DEPARTMENT OF ECOLOGY
State of Washington

Decision-Making Documentation

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

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Publication and Contact Information

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Air Quality Program

Washington State Department of Ecology

Olympia, Washington

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Decision-Making Documentation

The purpose of this rulemaking is to update the list of toxic air pollutants in Chapter 173-460 WAC, Controls for New Sources of Toxic Air Pollution Sources, to reflect the latest, best available health effects information. This rule includes air quality permitting requirements for businesses that emit toxic air pollutants.

What we said we would do

In our July 18, 2018 rulemaking announcement, we said we would:

- Update the list of toxic air pollutants (TAPs).
- Recalculate
  - Acceptable source impact levels (ASILs).
  - Small quantity emission rates (SQERs).
  - De minimis emission values.
- Update the rule to support the changes described above.

Specifically, we said we intended to update the list of TAPs to:

- Add or subtract chemicals based on updated toxicity information available from the U.S. Environmental Protection Agency (EPA), California Office of Environmental Health Hazard Assessment (OEHHA), and Agency for Toxic Substances and Disease Registry (ATSDR). We based our list of toxic air pollutants on the inhalation toxicity values established by these three agencies.
- Review ammonium sulfate as a toxic air pollutant and its associated toxicity value. This is in response to a request from the Far West Agribusiness Association to remove ammonium sulfate from the list of toxic air pollutants.
- Evaluate whether the rule should continue to list criteria pollutants as toxic air pollutants.
- Evaluate whether to establish additional acceptable source impact levels for specific groups of chemicals with established toxic equivalency factors. This approach would consider mixtures of similar chemicals (i.e., dioxin-like compounds and carcinogenic polycyclic aromatic hydrocarbons) to be a single toxic air pollutant based on toxic equivalency.
- Revise the small quantity emission rates and de minimis values based on updates to the acceptable source impact levels and the use of the latest version of EPA's AERSCREEN air quality dispersion model.

- Evaluate the use of early life adjustment factors when deriving acceptable source impact levels for chemicals that are considered to cause cancer through a mutagenic mode of action. These chemicals may pose a greater risk to infants and children than is reflected in their toxicity value.

What we did

During the rulemaking development process, we held seven stakeholder meetings from August 2018 through March 2019. During those meetings, we discussed various topics related to updating the list of toxic air pollutants in WAC 173-460-150. This memo discusses each topic and our final decision.

Updating the list of toxic air pollutants (add or subtract chemicals)

The existing TAP list in WAC 173-460-150 contains 395 chemicals:

- Cancer-causing chemicals (year averaging period): 288
- Chemicals with 24-hour averaging period: 93
- Chemicals with 1-hour averaging period: 14

We used the same process from the 2009 rulemaking[1] to identify chemicals to add or remove from the list of toxic air pollutants:[2]

- The chemical must be listed in one or more of the acceptable data sources; and
- The chemical must have an associated inhalation toxicity value established to quantify human health risk and hazard.

Acceptable data sources that meet high standards for scientific credibility:

- EPA Integrated Risk Information system (IRIS).
- California Office of Environmental Health Hazard Assessment (OEHHA) reference exposure levels and cancer potency factors.
- Agency for Toxic Substances and Disease Registry (ATSDR) minimal risk levels.

By applying this process, the updated list of toxic air pollutants consists of 432 chemicals:

- Cancer-causing chemicals (year averaging period): 301
- Chemicals with 24-hour averaging period: 116

[1] Appendix B: Setting the Acceptable Source Impact Level, Small Quantity Emission Rates, and De Minimis Values in Patora, K. Final Cost Benefit Analysis Chapter 173-400 WAC and Chapter 173-401 WAC. May 2009. Publication no. 09-02-010.

[2] See "Methods to Update the List of Toxic Air Pollutants," August 2018 for more details on the process to update the list.

- Chemicals with 1-hour averaging period: 15

Table 1 summarizes the changes to the existing list of TAPs:

- Appendix A contains the proposed list of TAPs with associated ASIL, SQER, and de minimis emission value.[3]
- Tables 2 and 3 contain the nine removed TAPs and the reasons for their removal.
- Appendix B contains the 387 retained TAPs.
- Appendix C contains the 45 new TAPs.

Table 1: Changes to existing list of TAPs

Change	Current Table (# of TAPs)	Percentage	Proposed Table (# of TAPs)	Percentage
Retained TAPs	387	98	387	90
Removed TAPs	8	2	----	----
New TAPs	----	----	45	10
Total	395	100	432	100

We propose to remove eight TAPs for the reasons noted in Table 2.

Table 2: Removed TAPs

Chemical Common Name	CAS	Reason
5-Nitro-o-anisidine	99-59-2	Delisted by California
Ammonium sulfate	7783-20-2	Ecology approved petition for removal
Dibromochloromethane	124-48-1	Delisted by California
Melphalan hydrochloride	3223-07-2	Chemical does not meet TAP listing criteria (no unit risk factor)
Chromic acid	11115-74-5	Redundant – covered by Chromic(VI) acid
Chromium hexavalent: soluble, except chromic trioxide	----	Redundant – covered by Chromium(VI) & compounds, NOS
Pentabromodiphenyl ether	32534-81-9	Redundant – covered by Polybrominated diphenyl ethers (PBDEs) (Containing less than 10 bromine atoms). Not necessary to specify because PBDE MRL is non-specific.
Tetrabromodiphenyl ether	40088-47-9	Redundant – covered by Polybrominated diphenyl ethers (PBDEs) (Containing less than 10 bromine atoms). Not necessary to specify because PBDE MRL is non-specific.

[3] See also Annotated 2019 TAP Table May 2019 (Excel spreadsheet).

Chemicals considered but not added to the TAP list

Twelve chemicals met the listing criteria in "Updating the list of toxic air pollutants" section but we do not list them as TAPs in the proposed rule.[4] We do not include the five chemicals in Table 3 because they are redundant with a proposed TAP. We evaluated but did not include another group of seven chemicals in Table 4. Acetone is an industrial solvent, fuel oil no. 2 is undyed diesel fuel used as a home heating oil, and kerosene and four kerosene-based fuel are used as jet fuels. We did not include these chemicals because including them would result in more burden for the regulated facilities without providing added public health protection.

