



**Responsiveness Summary
for
Controls for New Sources of
Toxic Air Pollutants
Chapter 173-460 WAC**

August 1993

**Prepared by the
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TABLE OF CONTENTS

- I. Background and Summary of Purpose
- II. Summary of Public Involvement in the Rule Development Process
- III. Concise Explanatory Statement
- IV. Format of the Responsiveness Summary
- V. Scheduled Adoption Date
- VI. Comments and Ecology Staff Responses to August 1993 Proposed Draft

Appendices:

Appendix 1: Public Notices

Appendix 2: Written and Verbal Comments on August 1993 Proposed Draft

Appendix 3: Economic Analysis Compliance Document

Appendix 4: Revised Rule Language

I. Background and Summary of Purpose

The Washington Clean Air Act, RCW 70.94.331(2)(c), states that the Department of Ecology shall:

“Adopt by rule, air quality standards and emission standards for the control or prohibition of emissions to the outdoor atmosphere of radionuclides, dust, fumes, mist, smoke, other particulate matter, vapor, gas, odorous substances, or any combination thereof. Such requirements may be based upon a system of classification by types of emissions or types of sources of emissions, or combinations thereof, which it determines most feasible for the purpose of this chapter.”

The Washington Clean Air Act also states that protection of public health is the policy of the State of Washington. RCW 70.94.011 states:

“It is the intent of this chapter to secure and maintain levels of air quality that protect human health and safety, including the most sensitive members of the population, to comply with the requirements of the federal Clean Air Act, to prevent injury to plant, animal life, and property, to foster the comfort and convenience of Washington’s inhabitants, to promote the economic and social development of the state, and to facilitate the enjoyment of the natural attractions of the state.”

Under authority of chapters 43.21A and 70.94 RCW and in response to evidence of a toxic air pollution problem in Washington, the Department of Ecology developed a regulation to control new sources of toxic air emissions. Chapter 173-460 WAC, Controls for New Sources of Toxic Air Pollution, became effective in September 1991.

The 1990 amendments to the federal Clean Air Act established numerous requirements for a nationwide strategy for reducing toxic air pollution; many of the requirements are to be implemented by state and local authorities upon receiving approval from the Environmental Protection Agency (EPA). Among the provisions describing the nationwide toxics program is Section 112(b), which lists 189 toxic chemicals to be addressed by the program.

The Washington legislature also amended the Washington Clean Air Act (Chapter 70.94 RCW) in 1991. These amendments affect several provisions of the rule governing new sources of toxic air pollution.

The purpose of the proposed amendments to Chapter 173-460 WAC, Controls for New Sources of Toxic Air Pollution, is to (1) revise definitions for consistency with the relevant statutes, (2) correct typographical errors and make other editorial changes, and (3) update the list of regulated pollutants to include forty-two chemical substances in Section 112(b) of the 1990 amendments to the federal Clean Air Act and update acceptable source impact levels for all substances in the rule based on new health effects data.

II. Summary of Public Involvement in the Rule Development Process

The public comment period regarding the proposed amendments to Controls of New Sources of Toxic Air Pollutants, Chapter 173-460 WAC, closed August 20, 1993. Public hearings on the proposed amendments were held August 11 and 12, in Bellevue and Spokane, respectively.

General

Documents relating to public involvement are located at the end of this Responsiveness Summary in Appendix 1. Copies of the original written comments on the August 1993 draft are contained in Appendix 2.

Public Hearings

Two public hearings were held on the proposed amendments in August, 1993. Public notice of these hearings were mailed to over 1800 interested persons, and published in the following newspapers on August 7 and 9, 1993: the Spokane Spokesman Review, the Seattle Post Intelligencer, and the Tacoma Morning News Tribune. The proposed amendments and public hearing notices were also published in the Washington State Register, 93-14-118, on July 2, 1993.

Prior to the public hearings, staff outlined the proposed amendments and also informally discussed the proposed regulations, and related issues, with interested persons.

The public hearings were held:

August 11, 1993
10:00 a.m.

Washington Department of Ecology
Northwest Regional Office
3190 160th Ave SE, Conf. Room 1C
Bellevue, WA 98008-5452

August 12, 1993
7:00 p.m.

Spokane County Health District
West 1101 College Ave.
Spokane, WA 99201-2095

III. Concise Explanatory Statement

The following is the concise explanatory statement, required by RCW 34.05.355, stating (a) Ecology's reasons for adopting the rule and (b) a description of any differences between the text of the proposed rule as published in the state register and the text of the rule as adopted, other than editing changes, and the reason for the change.

A. Ecology's Reasons for Adopting the Proposed Rule

The purpose of the rule is to protect the public from unhealthful levels of toxic emissions from new or modified commercial and industrial operations. The proposed amendments to Chapter 173-460 WAC reflect recent changes in the federal and state Clean Air Acts. The purpose of this revision process is to:

- Add 42 substances that are included in the federal Clean Air Act Amendments that were not addressed in the existing regulation;
- Correct typographical errors in the regulation;
- Revise definitions in the regulation to ensure consistency with Chapter 70.94 RCW as amended during the 1991 and 1993 legislative sessions; and
- Update the Acceptable Source Impact Levels (ASILs) for all substances in the rule based on new health effects data.

It is important to note that this is a limited rule-making effort. The rule was opened to make only the changes identified above. The new source review procedures and calculation methods for determining acceptable source impact levels are not under review and Ecology does not intend to make major changes at this time.

B. Differences Between the Text of the Rule as Proposed and as Adopted

A redline (example) indicates language that has been added and a strikeout (example) indicates language that has been deleted. Following each of the changes or groups of changes is an explanation of Ecology's reasons for making the change.

Section 173-460-020 (~~(Mailstop PV 11)~~) P.O. Box 47600, Olympia, WA 98504-~~((8711))~~7600.

Section 173-460-020(8) (Revised) 40 CFR Part 51 Appendix W, ~~((450/2-78-027R as amended by Supplement B (September 1990)))~~

Section 173-460-020(12) "Inhalation Reference Concentration

Section 173-460-020(14) "Modification" means any physical change in, or change in the method of operation of, a stationary source that increases the amount of any ~~((toxic))~~ air contaminant emitted by such source or that results in the emission of any ~~((toxic))~~ air contaminant not previously emitted. The term modification shall be construed consistent with the definition of modification in Section 7411, Title 42, United States Code, and with rules implementing that section. For purposes of this chapter, the term "air contaminant" shall mean "toxic air contaminant" or "toxic air pollutant" as defined in WAC 173-460-020(20).

Section 173-460-020(20) "Toxic air pollutant (TAP)" or "toxic air contaminant" means any Class A or Class B toxic air pollutant listed in WAC 173-460-150 and WAC 173-460-160....

Section 173-460-040(2)(b) minor process change~~((s))~~ that does

Section 173-460-040(9) construction approval~~((;))~~, prior

Section 173-460-050(3) be used ~~((prior))~~ to demonstrate compliance with WAC 173-460-090.

Section 173-460-050(4)(a)(ii) and performing modeling for the total TAP emissions and compar~~((e))~~ing maximum

Section 173-460-060(5)(d)(i) be allowed to ~~((fully))~~ drain fully,

Section 173-460-080(2)(c) can be obtained through NTIS (703) 487-4650 or can be downloaded from the OAQPS Technology Transfer Network electronic bulletin board system.

