCA Public Hearings

PROPOSED RULE REVISIONS

December 1999

Model Toxics Control Act
Proposed Rule Revision

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Model Toxics Control Act

General Provisions

- Adds Site Reporting Examples
- Adds Criteria for Removing Sites From the Hazardous Sites List That Use Containment

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General Provisions

- Clarifies Requirements for Institutional Controls and Financial Assurance
- New Section Consolidating Independent Remedial Action Requirements
- Updates Statistical Procedures

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Public Involvement Provisions

- Content of a Public Notice When a Site-Specific Risk Assessment is Used
- Notification to Local Governments and Affected Property Owners
- Establishes a Citizen Technical Advisor Position

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Public Participation Grant Rule

Proposed revisions to the Public Participation Grants rule, WAC 173-321 include:

- Increases the grant amount to sixty thousand dollars
- Allows for emergency grants

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Remedial Action Grant Rule

- Allows grants to local governments at sites where they are not a PLP
- Adds a grant category for area-wide groundwater contamination
- Removes the local government funding cap for minimum landfill closure requirements

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Human Health Risk Assessments in Cleanup Decisions

- Establishes a framework for changing assumptions in human health risk assessments
- Must use "reasonable maximum exposure"

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Human Health Risk Assessments in Cleanup Decisions

- Criteria for Evaluating New Scientific Information
- Effect of New Standards on Past Cleanup Actions
- Provides for the Use of Toxicity Equivalency Factors for Dioxins, Furans and PAHs

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Ground Water [Section 720]

- Three types of Ground Water More Explicitly Recognized
  - Drinking Water Aquifers
  - Ground Water Flowing into Surface Water
  - Non-potable Ground Water

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Ground Water [Section 720]

- Point of Compliance Changes:
  - Use of surface water monitoring when property not adjacent to surface water
  - Use of area-wide point of compliance
  - Allows use of upland monitoring wells for ground water discharging to surface water

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Soil Cleanup Levels (Section 740-745)

- Ingestion
- Skin Contact
- Inhalation of Vapor
- Leaching to Ground Water
- Land Use

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Petroleum Cleanups

- Adds Site-specific Options
- Updates Method A Tables
- Adds a Total Petroleum Hydrocarbon Testing Table

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Terrestrial Ecological Evaluation Procedures

[Sections 7490 - 7494]

1. Criteria for Exclusions
2. Simplified Evaluation
3. Site-specific Evaluation

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Remedy Selection (Sections 350-390)

- Incorporates Remediation Levels
- Adds Commercial Gas Station Soil Exposure Scenario
- Clarifies The Cost Evaluation Procedure

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Remedy Selection (Sections 350-390)

- Natural Attenuation
- Dilution/Dispersion
- Model Remedies

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ALTERNATIVES

The alternatives considered in this DEIS are:

- No Action Alternative
- Proposed Action
- Policy and Guidance Action Alternative

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Four Areas Evaluated in Detail:

- Use of Site-Specific Risk Assessments (including non-petroleum Method A table changes).
- A Strategy for Dealing with Petroleum Contamination (including petroleum related Method A table changes).
- Evaluating Terrestrial Ecological Risks.
- Enhancing the Remedy Selection Process.

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IMPACTS

Elements of the Environment evaluated: Soil, ground water, surface water, air, human health, plants and animals, and land and water use.

The analysis of impacts concluded that there were no probable significant adverse environmental impacts that were not mitigated as part of the proposed action.

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