Table 3: Chemicals considered but not added to the TAP list - redundant

Chemical Common Name	CAS	Reason Why Redundant
Chromium(VI), chromic acid aerosol mist	18540-29-9	Covered by Chromic(VI) chromic acid
PBDE-99 [2,2',4,4',5-pentabromodiphenyl ether]	60348-60-9	Covered by Polybrominated diphenyl ethers (PBDEs) [Containing less than 10 bromine atoms]. The ASIL for PBDEs is based on ATSDRs minimal risk level. An inhalation MRL (or inhalation toxicity value) specific to PBDE-99 [2,2',4,4',5-pentabromodiphenyl ether] does not exist. The MRL does not specify individual PBDE congeners, only that they are "lower brominated."
Pentabromodiphenyl ether	32534-81-9	Covered by Polybrominated diphenyl ethers (PBDEs) [Containing less than 10 bromine atoms]. The ASIL for PBDEs is based on ATSDRs minimal risk level. An inhalation MRL (or inhalation toxicity value) specific to pentabromodiphenyl ether does not exist. The MRL does not specify individual PBDE congeners, only that they are "lower brominated."
Polybrominated diphenyl ethers (PBDEs)	32536-52-0	Covered by Polybrominated diphenyl ethers (PBDEs) [Containing less than 10 bromine atoms]. The ASIL for PBDEs is based on ATSDRs minimal risk level. An inhalation MRL (or inhalation toxicity value) specific to polybrominated diphenyl ethers does not exist. The MRL does not specify individual PBDE congeners, only that they are "lower brominated."
Selenium sulfide	7446-34-6	Covered by Selenium & selenium compounds (other than hydrogen selenide)

Table 4: Chemicals considered but not added to the TAP list

Chemical Common Name	CAS	Use
Acetone	67-64-1	Solvent
Fuel oil no. 2	68476-30-2	Home heating oil (dyed diesel fuel)
JP-4*	50815-00-4	U.S. Airforce aircraft fuel (phased out)

[4] The current TAP list does not include the insecticide malathion. We propose to include it as a new TAP because it meets the listing criteria, and the list contains other insecticides.

Chemical Common Name	CAS	Use
JP-5*	8008-20-6	Primary fuel used in U.S. Navy aircraft carriers (MIL-DTL-5624)
JP-7*	HZ0600-22-T	U.S. Air Force aircraft fuel (MIL-DTL-38219)
JP-8*	8008-20-6	U.S. Air Force military jet fuel (MIL-DTL-83133)
Kerosene	8008-20-6	Aviation fuel, heating fuel, solvent

* JP means jet propellant.

Acetone

We considered adding acetone as a TAP. Including acetone on the TAP list would have imposed more burden on businesses and permitting agencies. EPA promotes acetone as a Safer Choice[5] chemical because it is best in class for specific functions. EPA notes that acetone has a "low potential for harming either human health or the environment."[6] Including it as a TAP could have unintended consequences by disincentivizing the use of a chemical that we promote as a substitute for more harmful chemicals. Adding the chemical as a TAP does not align the level of review by an applicant and the permitting agency with the risk associated with the emissions from the project.

Fuels

We considered adding these fuels to the TAP list: fuel oil no. 2, kerosene, and the four kerosene-based jet fuels (JP-4, JP-5, JP-7, and JP-8). We did not include them because the rule already regulates the volatile TAPs that comprise each fuel.

- Gasoline and diesel fuel contain the TAPS such as benzene, toluene, xylenes, n-hexane, and naphthalene.
- According to ATSDR, jet fuel contains several different TAPs (e.g., benzene, toluene, ethylbenzene, xylene, naphthalene and others).[7,8] ATSDR establishes the minimal risk level for jet fuels based on the jet fuel mixture, rather than individual components. Using naphthalene as an example, consideration of these individual TAPs would likely be more stringent than an ASIL based on the jet fuel mixture that is the basis for the JP-8 minimal risk level.

Including these fuels would therefore be duplicative and provide no regulatory benefit.

[5] Refer to EPA's Safer Choice Standard and Criteria found at https://www.epa.gov/saferchoice/standard#tab-2.
[6] EPA Memorandum from Dan Rosenblatt to Lois Rossi, "Reassessment of One Exemption from the Requirement of a Tolerance for Acetone," June 13, 2005, page 2.
[7] ATSDR Jet Fuels JP-4 and JP-7 found at https://www.atsdr.cdc.gov/ToxProfiles/tp76-c3.pdf.
[8] ATSDR JP-5, JP-8 and Jet A-Fuels found at https://www.atsdr.cdc.gov/toxprofiles/tp121-c3.pdf.

Evaluation of ammonium sulfate

Ammonium sulfate is on the list of TAPs based on California OEHHA's acute reference exposure level for "sulfates." On July 25, 2017, Far West Agribusiness Association (Far West) petitioned Ecology to remove ammonium sulfate from the list of TAPs.[9] Far West contended that Ecology should not consider ammonium sulfate a TAP. As part of the current rulemaking, we agreed to evaluate the petition and supporting information provided by consultants for Simplot[10] and Two Rivers Terminal,[11] and existing literature around the short-term respiratory effects of ammonium sulfate. The McGregor Company[12] and Far West Agribusiness Association[13] also supported the removal of this chemical from the list.

We reviewed and considered:

- The basis for including ammonium sulfate on the existing list of TAPs.
- Information about potential health effects associated with inhalation of ammonium sulfate.
- Levels of short-term exposure that could pose mild adverse respiratory effects.
- Public health implications of removing ammonium sulfate from the list of TAPs.

Based on our review, we propose to remove ammonium sulfate from the TAP list because this action is not likely to result in increased hazards from new sources of air pollution.[14]

We formed this decision by the following key considerations:

- The primary study used to determine the reference level (which forms the basis for the ASIL) observed slight changes in airway function after exposure to sulfuric acid and ammonium bisulfate, but not after exposure to ammonium sulfate;
- Sulfates of greater acidity than ammonium sulfate appear to be more likely to cause short-term respiratory effects;
- Ammonium sulfate as a constituent of ambient particulate matter is not unequivocally known to be more toxic than other forms of particulate matter; and
- Existing regulations that address particulate matter emissions from new and existing sources likely address emissions of ammonium sulfate.

Removing ammonium sulfate from the list of TAPs would not likely result in an increase in short-term respiratory hazards from new sources of air pollution.

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[9] Lukins & Annis, Petition Letter from Far West Agribusiness requesting rulemaking to remove ammonium sulfate as a toxic air pollutant in WAC 173-460-150. July 25, 2017.
[10] Arcadis U.S., Inc. Technical Report Supporting Petition to Remove Ammonium Sulfate from the Toxic Air Pollutant List. Prepared for J.R. Simplot Company. December 7, 2018.
[11] Weeks, D. Comments by Two Rivers Terminal LLC. Submitted December 10, 2018.
[12] Morscheck, F. Email from The McGregor Company. January 8, 2019.
[13] Fitzgerald, J. Letter from Far West Agribusiness Association. January 16, 2019.
[14] Refer to the February 14, 2019 Memorandum "Petition to remove ammonium sulfate for the list of toxic air pollutants in WAC 173-460-150" for Ecology's response (Thursday, Feb. 21, 2019 stakeholder meeting).