Section 173-460-150 Table I Class A TAPs

53-96-3	<u>2-Acetylaminofluorene</u>
((56-55-3	Benz(a)anthracene))
<u>56-55-3</u>	<u>Benzo(a)anthracene</u>
3547-04-4	DDE (p,p'- ((Dichloroethylene))) <u>Dichlorodiphenyldichloroethylene</u>
((58-89-9	Lindane))
129-15-7	2-Methyl-1-nitroanthraquinone
((71856-48-9	Methyl azoxymethanol B-D glucosiduronic acid))
592-62-1	Methyl azoxymeth ((anol)) yl acetate
139-91-3	5-(Morpholinomethyl)-3-((-))5-nitrofurfurylidene((-))amino)-2-oxazolidinone (furaltudone)
C7440-02-0	Nickel and compounds (as <u>nickel subsulfide or nickel refinery dust</u>)
((924-16-3	N-Nitrosodi-n-butylamine))
531-82-8	N-(4-(5- ((Nitro)) Nitro-2-furyl)-2-thiazolyl)acetamide
((759-73-9	N-Nitroso-n-ethylurea (NEU))
621-64-7	N-Nitrosodi-n-propylamine
10595-95-6	N-Nitrosomethylethylamine
59-89-2	N-Nitrosomorpholine
86-30-6	N-Nitrosodiphenylamine
55-18-5	N-Nitrosodiethylamine (diethylnitrosoamine) (DEN)
62-75-9	N-Nitrosodimethylamine))
<u>924-16-3</u>	<u>N-Nitrosodi-n-butylamine</u>
<u>759-73-9</u>	<u>N-Nitroso-N-ethylurea (NEU)</u>
615-53-2	N-Nitroso-((n))N-methylurethane
<u>621-64-7</u>	<u>N-Nitrosodi-n-propylamine</u>
<u>10595-95-6</u>	<u>N-Nitrosomethylethylamine</u>
<u>59-89-2</u>	<u>N-Nitrosomorpholine</u>
<u>86-30-6</u>	<u>N-Nitrosodiphenylamine</u>
<u>55-18-5</u>	<u>N-Nitrosodiethylamine (diethylnitrosoamine) (DEN)</u>
<u>62-75-9</u>	<u>N-Nitrosodimethylamine</u>

Chapter 173-460 WAC Controls for New Sources of Toxic Air Pollutants

Section 173-460-150	Table II Class A TAPs		
108-43-0	((Chlorophenols)) Chlorophenols		0.1800000
764-41-0	1,4-Dichloro-2-butene		0.0003800
106-93-4	Ethylene dibromide (<u>dibromethane</u>)		0.0045000
C7440-02-0	Nickel and compounds (<u>as nickel subsulfide or nickel refinery dust</u>)		0.0021000
1746-01-6	2,3,7,8- Tetrachlorodibenz(<i>i</i>) <u>o</u> -p-dioxin (2,3,7,8-TCDD)		0.00000003
Section 173-460-150	Table III Class A TAPs		
126-99-8	((B))β-Chloroprene	120	24 hour
((58 89 9	Lindane	1.7	24 hour)
101-77-9	4,4-Methylene_dianiline	2.7	24 hour
Section 173-460-160	Class B TAPs		
((79 06 1	Acrylamide		0.10))
7773-06-0	Ammonium ((sulfamate))sulfamate		33
((56 55 3	Benzo(a)anthracene))
((75 25 2	Bromoform		17))
106-97-8	Butane		((---))6300.0
109-79-5	<u>n</u> -Butyl mercaptan		6.0
109-73-9	<u>n</u> -Butyl amine		50.
((57321 68 8)	55720-99-5Chlorinated diphenyl oxide (hexachlorophenyl ether)		1.7
((51 50 8))			
51-12-5	Cyanides, as CN		17
95-50-1	<u>o</u> -Dichlorobenzene (1,2- Dichlorobenzene)		1000
((106 46 7	p -Dichlorobenzene		1500
((25321 14 6	Dinitrotoluenes (mixed)))
121-14-2	2,4-Dinitrotoluene		5.0
((106 89 8	Epichlorohydrin		1.0))
51-79-5	Ethyl carb(<i>o</i>) <u>a</u> mate		---
-----	F(<i>e</i>) <u>i</u> brous glass dust		33
1309-37-1	Iron oxide fume, ((Fe2O3)) as Fe ₂ O ₃ as Fe		((1.7))17
26952-21-6	((Isocetyl)) Isocetyl alcohol		890
3687-31-8	Lead arsenate, as Pb((3-(AsO4)2)3(A3O4)2)		0.50
150-76-5	4-Methoxyphenol		((1.7)) 17
71-55-6	Methyl chloroform 1,1,1-Trichloroethane)		((6700))6400
21087-64-9	Metribuzin		((1.7)) 17
C7439-98-7	Molybdenum, as Mo soluble cpds		((1.7)) 17

8 8-72-2	Nitrotoluene	((3.7)) 37
8012-95-1	Oil mist, mineral	((1.7)) 17
((87 86 5	Pentachlorophenol	1.7))
106-50-3	p-Phenylen((e diamine))ediamine	0.33
626-17-5	m-Phthalodinitrile	((1.7))17
142-64-3	Piperazine dihydrochloride	((1.7))17
71-23-8	n-Propyl alcohol	1600
((75 56 9	Propylene oxide	30))
83-79-4	Rotenone	((1.7))17
7803-62-5	((Silicon))Silicon tetrahydride	22
C7440-22-4	Silver, soluble compounds as Ag	0.033
7631-90-5	Sodium bisulfite	((1.7))17
C7440-25-7	Tantalum, metal & oxide dusts	((1.7))17
7722-88-5	Tetrasodium pyrophosphate	((1.7))17
C7440-28-0	Thallium, soluble compounds, ((Ti))TI	0.33
((€))7440-31-5	Tin, Metal	6.7
7440-31-5	Tin, oxide & inorganic except Sn((H4))H ₄	6.7
((71 55 6	1,1,1 Trichloroethane	6000))
1321-65-9	Trichloronaphthalene	((1.7))17
603-34-9	Triphenyl amine	((1.7))17
C7440-33-7	Tungsten, Insoluble compounds	((1.7))17
1314-62-1	Vanadium, as ((V205))V ₂ O ₅	0.17
-----	Welding Fumes	((1.7))17
1314-13-2	Zinc oxide, fume	((1.7))17
C7440-67-7	Zirconium compounds, as Zr	((1.7))17

IV. Format of the Responsiveness Summary

This responsiveness summary addresses all comments received during the August 1993 public comment period. Comments were reviewed and divided into issue areas which correspond to subsections in the proposed regulation. Where multiple comments were received on a particular issue, an attempt was made to summarize each of the major concerns and provide examples of individual comments. The Department of Ecology's response follows each of these comments.

References to written comments are designated by the name of the individual providing the comment, the page number of the written comment, and the date of the written comment (e.g. Backes, p.1, August 1993). References to testimony provided at one of the public hearings are designated by the individual's name, the location of

the public hearing, and the date (e.g. name, Spokane Hearing, August 1933). Those publications referred to by individual participants, if any, are included in the administrative record for this rulemaking and are cited by author and date.

V. Scheduled Adoption Date

The next step for the proposed amendments is adoption. The agency director will consider public comments, the responsiveness summary, and staff recommendations, and make a decision regarding adoption of the proposal. Adoption is scheduled for early January, 1994. Once adopted, the revisions will become effective in early February, 1994.