Recalculation of ASILs

The ASIL for each chemical reflects the methodology in Figure 1 and the following major decision points. We decided that:

- We will derive ASIL values for pollutants in which inhalation toxicity values were available from EPA's Integrated Risk Information System (IRIS), California Office of Environmental Health Hazard Assessment (OEHHA), and Agency for Toxic Substances and Disease Registry (ATSDR) minimal risk levels.
- Each pollutant can have only one ASIL and one concentration averaging time.
- Each ASIL can have either a short-term value or a long-term value but not both.
- A short term ASIL can have a 1-hour or 24-hour averaging period.
- If a TAP has toxicity values based on cancer and non-cancer effects, we will set the ASIL based on cancer risk. We used this approach because the concentrations resulting in a lifetime increased cancer risk of one in one million are usually much lower than concentrations associated with non-cancer reference concentrations. We deviated from this approach for 2,4- and 2,6- toluene diisocyanates because the chronic reference exposure level is lower than a level that results in a one in a million lifetime cancer risk.
- We will account for children's susceptibility from early-life exposure to carcinogens.
- If more than one toxicity value is available for the same TAP, we will set the ASIL based on the most recently promulgated value.
- In deriving ASILs based on noncancerous effects, we gave preference to toxicity values based on chronic effects, followed by intermediate values, followed by acute values as shown in the formulas below. We deviated from the hierarchy for two chemicals:
    - Isoprophyl alcohol. We deviated from the hierarchy for isoprophyl alcohol because the 1-hour acute reference exposure level is lower than the chronic reference exposure level.
    - Sulfur dioxide. We deviated from the hierarchy for sulfur dioxide to maintain consistency with how the ASILs values are set for the other criteria pollutants.
- We will set ASILs based on chronic RELs, RfCs, and MRLs with 24-hour time weighted averages rather than with annual averages to reflect the decision of one ASIL value per TAP while ensuring that we would not overlook the acute effects of TAPs.
- If the data source does not provide an averaging period, we will set it at 24-hours.
- We will not use draft MRLs, RELs, URFs, or RfCs.
- We will convert an MRL from parts-per-billion (ppb) to micrograms per meter cubed ($\mu g/m^3$) assuming 20 degrees Celsius at 1 atmosphere pressure.
- We will round all values for emission rates and concentrations to two significant digits.
- We will establish the ASIL for diethyl and methyl mercury based on our evaluation of research and other available information.

We established an ASIL for each TAP using one of these three formulas.

Calculating ASIL values (annual averaging time)

ASIL = target cancer risk (1 in one million or 1 x 10^{-6}) divided by unit risk factor ($(\mu g/m^3)^{-1}$) times early life adjustment factor

Calculating ASIL values (24-hour averaging time)

ASIL = chronic reference concentration ($\mu g/m^3$), chronic reference exposure level ($\mu g/m^3$), or minimal risk level ($\mu g/m^3$)

Calculating ASIL values (1-hour averaging time)

ASIL = acute reference exposure level ($\mu g/m^3$)

The proposed amendments would modify ASILs for 150 TAPs (including new and removed TAPs). Nine percent of ASILs would increase (become less stringent), and 25 percent (including new TAPs) would decrease (become more stringent). ASILs for 66 percent of TAPs would not change under the proposed amendments (Table 5).

Table 5: Changes to ASILs

Changes	Proposed ASIL # of TAPs	Percentage
More stringent than existing value (value decreases)	67	15
Less stringent than existing value (value increases)	38*	9
No change	105	24
No change: value adjusted by significant digits	181	42
New TAP	45	10
Total	436	100

* Includes four removed TAPs in Table 2 not covered by a proposed TAP.

For more information on a specific TAP, refer to:

- Appendix D. Toxic Air Pollutants with a More Stringent ASIL
- Appendix E. Toxic Air Pollutants with a Less Stringent ASIL
- Appendix F. Toxic Air Pollutants with an Unchanged ASIL
- Appendix G. Toxic Air Pollutants with an Unchanged ASIL (adjusted by significant digit)

Other changes to specific ASILs include:

- Unchanged ASIL with different averaging period due to an error in the rule (Table 6).

- Significantly different ASILs due to an error in the rule (Table 7).
- Deviations to ASIL methodology (Table 8):
    - We based the ASIL for three toluene diisocyanates on a lower, more protective, non-cancer value rather than the cancer-causing value. We set the ASIL for all other TAPs based on cancer risk if a TAP has toxicity values based on cancer and non-cancer effects.
    - We based the ASIL for isopropyl alcohol on the 1-hour chronic reference exposure level rather than the 24-hour acute level because it was lower, more protective. The existing ASIL also reflects this deviation from the hierarchy so the proposed ASIL is unchanged from the existing ASIL.

Table 6: Unchanged ASIL with different averaging period

Chemical Common Name	CAS	Existing Averaging Period	Proposed Averaging Period
Acetonitrile	75-05-8	Year	24-hour

Table 7: TAPs with ASIL change due to error in existing rule

Chemical Common Name	CAS	Current ASIL	Proposed ASIL
4-Dimethylaminoazobenzene	60-11-7	76900	0.00077
Direct black 38	1937-37-7	47600	0.00048

Table 8: TAPs with ASIL that deviates from listing hierarchy

Chemical Common Name	CAS	Proposed ASIL ($\mu g/m^3$)	Proposed ASIL Averaging time	ASIL (based on hierarchy) ($\mu g/m^3$)	ASIL (based on hierarchy) Averaging time
Toluene diisocyanates (2,4- and 2,6-)	26471-62-5	0.0080	24-hr	0.091	Year
Toluene-2,4-diisocyanate	584-84-9	0.0080	24-hr	0.091	Year
Toluene-2,6-diisocyanate	91-08-7	0.0080	24-hr	0.091	Year
Isopropyl alcohol	67-63-0	3200	1-hr	7.0E+03	24-hour

Evaluation of excluding criteria pollutants as toxic air pollutants

The four TAPs nitrogen dioxide (NO_2), sulfur dioxide (SO_2), carbon monoxide (CO), and lead (Pb) are also criteria pollutants. EPA set National Ambient Air Quality Standards or NAAQS for these pollutants and they are regulated under Chapter 173-400 WAC. They are included as TAPs because they meet the TAP listing criteria. The ASIL for NO_2, SO_2, and CO reflects a one-hour

averaging period because these are non-cancer causing chemicals. Lead is a cancer-causing chemical so its ASIL reflects a year averaging period.[15]

We reviewed the NAAQS status and compared it to TAP levels.[16] We are retaining these chemicals as TAPs because they meet the listing criteria and including them provides additional consideration of potential public health impacts that NAAQS compliance alone does not provide.

Evaluation of the use of early life adjustment factors

Current ASIL values do not reflect an early life adjustment factor for cancer risk. We relied on three EPA documents to determine which chemicals act through a mutagenic mode of action:

- Integrated Risk Information System (IRIS)
    - Chemical assessment summary for vinyl chloride[17]
    - Chemical assessment summary for trichlorethylene[18]
- Regional Screening Levels (RSLs) – User's Guide[19]
- Supplemental Guidance for Assessing Susceptibility from Early-life Exposure to Carcinogens[20]

We adjusted the ASIL value for the 31 TAPs in Table 9 based on EPA's early-life adjustment factor:[21]

- 1.66 to account for increased susceptibility among infants and children exposed to mutagenic chemicals.
- 1.22 for trichloroethylene because the mutagenic mode of action applies to kidney tumors, but not for other cancers included in the derivation of the unit risk factor.

While EPA lists vinyl chloride as a mutagen, we did not adjust the ASIL because the toxicity value already accounts for continuous lifetime exposure from birth.