VI. Comments and Ecology Staff Responses to August 1993 Proposed Draft

A. General Comments

1. Science Advisory Board/Ongoing Scientific Review

In general, we agree with and support the Department's decisions 1) to add additional species to coincide with the Federal Clean Air Act 112 (b) list of Hazardous Air Pollutants, 2) to update the ASILs, 3) to remove references to T-RACT [old 173-460-020(15) and old 173-460-040(4c)]. We also appreciate the effort that went into providing the ASIL Master Tables and Instruction page. We suggest that the Department formalize its effort to meet the "ongoing scientific review" requirements of WAC 173-460-120(lb).

We are often frustrated by the inability of the Department to make a judgement on the volumes of information brought to Ecology's attention (ref. Chloroform information provided at January 1991 meeting, and Hydrogen Sulfide information provided to the Department in May 1993). When will we have a Science Advisory Board to handle air toxics and risk issues? (Sistko, p.1, August 1993)

Ecology's Response: The Air Quality Program has not established the Science Advisory Board for several reasons. Over the past two and a half years, the Program has focused its efforts on implementing federal standards where risk issues have already been reviewed or implementing state directives such as restricting open burning or expanding the motor vehicle inspection program or developing the operating permit program which did not require risk review. As the program begins the process of regulating existing stationary sources, we have recognized the need to address risk issues. However, during the 1993 legislative session, a bill was introduced to dismiss existing Ecology Science Advisory Boards and create a new Science Advisory Board to oversee all Department risk issues and evaluate new scientific data. Although this legislation has not been adopted, the Air Quality Program believes establishment of a Science Advisory Board as required by RCW 70.94.039 is premature until the legislative process is complete.

The commentor correctly noted that the Air Quality Program has not established formal procedures for "ongoing scientific review." To facilitate the review of new scientific data and risk issues, the Air Quality Program plans to hire a toxicologist within the next few months. Once that person is hired, the Air Quality Program will examine the need for a formalized review process.

2. Small Business Economic Impact

In general, we support the major changes to the rule (removal of RACT and T-RACT references; addition of TAP's such that the entire list of Federal Clean Air Act 112(b) Hazardous Air Pollutants is contained within 173-460-150 and 173-460-160; development of a prioritization method outside the rule). We continue to be concerned by the impact this rule can have on small businesses (reference February 6, 1991 AWB comments to Department of Ecology). (Backes, p.1, August 1993)

Ecology's Response: Ecology appreciates and shares your concern regarding the impact of regulation on small business. However, as demonstrated in the Small Business Economic Impact Statement (SBEIS) accompanying this rule revision, the proposed changes will not measurably affect small businesses.

Again, AWB cautions Ecology against too narrow a review of economic impact. These regulations will undoubtedly adversely affect the small business community's economic viability. Perhaps Ecology should reconsider the scope of the affected businesses before determining that there is little impact. (Backes, p.3, August 1993)

Ecology's Response: The effects of the overall rule were evaluated during the initial development of WAC 173-460. At that time, Ecology included the small quantity generators table in the regulation to ease the burden of compliance for small businesses and even larger businesses with small modifications. Experience has shown that the small quantity generators table has helped many applicants determine easily their compliance with the regulation. The Small Business Economic Impact Statement (SBEIS) prepared for this effort looks at the effect of the proposed revisions on small business. The SBEIS determined that impact of the updated ASILs on new small businesses will be minimal. Ecology will evaluate any new information that can be provided on the impact of the proposed revisions to small businesses, and where appropriate, revise the regulation to address disproportionate impacts on small businesses.

3. Scientific Support for Regulation

The regulation should be supported by references to the studies and data which establish that the regulated substances are toxic at levels in excess of the applicable ASILs/screening analysis values. It is believed that no such support data exists.

Many of the ASILs are OSHA workplace exposure limits divided by a safety factor. The OSHA exposure limits also have a built-in safety factor. It has come to my attention that a court of law recently struck down OSHA's ability to enforce over one hundred exposure standards promulgated in 1989. As such, I believe that use of such unenforceable standards as a foundation for a Washington State toxic air pollutant regulation is inappropriate.

Dividing workplace exposure limits by a safety factor has no scientifically defensible basis, support or justification. The process is highly arbitrary and reckless especially when one considers the variability of the response curves of various substances. The rationale for establishing limits through this mechanism is indeed conservative and may successfully prevent harm and/or injury to even the most sensitive individuals with the obvious side effect of hampering business development. However, whether or not the ASILs are too conservative or too lenient cannot be supported regardless of which side of the argument you are on. An abundance of high quality data is needed to properly establish ASILs and successfully achieve the goals of RCW 70.94. In many instances, sufficient data has not been collected, compiled or evaluated.

As an engineer reviewing notice of construction applications, I have been confronted with an awkward and scientifically undefensible position after an applicant fails a preliminary screening analysis (exceeds a given ASIL). At this regrettable juncture, the reviewing engineer must require additional controls, which may be extremely costly, or additional modeling/monitoring, which may be extremely costly. The results of the additional modeling may demonstrate that neither control nor modeling was needed in the first place. The above scenario is the basis for my earlier contention that WAC 173-460 is arbitrary, reckless and scientifically unsupported.

The use of risk assessments is dubious at best given the poor quality of available data. In addition, the complexity of actual conditions, lack of control groups, limited knowledge of the variability of health effects on different individuals who are also exposed to numerous other substances in varying amounts, and the near impossibility of accurately determining a dose-response curve at the low end of exposures makes risk assessment an inappropriate tool to establish emission limits and/or evaluate the associated health impact for a proposed new or modified source of toxic air pollutants. Scarce resources (including those of my employer) must be allocated in a cost effective manner if northwest businesses are to survive and grow.

Overall suggestion: Repeal all portions of WAC 173-460 except for the identification, quantification, source category specific requirements and T-BACT requirements. These are the only portions of merit. (Mrazek, p.1 and 4, August 1993)

Ecology's Response: This rule revision effort was not intended to re-evaluate the approach used to review new sources of toxic air emissions or the methods used to determine ASIL5. However, Ecology wishes to respond to a concern voiced by the commentor. The Acceptable Source Impact Levels, or ASIL5, have not been established as standards; rather, as screening tools to identify residual risk. They are meant to be employed in tandem with the control technology-based aspects of the rule, i.e., the requirement that new and modified sources apply BACT. Even in those situations where a source's projected emissions, after the application of control technology, exceed the ASIL, a source has the opportunity to work with Ecology, the Department of Health and the local permitting authority to assess the risk from the source's residual emissions. The source may successfully rebut the presumption of unacceptable risk created by its emissions having exceeded the ASIL. If a source cannot rebut this presumption, it can still obtain a permit to construct by working with the agencies to identify other opportunities for reducing toxic emissions and the resulting risk. This combination of a control technology-based approach with a screen for residual risk maximizes resources: most sources do not exceed the ASIL and avoid ever having to do a risk analysis (some states, such as Texas, which require all sources to perform a full-blown risk analysis in the first place). The ASILs provide a simple screen to dispose of easy cases; in hard cases, the burden shifts to the source - who is in the best position to obtain information about its proposed operations readily and cheaply - to demonstrate that the risk remaining after the application of control technology is not unacceptable. If the risk is unacceptable, the source and the agencies work together, combining their information and expertise, to solve the problems impeding permit issuance.

The commentor correctly notes that OSHA's generic rulemaking efforts to update all exposure limits was struck down by the courts in January 1989. The basis for this decision was a determination by the court that OSHA lacked the statutory authority to update its rules on a periodic basis. The court did not, as inferred by the commentor, take issue with the use of threshold limit values or the scientific basis for individual values. OSHA requires a congressional fix to periodically update the TLVs. Congress may put the updated TLVs in place or streamline the process so OSHA may put the TLVs into place.

4. Adoption of Federal MACT Standards

We agree with WDOE's position of addressing existing sources through existing processes and statutes. The Boeing Company believes that toxics should be an integral part of the source review process and should not be reviewed separately. We commend WDOE for recognizing that TRACT should be incorporated into RACT. We also understand that WDOE's proposed strategy is to adopt federal MACT standards to be promulgated by 1995 and to develop RACT rules for sources governed by MACT standards to be promulgated after 1995. The Boeing Company requests that WDOE adopt federal MACT standards for all existing sources to avoid inconsistency. For sources not governed by MACT standards and which pose environmental threat, we support WDOE's proposed emphasis on developing source category rather than case-by-case RACT rules. (Kimball, p.1, August 1993)

Ecology's Response: Ecology has not yet finalized the proposed strategy for regulating toxic air emissions from existing sources. Consequently, it is not possible to say definitively whether or in which cases Ecology will depart from the federal MACT standards. Ecology will take into account this and other comments in finalizing its strategy. Ecology hopes that this clarifies any misunderstanding the commentor has on the proposed strategy.

In response to the commentor's request that Ecology adopt federal MACT standards for all existing sources "to avoid inconsistency," Ecology believes it would be abdicating its duty to the State's citizens if it were merely to adopt the federal MACT standards wholesale without an evaluation of their appropriateness for the sources and situations in Washington. It is unclear what sort of inconsistency the commentor seeks to avoid. As the nature of each federal MACT standard is source category-specific, there seems to be little value in seeking some sort of "consistency" between source categories. By what yardstick would one determine consistency? Some MACT standards may be well-suited to Washington while others may not; to adopt blindly every federal MACT standard in the name of consistency would undoubtedly lead, in some situations, to ill-conceived regulation. If the commentor is concerned not with consistency between source categories but with consistency between federal and state standards, Ecology's response is founded on the same rationale. Ecology is unwilling to risk inappropriate regulation of Washington sources in the name of consistency with federal standards.

5. RACT References

Ecology received two comments on ongoing efforts to regulate existing sources through determination of RACT.

We support Ecology's decision to remove RACT references from the new source rule. We are also encouraged by Ecology's willingness to record its criteria to prioritize existing sources of air toxics. The criteria demonstrate a pragmatic approach to an issue which would otherwise require a herculean scientific effort to accomplish. AWB would appreciate the opportunity to continue working with Ecology on better defining and describing Washington's air toxics status and developing existing source priorities. To that end, we are enclosing a flow chart of our understanding as to where the "criteria to prioritize" fit into the regulatory process. The AWB position on air toxics continues to be: first, define the problem; second describe the cause of the problem; third develop a process which reasonably addresses the cause. (Backes, p.1, August 1993)

PSAPCA strongly encourages Ecology to continue work on regulating existing sources of air toxics. Utilizing Ecology's existing authority and integrating the toxics analysis into the RACT rule development is a logical solution to a continuing rule development in an effective manner and incorporating concern over toxic air pollutants emitted from these sources. The Agency hopes to see progress made in RACT rule development based on the strawman list developed during the Advisory Committee meetings with continued efforts made by Ecology to better define the sources of air toxics which result in the highest risk to the public. (Kircher, p.1, August 1993)

Ecology's Response: Ecology welcomes the input of the AWB and will continue to work with all interested groups and individuals as it develops its strategy for regulating toxic air pollutants from existing sources. This rule, however, applies only to new and modified sources.

6. Typographical Errors

The typographical errors should be thoroughly reviewed so that it doesn't change the meaning and to assure that although appearance of an error, might be a negotiated term with a special meaning. Further, these "other minor" changes need to be fully mentioned in the proposal. To state that these changes were to provide consistency with the Puget Sound Air Pollution

Control Agency (PSAPCA) appears to be the “tail wagging the dog”. The Proposal should state how the PSAPCA is different from the Washington State Clean Air Act and the Federal Clean Air Act. And the differences in PSAPCA and the Washington State Clean Air Act should reflect that the more restrictive laws and regulations should control. (Tulee, p.2, August 1993)

Ecology’s Response: Ecology appreciates the commentor’s concerns and has tried to be attentive to possible unintended consequences of typographical corrections and other editorial changes. With respect to the second set of points, the proposed changes are designed to ensure consistency with the federal and Washington Clean Air Acts. Where Ecology has adopted on a statewide basis an approach contained in PSAPCA’s rules governing air toxics, Ecology has attempted to be consistent with the relevant PSAPCA rule. PSAPCA has been regulating toxic air pollutants longer than Ecology has; consequently, Ecology believes that it is prudent to draw upon the experience PSAPCA has gained regarding air toxics.

7. Future Chemical Substance Additions

In addition to the 42 new and added chemical substances pursuant to the 1990 Amendments, will the state be considering any new and additional chemicals notwithstanding the federal rule. (Tulee, p.2, August 1993)

Ecology’s Response: In this rulemaking effort, Ecology is adding only the 42 substances identified by Congress in Section 112(b) of the federal Clean Air Act that were not previously included in Washington’s list of toxic air pollutants in Chapter 173-460 WAC. Ecology must still evaluate the need to include pollutants which EPA has identified for regulation through the Accidental Release Prevention Program required by section 112(r) of the 1990 federal Clean Air Act Amendments. The list of pollutants to be regulated through accidental release prevention plans is not final. EPA intends to promulgate the 112(r) pollutants by late 1994. Ecology is open to comments regarding whether the 112(r) pollutants as well as additional substances ought to be included in future revisions to the rule.

8. Acceptable Source Impact Levels

The ASILs should remain restrictive notwithstanding the new health effects data used showing that it should be raised. gain, the theme of these comments is that regardless of the federal standards of protection the state should keep higher standards of protection of health and safety. This is in line with State Sovereignty of the health, safety, and welfare of its citizens. (Tulee, p.2, August 1993)

Ecology's Response: As mentioned above, the method of calculating or updating ASILs is not being revised during this rule revision effort. The process to update ASILs is identified in WAC 173-460-110 and has been used to update the ASILs. To be fair and legal, Ecology cannot pick and choose to apply the process only to certain substances. Ecology agrees with the commentor that the State of Washington may, in some cases, need to promulgate standards that are more stringent than federal standards in order to ensure adequate protection of human health and the environment in Washington. As EPA issues the federal MACT standards, Ecology will continue to consider whether and how Washington standards ought to depart from the federal standards.