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[15] "Concise Explanatory Statement and Responsiveness Summary for the Adoption of WAC 173-400-110, General Regulations for Air Pollution Sources and Chapter 173-460 WAC, Controls for New Sources of Toxic Air Pollutants," May 19, 2009, Publication number 09-02-008, pages 3, 40, and 41.
[16] See Gary Palcisko "Criteria Air Pollutants as Toxic Air Pollutants" PowerPoint presentation, Nov. 16, 2018.
[17] Date last revised 8/7/2000. Available at URL: https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/1001_summary.pdf.
[18] Date last revised 9/28/2011. Available at URL: https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/0199_summary.pdf.
[19] EPA Risk Assessment. Regional Screening Levels (RSLs) – Users Guide. November 2018. Available at URL: https://www.epa.gov/risk/regional-screening-levels-rsls-users-guide#mutagens.
[20] U.S. EPA (Environmental Protection Agency). (2005). Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens. U.S. Environmental Protection Agency, Washington, DC, EPA/630/R-03/003F, 2005. Available at URL: https://www.epa.gov/sites/production/files/2013-09/documents/childrens_supplement_final.pdf.
[21] See February 14, 2019 Memorandum "Use of early-life adjustment factors in deriving acceptable source impact levels for a subset of toxic air pollutants," February 14, 2019 Memorandum "Recommendations for Updating WAC 173-460-150," and October 10, 2019 PowerPoint presentation "Toxicity Equivalence (TEQ) & Relative Potency."

Table 9: TAPs adjusted by an early-life adjustment factor

	Chemical Common Name	CAS
1	1,2,3-Trichloropropane	96-18-4
2	1,2-Dibromo-3-chloropropane	96-12-8
3	3-Methylcholanthrene	56-49-5
4	4,4'-Methylenebis(2-chloroaniline) (MOCA)	101-14-4
5	7,12-Dimethylbenz[a]anthracene	57-97-6
6	Acrylamide	79-06-1
7	Barium chromate	10294-40-3
8	Benz(a)anthracene	56-55-3
9	Benzidine	92-87-5
10	Benzo(a)pyrene	50-32-8
11	Benzo(b)fluoranthene	205-99-2
12	Bnezo(k)fluoranthene	207-08-9
13	Chloroprene	126-99-8
14	Chromic trioxide	1333-82-0
15	Chromic(VI) acid	7738-94-5
16	Chromium(VI) & compounds, NOS	----
17	Chrysene	218-01-9
18	Coke oven emissions	----
19	Dibenz(a,h)anthracene	53-70-3
20	Dichloromethane (methylene chloride)	75-09-2
21	Ethyl carbamate (urethane)	51-79-6
22	Ethylene oxide	75-21-8
23	Indeno(1,2,3-cd)pyrene	193-39-5
24	Lead chromate	7758-97-6
25	Lead chromate oxide	18454-12-1
26	N-Nitrosodiethylamine	55-18-5
27	N-Nitrosodimethylamine	62-75-9
28	N-nitroso-N-ethylurea	759-73-9
29	N-nitroso-N-methylurea	684-93-5
30	Safrole	94-59-7
31	Trichloroethylene	79-01-6

Review of the existing ASIL for diethyl and methyl mercury

Due to concerns with the neurotoxicity of diethyl and methyl mercury, the 2009 rulemaking established the ASIL, SQER, and de minimis emission value for these TAPs at a number that is

extremely close to zero. This value requires regulatory review of every project with any emissions of these chemicals.[22]

We reviewed the health impacts assessments of several Hanford cleanup projects that have potential emissions of methyl mercury, but we have not received any project applications for diethyl mercury emissions. We also evaluated methyl mercury research and other available information.[23] Prenatal brain development is sensitive to very small amounts of methyl and diethyl mercury. Maternal inhalation of contaminated air exposes the fetus via placental transfer from the maternal bloodstream. Based on our evaluation of this material, we propose an ASIL of 0.14 ($\mu g/m^3$) for diethyl and methyl mercury.

Since we are proposing a new ASIL, we also propose to establish the SQER and de minimis emission value for diethyl and methyl mercury using the same methodology applied to the other TAPs.

Evaluation of ASILs for groups of chemicals (toxicity equivalency)

We considered adding steps to address the toxic equivalence of mixtures of TAPs. We based this on EPA's determination that an individual TAP does not adequately consider the impact of mixtures of dioxin-like compounds and carcinogenic polycyclic aromatic hydrocarbons.[24]

This alternative would have been more burdensome without necessarily meeting the goals and objectives of the authorizing law to a greater degree. Adding more steps after finding a value in a table when there is more than one of these chemicals conflicts with the rulemaking goal of establishing one value for each TAP in the look-up table. By having a single set of comparison values, the proposed amendments facilitate straightforward, scientifically based compliance. Listing individual chemicals with sufficient supporting information as TAPs with appropriate screening values allows facilities to make individual comparisons.

Revision of the small quantity emission rate modeling parameters

We back calculated the 2009 SQER value for each ASIL through screening level air dispersion modeling using SCREEN 3 Version 96043. Since EPA no longer supports this model, we updated the modeling using AERSCREEN Version 16216. Rather than use one conservative scenario, we examined several possible source and building configurations likely to simulate a

[22] "Concise Explanatory Statement and Responsiveness Summary for the Adoption of WAC 173-400-110, General Regulations for Air Pollution Sources and Chapter 173-460 WAC, Controls for New Sources of Toxic Air Pollutants," May 19, 2009, Publication number 09-02-008.
[23] "A Dimethyl Mercury Inhalation Risk Screening Concentration," Matt Kadlec, October 10, 2018. PowerPoint presentation. See also "A Dimethyl Mercury Inhalation Risk Screening Concentration for Public Health Protection," poster presentation, International Society of Exposure Science Conference, October 28 - November 1, 2012, Seattle, Washington.
[24] Refer to Palcisko, G. Toxicity Equivalence (TEQ0 & relative potency. October 10, 2018 PowerPoint. Also February 14, 2019 Memorandum by Palcisko, G., and Guilfoil, E. Deriving ASILs for mixtures of dioxin-like compounds and mixtures of polycyclic aromatic hydrocarbon.

realistic yet conservative scenario that would apply anywhere.[25] Table 10 provides the 2019 modeling parameters.

Table 10: SQER modeling parameters

Questions in the dispersion model	Parameters reflect	Parameters reflect
Model?	AERSCREEN Version 16216	AERSCREEN Version 16216
Source?	Point	Volume
Emission rate?	1 gram per second	1 gram per second
Stack height?	10, 10.5, and 11	N/A
Stack diameter?	0.33 meters	N/A
Exit velocity?	1, 5, and 10 meters per second	N/A
Stack temperature? (assume ambient)	Same as ambient	Same as ambient
Receptors above ground?	Yes, 1.5 meters	Yes, 1.5 meters
Urban or rural?	Rural	Rural
Building downwash?	Yes	N/A[1]
Building height?	10 meters	10 meters
Minimum horizontal dimension?	10 meters	10 meters
Maximum horizontal dimension?	20 meters	20 meters
Complex terrain?	No	No
Meteorology?	Full	Full
Use discrete distances?	Yes, 5 to 50 meters in 5 m increments	Yes, 5 to 50 meters in 5 m increments
Terrain height above stack base?	No	No

Recalculation of the small quantity emission rates

We ran 124 model runs of AERSCREEN using the various modeling parameters in Table 11. Using the median of all of the concentrations from the 124 model runs resulted in 4282 µg/m³. We consider this a robust and sufficiently conservative estimate of the concentration resulting from an emission rate of 1 gram per second.

We used the following calculations, and the conversion factors in Tables 11 and 12 to establish SQER values for the year, 24-hour and 1-hour ASIL. Applying the value of 4282 µg/m³ results in SQERs for 99.5 percent of the TAPs that are more stringent (17 percent lower than current values). Only diethyl and methyl mercury are less stringent.