9. Modeling versus Source Testing/Monitoring

Several of the listed compounds have annual ASILs in quantities which cannot be measured. It will be difficult to demonstrate that a specific concentration of a substance is harmful if the concentration of that substance cannot be determined. As a former stack sampler who worked with dispersion modelers and risk assessment specialists, I have a thorough understanding of the misuse of monitoring and source emissions data. In general, source test data can be verified to approximately plus or minus ten percent through the use of standardized and well-accepted QA/QC procedures such as reference standards, spikes, blanks, calibration, leak checks, etc. The gross manipulation of emissions data that occurs once the data is handed-off to the dispersion modelers and risk assessment specialists continues to amaze me. The source test crew is often blamed for poor QA/QC when the dispersion modelers and risk assessment specialists are unable to get the decimal in the proper place (to demonstrate a lack of adverse health affects from ambient concentrations at the property line). While the source test data is valid to plus or minus ten percent, the modelers and risk assessors are concerned about hypothetical orders of magnitude. The point of this diatribe is to establish that source testing and monitoring are far more reliable than modeling. As such, a source should not be prevented from using monitoring and source test data in support of a project. However, the quantities must be within detection/quantification limits and analytical sensitivities and the units in which a screening analysis is conducted must be realistic. As currently structured, WAC 173-460 tends to preclude the use of what cannot be contested as superior emissions testing and monitoring data, meanwhile pigeon-holing an applicant into using costly and speculative modeling analyses. Suggestions: Eliminate the use of all annual averages and use hourly and daily averages for all ASILs. Encourage monitoring and source testing of similar existing facilities as a basis for permitting rather than modeling. (Mrazek, p.2, August 1993)

Ecology's Response: The notice of construction procedures for new and modified sources is not being revised through this rule revision. While Ecology agrees with the commentor that many of the substances cannot be detected at the identified ASIL concentrations through source testing, the commentor's critique misinterprets both the applicability of the rule and the role of ASILs. It is important to recognize that this rule applies only to new and modified sources; in most cases a source test is not yet possible or not technologically feasible. In addition, ASILs are ambient levels and not stack emission amounts. This distinction is important. Thus Ecology will continue to use the new source review process for both criteria and toxic pollutants which allows an applicant to model residual emissions. Ecology believes, however, that an applicant must work together with the regulator to agree on modeling or emissions estimation methods before costly and speculative modeling analyses are carried out.

The commentor also suggests that Ecology eliminate the use of annual averages. Averaging times are selected on the basis of the toxic endpoint that an ASIL is based upon. As noted in Calabrese and Kenyon, Air Toxics and Risk Assessment, 1991, page 74,

“The guiding principle in selection of an appropriate averaging time is that it should correspond to the expected duration of exposure required for the manifestation of the endpoint of concern. Thus, longer averaging times should be used when chronic low-level exposure is of greatest concern, and shorter averaging times when short-term effects are most relevant. The principle is applied by both ACGIH and NIOSH in the recommendation of averaging times for TLVs and RELs, respectively, time-weighted averages are usually recommended for effects that are the result of cumulative damage occurring over a period of time, whereas ceiling limits are often recommended for effects that are expected to develop after only a short period of exposure (e.g., irritation). For purpose of this methodology, annual averaging times are recommended for ambient air level goals (AALGs) based on carcinogenicity, and 24-hour averaging times for AALGs based on other endpoints ...“

The carcinogenic health effects data is provided in annual concentrations and Ecology considers translation to daily and hourly averages inappropriate because concentrations would then be too low.

C. Specific Comments on WAC 173-460-020 Definitions

1. General Comments

When making the revisions of the definitions within the Washington Clean Air Act, it should be carefully noted that revisions to the name may also revise the meaning and interpretation of the definition. If the meaning or interpretation is changed as a result of the revision of the term itself, the proposal should also include the changes in the meaning. (Tulee, p.2, August 1993)

Ecology's Response: Ecology has endeavored to retain original meanings where it has made typographical corrections or other clarifications. Where Ecology has changed a definition e.g., to be consistent with the federal and Washington Clean Air Acts, it has tried to note the reason for the change.

2. WAC 173-460-020(14) — Definition of "Modification."

Several commentors suggested that Ecology change the definition of "Modification" under WAC 173-460-020(14) to create an exception for de minimis increases in emissions of toxic air pollutants. (Backes, p. 1-2, August 1993; Johnson, p.1, August 1993; Morrison, p.1, August 1993; Sistko, p.1-2, August 1993) The following comment is representative:

Acknowledging that Ecology is striving to concur with the statute, AWB is nevertheless concerned that the current reference to Section 7411, Title 42, USC is a misapplication of the term modification (in the New Source Performance Standard sense) to be used in an air toxics application. New Source Performance Standards exist for a limited number of air pollutants and are applied to specific sources which are listed in the implementing rules.

By applying this definition of modification in WAC 173-460, Ecology is labeling every change which increases emissions of any of nearly 700 TAP's as a modification regardless of size of increase or existence of an applicable performance standard. We suggest that Ecology refer to Section 7412, Title 42, USC to develop a definition of modification for sources of air toxics.

SUGGESTED REVISION:

WAC 173-460-020 Definitions

(14) “Modification” means any physical change in, or change in the method of operation of, a stationary source that increases the actual emissions of any toxic air contaminant emitted by such source more than a de minimis amount or that results in the emission of any toxic air contaminant not previously emitted by more than a de minimis amount. The term modification shall be construed consistent with the definition of modification in Section 7411 7412, Title 42, United States Code, and with rules implementing that section.

AWB believes that without this change, sources which hold WAC 173-401 air operating permits will not be afforded basic operating flexibility because 460 requires a T-BACT determination for every modification regardless of significance. (Backes, p.1-2, August 1993)

An additional commentor raised similar concerns, but suggested a different solution:

The definition of modification may be accurate in some applications, however its broad use in determining when new source review must be conducted or when an operating permit must be changed will have unworkable results. Amendments now pending in WAC 173-400 (General Regulations for Air Pollution Sources), apply this legislative definition to all sources however trivial. The State’s proposed definition mirrors one of several such definitions in the federal Clean Air Act which specifically governs only new major sources or significant modifications which increased hazardous air pollutants beyond federal de-minimis thresholds.

The State’s much broader application of this definition of modification will divert air quality improvement resources from major sources to minute emission sources. While industry has been repeatedly assured by WDOE and PSAPCA that they do not intend to require (and in fact could not handle) applications for very minor changes, failure to meet the letter of the law would make the source liable for citizen suits under the federal Clean Air Act. Therefore, we support changes to the definition of modification in the Washington Clean Air Act and then corresponding changes in WDOE regulations. To ensure consistency with the federal CAA, the following definition should remain as is until the State CAA is changed:

(14) Modification means any physical change in, or change in the method of operation of, a stationary source that increases the amount of any toxic air contaminant emitted by such source or that results in the emission of any toxic air contaminant not previously emitted. The term modification shall be construed consistent with the definition of modification in Section 7411, Title 42, United States Code, and with rules implementing that section. (Kimball, p.1-2, August 1993)

Ecology's Response: These comments raise two issues: (1) the appropriateness of the current definition of "modification" and (2) the possibility of establishing de minimis levels for review of new sources of air toxics. With respect to the first issue, the proposed language has been changed to be identical to the statutory definition of modification contained in RCW 70.94.030(14) with the exception that a sentence explaining that for purposes of this chapter, the term "air contaminant" will mean "toxic air contaminant" or "toxic air pollutant" as defined in WAC 173-460-020(20). Ecology will not change the reference from Section 7411 to Section 7412 as the commentor requests because the legislature referenced Section 7411, and we are not authorized to rewrite the statute through rulemaking. The new language follows:

"Modification" means any physical change in, or change in the method of operation of, a stationary source that increases the amount of any ((toxic)) air contaminant emitted by such source or that results in the emission of any ((toxic)) air contaminant not previously emitted. The term modification shall be construed consistent with the definition of modification in Section 7411, Title 42, United States Code, and with rules implementing that section. For purposes of this chapter, the term "air contaminant" shall mean "toxic air contaminant" or "toxic air pollutant" as defined in WAC 173-460-020(20).