Convert Year ASIL to Pounds per Year SQER

SQER (pound/year) =

$$\left[\frac{\text{Annual ASIL } \left(\frac{\mu g}{m^3}\right) \text{x } 60 \left(\frac{sec}{min}\right) \text{x } 60 \left(\frac{min}{hr}\right) \text{x } 8760 \left(\frac{hr}{yr}\right)}{4282 \left(\frac{\mu g}{m^3}\right) \text{x } 0.1 \text{ x } 453.6 \left(\frac{g}{lb}\right)}\right] \Big/ 1 \left(\frac{g}{sec}\right)$$

[25] See January 16, 2019 Memorandum "Updating the Small Quantity Emission Rates," January 23, 2019 PowerPoint "Small Quantity Emission Rates and De Minimis Emission Values," and March 4, 2019 Memorandum "Recommendations for Updating Chapter 173-460 WAC."

Convert 24-hour ASIL to Pounds per Day SQER

SQER (pound/day) =

$$\left[\frac{24-\text{hr ASIL}\ \left(\frac{\mu g}{m^3}\right) \text{x } 60\ \left(\frac{\text{sec}}{\text{min}}\right) \text{x } 60\ \left(\frac{\text{min}}{\text{hr}}\right) \text{x } 24\ \left(\frac{\text{hr}}{\text{day}}\right)}{4282\ \left(\frac{\mu g}{m^3}\right) \text{x } 0.6 \text{ x } 453.6\ \left(\frac{g}{lb}\right)}\right] \Big/ 1\ \left(\frac{g}{sec}\right)$$

Convert 1-hour ASIL to Pounds per Hour SQER

SQER (pound/hour) =

$$\left[\frac{1-\text{hr ASIL}\ \left(\frac{\mu g}{m^3}\right) \text{x } 60\ \left(\frac{\text{sec}}{\text{min}}\right) \text{x } 60\ \left(\frac{\text{min}}{\text{hr}}\right)}{4282\ \left(\frac{\mu g}{m^3}\right) \text{x } 453.6\ \left(\frac{g}{lb}\right)}\right] \Big/ 1\ \left(\frac{g}{sec}\right)$$

Convert ppm to µg/m3

$$Y\ \left(\frac{\mu g}{m^3}\right) = \frac{(\text{X ppm})(\text{molecular weight})}{24.45}\ x\ 1000$$

Table 11: SQER conversion factors

Calculation	Carcinogenic TAP	Non-carcinogenic TAP	Acute reference exposure level
Averaging period	Year	24-hour	1-hour
Emission unit	Grams/second	Grams/second	Grams/second
Formula	ASIL/(4282*0.1)	ASIL/(4282*0.6)	ASIL/4282
Result	Pounds/year	Pounds/day	Pounds/hour

Table 12: AERSCREEN conversion factors

Convert from	Convert to	Multiply hourly value by
1-hour average	1-hour or 3-hour average	1
1-hour average	8-hour average	0.9
1-hour average	24-hour average	0.6
1-hour average	Annual average	0.1

Recalculation of the de minimis emission values

De minimis emission values are trivial levels of emissions below which an air permit is not required. After evaluating two alternatives to establish de minimis (de minimis equal to SQER, and SQER divided by 10), we retained the current structure.[26] That is, the rule sets de minimis values 20 times lower that the SQER (SQER/20), except for criteria pollutants. 98.6 percent of

[26] Ibid. Also January 17, 2019 Memorandum "Establishing the Small Quantity Emission Rate as the De Minimis Emission Value," and Ecology 460 Rulemaking Stakeholder Meeting Summary, January 23, 2019 (revised).

TAPs have values that are more stringent; 0.5 percent have less stringent values; and less than one percent remain the same (Table 13). We discuss the exception for criteria pollutants in more detail below.

Table 13: Changes to de minimis emission values

Change	# of TAPs	Percentage
More stringent than existing value (value decreases)	426	98.6
Less stringent than existing value (value increases)*	2	0.5
No change (includes adjustment by significant digits)**	4	0.9
Total	432	100

* Diethyl and methyl mercury

** Nitrogen dioxide, sulfur dioxide, carbon monoxide, and lead & compounds, NOS

Exception - criteria pollutants

We retained the current de minimis emission values for nitrogen dioxide, sulfur dioxide, carbon monoxide, and lead based on the 2009 rulemaking decision. That rulemaking established a single de minimis emissions value for criteria pollutants that applies to the permitting provisions in two complementary rules: Chapter 173-400 WAC and Chapter 173-460 WAC. Without translating the de minimis emission rates in WAC 173-400-110(5) into 1-hour values for WAC 173-460-150, most projects with a combustion component would not qualify for the de minimis exemption because the values in the air toxics rule are considerably lower.[27]

Updating the rule to support the rule changes

The existing rule varies in the number of significant digits used for emission rates and concentrations. We round all values to two-significant digits in the table (WAC 173-460-150) and propose to specify the number of the number of significant digits of emissions rates (i.e., de minimis and SQERs) and concentrations (i.e., ASILs and modeled ambient impact) in WAC 173-460-040(1), -080(2)(a) and -80(2)(b). We also update language in the rule to use the acronym “TAP” instead of toxic air pollutant.

[27] “Concise Explanatory Statement and Responsiveness Summary for the Adoption of WAC 173-400-110, General Regulations for Air Pollution Sources and Chapter 173-460 WAC, Controls for New Sources of Toxic Air Pollutants,” May 19, 2009, Publication number 09-02-008.

Appendices

Appendix A.
Proposed Table of ASILs, SQERs, and De Minimis Emission Values

The following table contains the proposed acceptable source impact level (ASIL), small quantity emission rate (SQER), and de minimis emission value for each of the 432 TAPs. Underlined text (and in red) indicates a new chemical or new information. NOS means not otherwise specified. This applies to situations where emission factors for a group of pollutants is reported, but specific isomers, congeners, or chemicals are not reported.

Chemical Common Name (Underlined (red) means new chemical or information)	**CAS**	**Averaging Period**	**ASIL** ($\mu g/m^3$)	**SQER** (lb/averaging period)	**De Minimis** (lb/averaging period)
1,1,1,2-Tetrachloroethane	630-20-6	year	0.14	22	1.1
1,1,1,2-Tetrafluoroethane	811-97-2	24-hr	8.0E+04	5900	3.0E+02
1,1,1-Trichloroethane (methyl chloroform)	71-55-6	24-hr	5.0E+03	370	19
1,1,2,2-Tetrachloroethane	79-34-5	year	0.017	2.8	0.14
1,1,2-Trichloroethane (vinyl trichloride)	79-00-5	year	0.063	1.0E+01	0.51
1,1-Dichloroethane (ethylidene dichloride)	75-34-3	year	0.63	1.0E+02	5.1
1,1-Dichloroethylene (1,1-DCE)	75-35-4	24-hr	2.0E+02	15	0.74
1,1-Difluoroethane	75-37-6	24-hr	4.0E+04	3000	150
1,1-Dimethylhydrazine	57-14-7	24-hr	0.50	0.037	0.0019
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	39001-02-0	year	9.1E-05	0.015	0.00074
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9	year	9.1E-05	0.015	0.00074
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	67562-39-4	year	2.6E-06	0.00043	2.1E-05
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	35822-46-9	year	2.6E-06	0.00043	2.1E-05
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	55673-89-7	year	2.6E-06	0.00043	2.1E-05
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	70648-26-9	year	2.6E-07	4.3E-05	2.1E-06
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	39227-28-6	year	2.6E-07	4.3E-05	2.1E-06
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	57117-44-9	year	2.6E-07	4.3E-05	2.1E-06
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	57653-85-7	year	2.6E-07	4.3E-05	2.1E-06
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	72918-21-9	year	2.6E-07	4.3E-05	2.1E-06
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	19408-74-3	year	2.6E-07	4.3E-05	2.1E-06

Chemical Common Name (Underlined (red) means new chemical or information)	**CAS**	**Averaging Period**	**ASIL** (µg/m³)	**SQER** (lb/averaging period)	**De Minimis** (lb/averaging period)
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	57117-41-6	year	9.1E-07	0.00015	7.4E-06
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	40321-76-4	year	2.6E-08	4.3E-06	2.1E-07
1,2,3-Trichloropropane	96-18-4	24-hr	0.30	0.022	0.0011
1,2,3-Trimethylbenzene	526-73-8	24-hr	6.0E+01	4.4	0.22
1,2,4-Trimethylbenzene	95-63-6	24-hr	6.0E+01	4.4	0.22
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	year	0.00032	0.052	0.0026
1,2-Dichloropropane (propylene dichloride)	78-87-5	year	0.10	16	0.81
1,2-Dimethylhydrazine	540-73-8	year	6.3E-06	0.0010	5.1E-05
1,2-Diphenylhydrazine (hydrazobenzene)	122-66-7	year	0.0040	0.65	0.032
1,2-Epoxybutane	106-88-7	24-hr	2.0E+01	1.5	0.074
1,3,5-Trimethylbenzene	108-67-8	24-hr	6.0E+01	4.4	0.22
1,3-Butadiene	106-99-0	year	0.033	5.4	0.27
1,3-Dichloropropene	542-75-6	year	0.25	41	2.0
1,3-Propane sultone	1120-71-4	year	0.0014	0.24	0.012
1,4-Dichlorobenzene	106-46-7	year	0.091	15	0.74
1,4-Dioxane	123-91-1	year	0.20	32	1.6
1,6-Dinitropyrene	42397-64-8	year	5.5E-05	0.0089	0.00045
1,8-Dinitropyrene	42397-65-9	year	0.00055	0.089	0.0045
1-[(5-Nitrofurfurylidene)-amino]-2-imidazolidinone	555-84-0	year	0.0020	0.32	0.016
1-Amino-2-methylanthraquinone	82-28-0	year	0.023	3.8	0.19
1-Bromopropane	106-94-5	24-hr	1.0E+02	7.4	0.37
1-Chloro-1,1-difluoroethane	75-68-3	24-hr	5.0E+04	3700	190
1-Nitropyrene	5522-43-0	year	0.0055	0.89	0.045
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	60851-34-5	year	2.6E-07	4.3E-05	2.1E-06
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	57117-31-4	year	9.1E-08	1.5E-05	7.4E-07
2,3,7,8-Tetrachlorodibenzofuran (TcDF)	51207-31-9	year	2.6E-07	4.3E-05	2.1E-06
2,3,7,8-Tetrachlorodibenzo-p-dioxin & related compounds, NOS	----	year	2.6E-08	4.3E-06	2.1E-07
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1746-01-6	year	2.6E-08	4.3E-06	2.1E-07
2,3-Dichloropropene	78-88-6	24-hr	9.2	0.68	0.034
2,4,6-Trichlorophenol	88-06-2	year	0.32	52	2.6
2,4-Diaminoanisole	615-05-4	year	0.15	25	1.2
2,4-Diaminoanisole sulfate	39156-41-7	year	0.27	44	2.2

Chemical Common Name (Underlined (red) means new chemical or information)	**CAS**	**Averaging Period**	**ASIL** (µg/m³)	**SQER** (lb/averaging period)	**De Minimis** (lb/averaging period)
2,4-Diaminotoluene (2,4-toluene diamine)	95-80-7	year	0.00091	0.15	0.0074
2,4-Dinitrotoluene	121-14-2	year	0.011	1.8	0.091
2-Acetylaminofluorene	53-96-3	year	0.00046	0.075	0.0038
2-Amino-3-methyl-9H-pyrido[2,3-b]indole	68006-83-7	year	0.0029	0.48	0.024
2-Amino-3-methylimidazo-[4,5-f]quinoline	76180-96-6	year	0.0025	0.41	0.020
2-Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazol	712-68-5	year	0.00022	0.035	0.0018
2-Aminoanthraquinone	117-79-3	year	0.064	1.0E+01	0.52
2-Chloroacetophenone	532-27-4	24-hr	0.030	0.0022	0.00011
2-Hexanone	591-78-6	24-hr	3.0E+01	2.2	0.11
2-Methyl-1-nitroanthraquinone	129-15-7	year	0.00083	0.14	0.0068
2-Methylphenol (o-cresol)	95-48-7	24-hr	6.0E+02	44	2.2
2-Naphthylamine	91-59-8	year	0.0020	0.32	0.016
2-Nitrofluorene	607-57-8	year	0.055	8.9	0.45
2-Nitropropane	79-46-9	24-hr	2.0E+01	1.5	0.074
3,3'-Dichlorobenzidine	91-94-1	year	0.0029	0.48	0.024
3-Amino-9-ethylcarbazole hydrochloride	6109-97-3	year	0.045	7.4	0.37
3-Chloro-2-methyl-1-propene	563-47-3	year	0.025	4.1	0.20
3-Methylcholanthrene	56-49-5	year	9.6E-05	0.016	0.00078
3-Methylphenol (m-cresol)	108-39-4	24-hr	6.0E+02	44	2.2
4,4'-Diaminodiphenyl ether	101-80-4	year	0.025	4.1	0.20
4,4'-Methylenebis(2-chloroaniline) (MOCA)	101-14-4	year	0.0014	0.23	0.011
4,4'-Methylenebis(2-methylaniline)	838-88-0	year	0.0038	0.62	0.031
4,4'-Methylenebis(N,N'-dimethyl)aniline	101-61-1	year	0.077	12	0.62
4,4'-Methylenedianiline	101-77-9	year	0.0022	0.35	0.018
4,4'-Methylenedianiline dihydrochloride	13552-44-8	year	0.0022	0.35	0.018
4,4-Thiodianiline	139-65-1	year	0.00023	0.038	0.0019
4-Aminobiphenyl	92-67-1	year	0.00017	0.027	0.0014
4-Chloro-o-phenylenediamine	95-83-0	year	0.22	35	1.8
4-Dimethylaminoazobenzene	60-11-7	year	0.00077	0.12	0.0062
4-Methylphenol (p-cresol)	106-44-5	24-hr	6.0E+02	44	2.2
4-Nitropyrene	57835-92-4	year	0.0055	0.89	0.045
5-Methylchrysene	3697-24-3	year	0.00055	0.089	0.0045
5-Nitroacenaphthene	602-87-9	year	0.016	2.6	0.13
6-Nitrochrysene	7496-02-8	year	5.5E-05	0.0089	0.00045