With regard to the second issue, Ecology does not intend to adopt wholesale federal de minimis levels. These values are not being established for Washington's situation, but represent the least common denominator among all states. Ecology will not include a provision in Chapter 173-460 WAC creating a de minimis exception without stating what the de minimis levels are to be, as the commentor apparently would have us do by referencing rules implementing Section 7412, Title 42 of the United States Code (which is § 112 of the federal Clean Air Act). Reference to levels on which the EPA is working but that they have not yet promulgated is unhelpful: Ecology cannot constitutionally reference standards or levels not yet in existence, even if they are supposed to be developed by the EPA according to statute.

In addition, Ecology and local authorities have not traditionally used uniform threshold or de minimis levels with respect to new source review. Sources who wish to make changes to their facilities are evaluated on a case-by-case basis by the permitting authority to determine the applicability of this regulation to the specific change. Ecology is not aware that this has created significant difficulties for the regulated community. Early discussions between regulating engineers and the applicant should minimize potential problems.

Finally, in order to ease the administrative burden for those sources that will require operating permits, Ecology is evaluating and identifying activities considered to be insignificant for purposes of reporting emissions as part of the operating permit application. Although determined to be insignificant for purposes of the operating permit, the applicant must still go through the appropriate new source review for modifications that increase emissions or result in emissions not previously emitted. Ecology continues to believe it is important to identify all new or modified sources on the theory that the construction phase offers the best opportunity to control emissions.

3. **WAC 173-460-020(15) Definition of New Toxic Air Pollutant Source**

Several commentors suggested that the definition of “New toxic air pollutant source” apply based on when a source commenced construction rather than on whether construction of the new source would increase emissions of toxic air pollutants from that source or result in the emission of any toxic air pollutant not previously emitted. (Backes, p.2, August 1993; Johnson, p.1, August 1993; Kimball, p.2, August 1993; Morrison, p.1, August 1993; Sistko, p.2, August 1993) The following comment is representative:

173-460-020(15) New Toxic Air Pollutant Source. This definition is functionally no different than the definition of modification. The Federal Clean Air Act defines “new” sources in terms of time not emissions. The reference to Section 112 in sub (b) does this correctly. The definition in sub (a) does not contain a time test and should be rewritten along the lines of:

Any stationary source of toxic air pollutants, the construction or modification of which is commenced after the effective date of this regulation; . . .

Our concern is that as currently written, sub (a) could apply to projects constructed several years ago. (Sistko, p.2, August 1993)

Ecology's Response: Ecology revised the definition to that contained in the proposed rule in order to be consistent with the Washington Clean Air Act and with Chapter 173-400 WAC, General Air Regulations. As with any regulation which Ecology writes or revises, the requirements do not apply until the regulation has been adopted and becomes effective. Consequently, Ecology believes it is unnecessary to include the date the regulation becomes effective in the definition.

4. WAC 173-460-020(20) Definition of "Toxic Air Pollutant"

Item 14, modification definition, the term toxic air contaminant is used in the definition. This term is a new term and is not consistent with the term used for definition Item 20, toxic air pollutant (TAP). Recommend replacing "toxic air contaminant" with toxic air pollutant. (Holt, p.1, August, 1993)

Ecology's Response: Ecology has revised WAC 173-460-020(20) to accommodate the commentor's suggestion as follows:

(20) "Toxic air pollutant (TAP)" or "toxic air contaminant" means any Class A or Class B toxic air pollutant listed in WAC 173-460-150 and WAC 173-460-160....

D. Specific Comments on WAC 173-460-030 Requirements, Applicability, and Exemptions.

1. WAC 173-450-030(2) Exempt sources.

Item 2, exempt sources, does not list an exemption for substances regulated by WAC 173-480. Recommend adding a new item to read: "(f) Emissions of substances regulated by WAC 173-480 are exempt from the requirements of this chapter when in compliance with WAC 246-247." (Holt, p.1, August, 1993)

Ecology's Response: Ecology is not revising the list of exempted sources with this rule revision effort. However, it is important to recognize that radionuclides are not substances with identified ASILs in the regulation. Consequently, exempting sources emitting radionuclide emissions from the requirements of Chapter 173-460 WAC is a moot point. A new or modified source that emits a toxic air pollutant in addition to a radionuclide does need to comply with the new source requirements identified in the regulation for the toxic air pollutant emissions. Ecology coordinates with the

Department of Health regarding new source review for such sources; a Memorandum of Understanding between the two departments governs this coordination.

E. Specific Comments on WAC 173-460-040 New Source Review.

1. WAC 173-460-040(1) Applicability.

173-460-040(1)(c) NWPPA supports this change to make the rule identical to the statutory language. (Morrison, p.2, August 1993)

Ecology's Response: Comment noted.

2. WAC 173-460-040(4) Requirements for new toxic air pollutant sources.

In AWB's initial comments on WAC 173-460 (February 6, 1991) we requested the Department to develop guidance on making T-BACT determinations for agency personnel and the public. We suggested a committee of agency staff and personnel from regulated businesses to develop a process for determining T-BACT. Since that time we have been told that T-BACT may range from simple work practices (place lids on cans) to multi-million dollar control equipment (steam stripping and incineration). Given this wide spectrum of possibilities, we again suggest that Ecology develop guidance on the T-BACT process. (Backes, p.3, August 1993)

Ecology's Response: In response to AWB's initial request, Ecology and PSAPCA prepared guidance on compliance with the rule; this guidance has been made available for purchase. A BACT review depends upon the applicant, the location, meteorological conditions, etc. and by its specific nature must be applied on a case-by-case basis. Ecology recognizes that TBACT/BACT is evolving and constantly changing. Consequently, Ecology intends to update the guidance at appropriate intervals to take into account new information and/or state/local experience in implementing this provision.

WAC 173-460-040(4)(c)

173-460-040(4)(c) NWPPA supports the proposed deletion of an existing source standard from a new source rule. (Morrison, p.2, August 1993)

Ecology's Response: Ecology made this change with the advice and input of the Air Toxics Advisory Committee.

F. Specific Comments on WAC 173-460-060 Abrasive Blasting

AWB members have expressed concern that the abrasive blasting requirements will not be achievable for all situations. Large narrow items such as poles and support beams may not allow booth doors to be closed during blasting operations. Not all structural items lend themselves to tarpaulin enclosures. By changing the requirements in subsections (a) and (b) from "should" to "shall" these situations could be construed as violations. The current language ("should") is sufficiently clear as to the best methods for abrasive blasting. AWB asked that Ecology not narrow the requirement simply to create noncompliance situations. One final question is which TAP is being controlled by this requirement? (Backes, p.2, August 1993)

Ecology's Response: Ecology changed references to "should" throughout the rule to "shall" at the request of AWB because use of the word "should" has legal import very different from use of the word "shall." "Should" implies that a source does not have to comply with a requirement which was not the intent of the original rule language. Ecology believes that the revised language of WAC 173-460-060(b) allows an applicant to use appropriate methods available to control emissions from abrasive blasting including the situations mentioned by the commentor. Consequently, Ecology believes that use of "shall" is appropriate for this section. Emissions that result from abrasive blasting may include lead and other toxic substances contained in the paint that is being removed.

G. Specific Comments on WAC 173-460-080 Demonstrating Ambient Impact Compliance.

WAC 173-460-080(1)

173-460-080(1) When applying for a notice of construction under WAC 173--460-040, the owner or operator of a new toxic air pollutant source which is ~~likely~~ will increase TAP emissions shall demonstrate that emissions from the source are sufficiently low to protect human health and safety from potential carcinogenic and/or other toxic effects. (Kimball, p.2, August 1993)

Ecology's Response: Ecology has declined to make the suggested change, as the certainty required by the word "will" is impossible in the case of a not-yet-constructed project.