Chemical Common Name (Underlined (red) means new chemical or information)	**CAS**	**Averaging Period**	**ASIL** (µg/m³)	**SQER** (lb/averaging period)	**De Minimis** (lb/averaging period)
7,12-Dimethylbenz[a]anthracene	57-97-6	year	8.5E-06	0.0014	6.9E-05
7H-Dibenzo[c,g]carbazole	194-59-2	year	0.00055	0.089	0.0045
A-alpha-c(2-amino-9h-pyrido[2,3-b]indole)	26148-68-5	year	0.0087	1.4	0.071
Acetaldehyde	75-07-0	year	0.37	6.0E+01	3.0
Acetamide	60-35-5	year	0.050	8.1	0.41
Acetonitrile	75-05-8	24-hr	6.0E+01	4.4	0.22
Acrolein	107-02-8	24-hr	0.35	0.026	0.0013
Acrylamide	79-06-1	year	0.0060	0.98	0.049
Acrylic acid	79-10-7	24-hr	1.0	0.074	0.0037
Acrylonitrile	107-13-1	year	0.0034	0.56	0.028
Actinomycin D	50-76-0	year	4.0E-07	6.5E-05	3.2E-06
Alar (daminsozide)	1596-84-5	year	0.20	32	1.6
Aldrin	309-00-2	year	0.00020	0.033	0.0017
Allyl chloride	107-05-1	year	0.17	27	1.4
Amitrole	61-82-5	year	0.0037	0.60	0.030
Ammonia	7664-41-7	24-hr	5.0E+02	37	1.9
Ammonium bisulfate	7803-63-6	1-hr	120	0.22	0.011
Aniline	62-53-3	year	0.63	1.0E+02	5.1
Antimony trioxide	1309-64-4	24-hr	0.20	0.015	0.00074
Aramite	140-57-8	year	0.12	19	0.94
Arsenic & inorganic arsenic compounds, NOS	----	year	0.00030	0.049	0.0025
Arsine	7784-42-1	24-hr	0.015	0.0011	5.6E-05
Asbestos (fibers/cubic centimeter)	1332-21-4	year	4.3E-06	0.00071	3.5E-05
Auramine	492-80-8	year	0.0040	0.65	0.032
Azaserine	115-02-6	year	0.00032	0.052	0.0026
Azathioprine	446-86-6	year	0.0020	0.32	0.016
Azobenzene	103-33-3	year	0.032	5.2	0.26
Barium chromate	10294-40-3	year	2.0E-05	0.0032	0.00016
Benz[a]anthracene	56-55-3	year	0.0055	0.89	0.045
Benzene	71-43-2	year	0.13	21	1.0
Benzidine	92-87-5	year	4.3E-06	0.00070	3.5E-05
Benzo[a]pyrene	50-32-8	year	0.0010	0.16	0.0082
Benzo[b]fluoranthene	205-99-2	year	0.0055	0.89	0.045
Benzo[j]fluoranthene	205-82-3	year	0.0055	0.89	0.045
Benzo[k]fluoranthene	207-08-9	year	0.0055	0.89	0.045
Benzyl chloride	100-44-7	year	0.020	3.3	0.17
Benzyl violet 4B	1694-09-3	year	0.18	28	1.4

Chemical Common Name (Underlined (red) means new chemical or information)	**CAS**	**Averaging Period**	**ASIL** (µg/m³)	**SQER** (lb/averaging period)	**De Minimis** (lb/averaging period)
Beryllium & compounds, NOS	----	year	0.00042	0.068	0.0034
Beryllium oxide	1304-56-9	year	0.00042	0.068	0.0034
Beryllium sulfate	13510-49-1	year	1.2E-06	0.00019	9.4E-06
beta-Butyrolactone	3068-88-0	year	0.0034	0.56	0.028
beta-Propiolactone	57-57-8	year	0.00025	0.041	0.0020
Bis(2-chloroethyl) ether	111-44-4	year	0.0014	0.23	0.011
Bis(chloromethyl) ether	542-88-1	year	7.7E-05	0.012	0.00062
Boron & compounds, NOS	----	24-hr	3.0E+02	22	1.1
Bromobenzene	108-86-1	24-hr	6.0E+01	4.4	0.22
Bromodichloromethane	75-27-4	year	0.027	4.4	0.22
Bromoform	75-25-2	year	0.91	150	7.4
Bromomethane (methyl bromide)	74-83-9	24-hr	5.0	0.37	0.019
Butylated hydroxyanisole	25013-16-5	year	18	2800	140
C.I. basic red 9 monohydrochloride	569-61-9	year	0.014	2.3	0.11
Cadmium & compounds, NOS	----	year	0.00024	0.039	0.0019
Caprolactam	105-60-2	24-hr	2.2	0.16	0.0082
Captafol	2425-06-1	year	0.023	3.8	0.19
Captan	133-06-2	year	1.5	250	12
Carbon disulfide	75-15-0	24-hr	8.0E+02	59	3.0
Carbon monoxide	630-08-0	1-hr	23000	43	1.1
Carbon tetrachloride	56-23-5	year	0.17	27	1.4
Carbonyl sulfide	463-58-1	24-hr	1.0E+01	0.74	0.037
Cerium oxide	1306-38-3	24-hr	0.90	0.067	0.0033
Chlorambucil	305-03-3	year	7.7E-06	0.0012	6.2E-05
Chlordane	57-74-9	year	0.010	1.6	0.081
Chlordecone	143-50-0	year	0.00022	0.035	0.0018
Chlorendic acid	115-28-6	year	0.038	6.2	0.31
Chlorinated paraffins	108171-26-2	year	0.040	6.5	0.32
Chlorine	7782-50-5	24-hr	0.15	0.011	0.00056
Chlorine dioxide	10049-04-4	24-hr	0.60	0.044	0.0022
Chloroalkanes C10-13 (chlorinated paraffins)	85535-84-8	year	0.040	6.5	0.32
Chlorobenzene	108-90-7	24-hr	1.0E+03	74	3.7
Chlorobenzilate	510-15-6	year	0.032	5.2	0.26
Chlorodifluoromethane (Freon 22)	75-45-6	24-hr	5.0E+04	3700	190
Chloroethane (ethyl chloride)	75-00-3	24-hr	3.0E+04	2200	110
Chloroform	67-66-3	year	0.043	7.1	0.35
Chloromethane (methyl chloride)	74-87-3	24-hr	9.0E+01	6.7	0.33