H. Specific Comments on WAC 173-460-090 Second Tier Analysis.

WAC 173-460-090(1) Applicability,

One commentor suggested the following change:

173-460-090 (1)(a) The owner or operator who cannot demonstrate class A or class B TAP source compliance with WAC 173-460-070 and 173-460-080 using an acceptable source impact level analysis as provided in WAC 173-460-080(2), may submit a petition requesting the local authority or ecology perform a second tier analysis evaluation to determine a means of compliance with WAC 173-460-070 and 173-460-080 by establishing allowable emissions for the source. Petitions for second tier analysis evaluation shall be submitted to local authority or ecology if ecology has jurisdiction over the source. (Kimball, p.2, August 1993)

Ecology's Response: The suggested change is outside the scope of the rule-making effort undertaken by this rule revision. Ecology determined during the original rulemaking effort that a second tier review warranted involvement and approval by Ecology. This requirement was designed to ensure that the necessary resources are available to evaluate the risk and health assessments and determine that remaining risk is sufficiently low to allow an applicant to proceed with a proposed project. Given the low number of Tier II analyses necessary in the two years since this regulation became effective and the special expertise required to perform these analyses, Ecology does not believe that decentralizing these responsibilities is appropriate.

I. Specific Comments on WAC 173-460-100 Request for Risk Management Decision.

1. WAC 173-460-100(4) Additional methods to reduce toxic air pollutants.

173-460-100(4). The phrase "...especially exposure of that portion..." should read "...especially exposure in that portion...". This is simply in keeping with the Committee's search for clarity. (Sistko, p.2, August 1993)

Ecology’s Response: Ecology has retained the language as originally proposed, as the suggested language changes the meaning of the provision in unacceptable ways. The suggested change might be interpreted to limit inappropriately the scope and focus of the analysis to a certain geographical area. Instead, the inquiry is to be focused on “that portion of the community subject to the greatest additional risk,” i.e., the maximum exposed individual regardless of his or her or their geographic proximity to the source.

2. WAC 173-460-100(5) Public Involvement.

Two commentors (Backes, p.3, August 1993; Sistko, p.2, August 1993) suggested the following changes:

AWB believes that once a completed risk management decision application is received, the Department should be able to initiate public notice and comment within 30 days. We therefore support the language stating “Ecology shall initiate public notice and comment...”. (Backes, p.3, August 1993)

Ecology’s Response: Ecology recognizes that receipt of a completed risk management decision application from a source will be all that is necessary before Ecology and the source can initiate the public notice and comment period and change the language from “will endeavor to” to “will” to indicate Ecology’s intent to begin the public involvement process once a completed application is received. However, given the legal effect of using the word “shall,” Ecology has retained the proposed language in order to avoid rendering illegal the risk management decision process because of some unforeseen, extraordinary situation where Ecology may need additional time to evaluate the risk management decision application or initiate the public involvement process.

J. Specific Comments on WAC 173-460-110 Acceptable Source Impact Levels.

1. WAC 173-460-110(2) Threshold-based acceptable source impact levels for Class B TAPS.

AWB supports the effort to update the ASIL list to reflect current understanding and to coordinate WAC 173-460-150 and WAC 173-460-160 with the Federal Clean Air Act 112(b) list of Hazardous Air Pollutants. We also support the development of the ASIL Master Tables and Guidance. We are concerned that

subsection (2) does not allow the Department to exercise any judgment in setting ASIL's for B-TAP's if an EPA inhalation reference concentration exists. A great amount of controversy accompanies many of the values contained in IRIS. AWB urges Ecology to formalize the review process described in WAC 173-460-120 and establish the Science Advisory Board called for by RCW 70.94.039 (Backes, p.3, August 1993)

Ecology's Response: Ecology relies upon EPA's efforts to review data and to determine inhalation reference concentrations. Ecology believes that it is an appropriate policy to use available inhalation reference concentrations to establish ASIL5 for Class B toxics. These values are developed by teams of toxicologists at the Environmental Protection Agency. The methodologies and policies used to develop individual values are consistent with those used by the National Academy of Sciences in their evaluations of hazardous substances. Given the quality of these scientific reviews, Ecology does not believe that frequent reviews of EPA's values in the context of ASILs represents an efficient use of agency resources.

While Ecology does not believe that case-by-case reevaluations of EPA values is appropriate when establishing screening values, such reviews may be appropriate at later stages in the process. Consequently, the rule does provide Ecology with the discretion to consider whether use of a particular inhalation reference concentration is appropriate during Tier II analyses. WAC 173-460-090(4)(a) states:

. . .A second tier analysis evaluation may be requested when a source wishes to more accurately characterize risks, to justify risks greater than acceptable source impact levels, or to otherwise modify assumptions to more accurately represent risks. Risks may be more accurately characterized by utilizing updated EPA unit risk factors, inhalation reference concentrations, or other EPA approved or recognized methods. .

Finally, WAC 173-460-120(1)(b) states that “. . . [a] complete review [of the ASILs] shall be made at least once every three years. . .“ Exceptions to the use of inhalation reference doses may be identified as part of such reviews and individual ASILs revised accordingly. Given the quality of EPA's reviews, however, Ecology believes that such situations will arise very infrequently. [For discussion of related issues, see the earlier response to the request for a Science Advisory Board.]

K. Specific Comments on WAC 173-460-150 Class A Toxic Air Pollutants: Known, Probable and Potential Human Carcinogens and Acceptable Source Impact Levels.

1. Nickel and Nickel Compounds

One commentor expressed concerns over Ecology's proposal to establish an ASIL for "nickel and nickel compounds". He recommended that (1) Ecology focus efforts on those substances which cause adverse health effects and (2) clarify what compounds are considered when estimating fence-line concentrations for comparison to the ASIL:

It is recognized that several metals cause severe health effects. However, the use of an ASIL for a "metal and metal compounds" as in the case of chrome and nickel is completely ludicrous. This continued reckless and arbitrary regulation causes me great embarrassment to be associated with air pollution control efforts in Washington State. It is well known that chrome-6 is not equivalent to chrome-3 in toxicity. However, my favorite example is that of "nickel and nickel compounds. All nickel compounds are not created equal. One form of nickel which has been identified as a potential health problem is nickel subsulfide. Other forms of nickel were determined to be much less toxic. These determinations were made in conjunction with the EPA-sponsored efforts to characterize toxic metal emissions from sewage sludge incinerators. The means in which the ASILs are set up makes all forms of nickel equal in toxicity. Clearly, this concept is invalid and erroneous. The continued use of this sweeping characterization of all forms being equal in toxicity is ludicrous. Nickel subsulfide may have been shown to be carcinogenic, but other forms in which nickel may be emitted may not be. Suggestion: Establish ASILs only for substances which are known to cause adverse health impacts.

An interpretive void is created when the "metal and metal compounds" clause is used. When one determines the quantity of material at the fence-line to compare to the ASIL, does that fence-line quantity include just the weight of the nickel in the nickel-containing compounds or does that include the entire weight of the nickel-containing compounds? Suggestion, add clarifying language to the regulations. (Mrazek, p.3, August 1993)

Ecology's Response: It is important to note that nickel and nickel compounds were not added as new ASILs, but were on Table I and Table III of the original WAC 173-

460-150 with an ASIL based on OSHA's TLV. The ASIL for nickel and nickel compounds is being updated. Ecology intends to keep nickel and nickel compounds in the rule to ensure that we address consistently federally mandated substances.

However, Ecology agrees that it is important to distinguish between different metal species which have widely varying toxicities. Such an approach has been utilized for chromium compounds where the rule distinguishes between hexavalent and trivalent chromium.

As a general principle, Ecology agrees that it would also be appropriate to establish separate ASILs for elemental nickel and specific nickel compounds. EPA has identified nickel refinery dust, soluble nickel salts, nickel subsulfide, and nickel carbonyl as being substances of concern. However, unlike hexavalent and trivalent chromium, extensive information is not available for all nickel compounds. Consequently, Ecology has elected to revise the listing for "nickel and nickel compounds" to clarify that the proposed ASIL of 2.1×10^{-3} ug/m³ only applies to nickel refinery dust and nickel subsulfide. This ASIL is based upon the carcinogenic information for nickel subsulfide. Ecology believes it is also appropriate to apply this value to nickel refinery dust in that the inhalation unit risks are very similar. EPA lists quantitative inhalation unit risk estimates for nickel refinery dust (i.e. 2.4×10^{-6} per ug/m³) and nickel subsulfide (i.e. 4.8×10^{-6} per ug/m³). The ASILs for these particular substances are therefore 4.2×10^{-3} ug/m³ for nickel refinery dust and 2.1×10^{-3} ug/m³ for nickel subsulfide. Given that nickel refinery dust contains a significant amount of nickel subsulfide (30-60%) and the uncertainties associated with quantitative risk assessment, Ecology believes that from a regulatory perspective the ASIL values of these substances are virtually identical. Consequently, in the case of nickel refinery dust and nickel subsulfide, lumping these substances under a "nickel" classification in Table I and II of WAC 173-460-150 appears to be reasonable. For measurement purposes, the concentrations of nickel subsulfide and nickel refinery dust could reasonably be used interchangeably.

Available health information suggests that the ASILs for soluble nickel salts and nickel carbonyl should be significantly different from those of nickel refinery dust and nickel subsulfide. Consequently, Ecology agrees that it would be appropriate to specify ASILs for each of these compounds and to measure each substance separately. However, only limited quantitative information is currently available. Nickel carbonyl, while noted as a probable animal carcinogen on IRIS (i.e. EPA classification B2), does not have any quantitative carcinogenic risk information which would permit derivation of an ASIL. The TLV for nickel carbonyl is 0.12 mg/m³ leading to an ASIL of 0.4 ug/m³. However, this TLV is provisional and is currently

scheduled for review. Soluble nickel salts have not been evaluated for carcinogenicity, however, a provisional TLV of 0.1 mg/rn³ has been proposed by OSHA which would equate to an ASIL of 0.33 ug/m³. EPA is evaluating the carcinogenicity of both nickel carbonyl and soluble nickel salts, and quantitative information could lead to lower ASILs.

Given the ongoing reviews by EPA, Ecology has elected to defer establishing ASILs for nickel salts and nickel carbonyl to a future rulemaking.

2. Suggested Changes to Table I, Class A Toxic Air Pollutants

Table I, Class A toxic air pollutants (TAPs), the following pollutants are listed in the tables, for which they are not federally enforceable or listed as a hazardous air pollutant (HAP). These pollutants are inconsistent with the introduction section on “proposal changes the following existing rules,” which states that substances were added in order to be consistent with new requirements of the federal Clean Air Act (CAA) Amendments of 1990:

Class A

Furazolidone
Methyl azoxymethanol-B
D-glucosiduronic acid

(Holt, p.2, August, 1993)

Class B

Benzo(a)anthracene

Ecology’s Response: Benzo(a)anthracene should be listed only as a Class A pollutant in Table 1. Ecology has corrected this error. Furazolidone was originally listed in Table 1 of WAC 173-460-150 as Nitrofurans Furazolidone without a CAS number. Upon review of the data, Ecology determined that Furazolidone was inappropriately listed together with Nitrofurans and so separated Furazolidone and listed it in the table under its CAS number, 67-45-8. Nitrofurans has been identified by itself and with Furium, a trade name for nitrofurans, without CAS numbers because nitrofurans are a group. The original rule identified incorrectly Methylazoxymethanol & acetate which should be Methyl azoxymethl acetate, CAS #592-62-1. With this correction, Methyl azoxymethanol-B-D-glucosiduronic acid has been deleted.

3. 1,4-Dichloro-2-butene

Table II, Class A TAPS, a CAS number is lacking on the table for 1,4-Dichloro-2-butene. The CAS number is 764-41-0. Recommend adding this number to the table. (Holt, p.2, August, 1993)

Ecology's Response: Ecology agrees with the comment and has incorporated this change in the final rule.

4. Propylene Oxide

Table II, Class A TAPS, Propylene oxide is listed as a Class A and a Class B TAPS. This pollutant is the only one listed on both tables. Was this pollutant included on both tables as a result of new health effects data? If so, it is not clear how modeling to determine body burdens for this pollutant should be performed and applied for the carcinogenic conditions or the toxic conditions. (Holt, p.2, August, 1993)

Ecology's Response: This pollutant should be listed only on Table A. Ecology has deleted propylene oxide from the list of Class B TAPs in the final rule. This same error was corrected for bromoform, p-dichlorobenzene, epichlorohydrin, and pentachlorophenol.

5. Chloroform

173-460-150(2) NWPPA, as stated in comments when this rule was first proposed, believes that the adoption of the ASIL for chloroform cannot be supported with scientific evidence. NWPPA provided to Ecology supporting scientific documents for an alternative ASIL and to date that information has never been considered by Ecology. Indeed, NWPPA was assured that the Science Advisory Board **required by law** would be available to consider such information. Ecology has neglected this important feature of the law and of its own rules. NWPPA again urges Ecology to convene the Science Advisory Board and use the expertise that such as institution can provide. (Morrison, p.2, August 1993)

Ecology's Response: Please see the earlier comment on Formation of the Science Advisory Board. Ecology believes, moreover, that the chloroform ASIL is well substantiated. It is scientifically based on the EPA's values and process for determining those values, including Scientific Advisory Board review at the federal level.

Ecology's Response: Ecology values PSAPCA's input and looks forward to working with them in future rule development efforts.

2. Changes to Class B Toxic Air Pollutants, Spelling

WAC 173-460-160, Class B TAPS, the following pollutants are misspelled. The correct spelling is included.

- a. Benzo(a)anthracene should read Benzo(a)anthracene.
- b. Isoocytol alcohol should read Isocytol alcohol.
- c. Silicon tetrahydride should read Silicon tetrahydride.
- d. Thallium, soluble compounds, Tl should read Thallium, soluble compounds, Tl.

(Holt, p.2, August, 1993)

Ecology's Response: Changes made.

3. Butane

Class B TAPS, Butane previously had an ASIL value of 6327.0. Number has been eliminated on proposed change. (Holt, p.2, August 1993).

Ecology's Response: The correction has been made and the ASIL added back in as 6300 consistent with the rounding protocol used to update the ASILs.

4. Chlorinated diphenyl oxide

Class B TAPS, the CAS number for Chlorinated diphenyl oxide should read 507321-63-8 instead of 57321-68-8. (Holt, p.2, August 1993)

Ecology's Response: Ecology has revised the CAS number for Chlorinated diphenyl oxide (also called hexachlorophenyl ether) to be 55720-99-5. -

5, o-Dichlorobenzene

Class B TAPS, 95-50-1 o-Dichlorobenzene should be added to the list to be consistent with the new requirements for HAPs in the CAA Amendments of 1990. (Holt, p.3, August 1993)