Chemical Common Name (Underlined (red) means new chemical or information)	**CAS**	**Averaging Period**	**ASIL** (µg/m³)	**SQER** (lb/averaging period)	**De Minimis** (lb/averaging period)
Chloromethyl methyl ether	107-30-2	year	0.0014	0.24	0.012
Chloropicrin	76-06-2	24-hr	0.40	0.030	0.0015
Chloroprene	126-99-8	year	0.0020	0.33	0.016
Chlorothalonil	1897-45-6	year	1.1	180	9.1
Chlorozotocin	54749-90-5	year	1.4E-05	0.0024	0.00012
Chromic trioxide	1333-82-0	year	7.7E-06	0.0013	6.3E-05
Chromic(VI) acid	7738-94-5	year	9.1E-06	0.0015	7.4E-05
Chromium(III), insoluble particulates, NOS	----	24-hr	5.0	0.37	0.019
Chromium(III), soluble particulates, NOS	----	24-hr	0.10	0.0074	0.00037
Chromium(VI) & compounds, NOS	----	year	4.0E-06	0.00065	3.3E-05
Chrysene	218-01-9	year	0.055	8.9	0.45
Cinnamyl anthranilate	87-29-6	year	0.77	120	6.2
Cobalt	7440-48-4	24-hr	0.10	0.0074	0.00037
Coke oven emissions	----	year	0.00097	0.16	0.0079
Copper & compounds	----	1-hr	1.0E+02	0.19	0.0093
Cresols (mixture), including m-cresol, o-cresol, p-cresol	1319-77-3	24-hr	6.0E+02	44	2.2
Cumene	98-82-8	24-hr	4.0E+02	3.0E+01	1.5
Cupferron	135-20-6	year	0.016	2.6	0.13
Cyclohexane	110-82-7	24-hr	6.0E+03	440	22
Cyclophosphamide (anhydrous)	50-18-0	year	0.0059	0.96	0.048
Cyclophosphamide (hydrated)	6055-19-2	year	0.0063	1.0	0.051
D & C red no. 9	5160-02-1	year	0.67	110	5.4
Dacarbazine	4342-03-4	year	7.1E-05	0.012	0.00058
Dantron	117-10-2	year	0.045	7.4	0.37
Di(2-ethylhexl)phthalate	117-81-7	year	0.42	68	3.4
Diazinon	333-41-5	24-hr	1.0E+01	0.74	0.037
Dibenz[a,h]acridine	226-36-8	year	0.0055	0.89	0.045
Dibenz[a,h]anthracene	53-70-3	year	0.00050	0.082	0.0041
Dibenz[a,j]acridine	224-42-0	year	0.0055	0.89	0.045
Dibenzo[a,e]pyrene	192-65-4	year	0.00055	0.089	0.0045
Dibenzo[a,h]pyrene	189-64-0	year	5.5E-05	0.0089	0.00045
Dibenzo[a,i]pyrene	189-55-9	year	5.5E-05	0.0089	0.00045
Dibenzo[a,l]pyrene	191-30-0	year	5.5E-05	0.0089	0.00045
Dichlorodiphenyldichloroethane (DDD)	72-54-8	year	0.014	2.4	0.12
Dichlorodiphenyldichloroethylene (DDE)	72-55-9	year	0.010	1.7	0.084
Dichlorodiphenyltrichloroethane (DDT)	50-29-3	year	0.010	1.7	0.084

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Dichloromethane	75-09-2	year	6.0E+01	9800	490
Dichlorvos (DDVP)	62-73-7	year	0.012	2.0	0.098
Dieldrin	60-57-1	year	0.00022	0.035	0.0018
Diesel engine exhaust, particulate	**----**	year	0.0033	0.54	0.027
Diethanolamine	111-42-2	24-hr	3.0	0.22	0.011
Diethyl mercury	627-44-1	24-hr	0.14	0.010	0.00052
Diethylstilbestrol	56-53-1	year	1.0E-05	0.0016	8.1E-05
Diglycidyl resorcinol ether	101-90-6	year	0.0020	0.33	0.017
Dihydrosafrole	94-58-6	year	0.077	12	0.62
Dimethyl carbamoyl chloride	79-44-7	year	0.00027	0.044	0.0022
Dimethylvinylchloride	513-37-1	year	0.077	12	0.62
Direct black 38	1937-37-7	year	0.00048	0.077	0.0039
Direct blue 6	2602-46-2	year	0.00048	0.077	0.0039
Direct brown 95	16071-86-6	year	0.00053	0.085	0.0043
Disperse blue 1	2475-45-8	year	0.77	120	6.2
Disulfoton	298-04-4	24-hr	0.20	0.015	0.00074
Epichlorohydrin	106-89-8	year	0.043	7.1	0.35
Estradiol 17B	50-28-2	year	9.1E-05	0.015	0.00074
Ethyl benzene	100-41-4	year	0.40	65	3.2
Ethyl carbamate	51-79-6	year	0.0021	0.34	0.017
Ethylene dibromide (EDB, 1,2-Dibromoethane)	106-93-4	year	0.0017	0.27	0.014
Ethylene dichloride (EDC, 1,2-Dichloroethane)	107-06-2	year	0.038	6.2	0.31
Ethylene glycol	107-21-1	24-hr	4.0E+02	3.0E+01	1.5
Ethylene glycol monobutyl ether	111-76-2	24-hr	82	6.1	0.30
Ethylene glycol monoethyl ether (2-Ethoxyethanol)	110-80-5	24-hr	7.0E+01	5.2	0.26
Ethylene glycol monoethyl ether acetate	111-15-9	24-hr	3.0E+02	22	1.1
Ethylene glycol monomethyl ether (2-Methoxyethanol)	109-86-4	24-hr	6.0E+01	4.4	0.22
Ethylene glycol monomethyl ether acetate	110-49-6	24-hr	9.0E+01	6.7	0.33
Ethylene oxide	75-21-8	year	0.00020	0.033	0.0016
Ethylene thiourea	96-45-7	year	0.077	12	0.62
Ethyleneimine	151-56-4	year	5.3E-05	0.0085	0.00043
Ferric sulfate	10028-22-5	1-hr	120	0.22	0.011
Fluorides (flouride containing chemicals), NOS	----	24-hr	13	0.96	0.048
Fluorine gas F_2	7782-41-4	24-hr	16	1.2	0.059

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Formaldehyde	50-00-0	year	0.17	27	1.4
Furmecyclox	60568-05-0	year	0.12	19	0.94
Furylfuramide	3688-53-7	year	0.014	2.4	0.12
Glu-P-1	67730-11-4	year	0.00071	0.12	0.0058
Glu-P-2	67730-10-3	year	0.0025	0.41	0.020
Glutaraldehyde	111-30-8	24-hr	0.080	0.0059	0.00030
Guthion (azinphos-methyl)	86-50-0	24-hr	1.0E+01	0.74	0.037
Gyromitrin	16568-02-8	year	0.00034	0.056	0.0028
HC blue 1	2784-94-3	year	0.067	11	0.54
Heptachlor	76-44-8	year	0.00077	0.12	0.0062
Heptachlor epoxide	1024-57-3	year	0.00038	0.062	0.0031
Heptachlorodibenzo-p-dioxin, NOS	37871-00-4	year	2.6E-06	0.00043	2.1E-05
Hexachlorobenzene	118-74-1	year	0.0022	0.35	0.018
Hexachlorobutadiene	87-68-3	year	0.045	7.4	0.37
Hexachlorocyclohexane	608-73-1	year	0.00091	0.15	0.0074
Hexachlorocyclohexane, alpha-	319-84-6	year	0.0013	0.21	0.011
Hexachlorocyclohexane, beta-	319-85-7	year	0.0023	0.38	0.019
Hexachlorocyclohexane, gamma- (lindane)	58-89-9	year	0.0032	0.52	0.026
Hexachlorocyclopentadiene	77-47-4	24-hr	0.20	0.015	0.00074
Hexachlorodibenzo-p-dioxins, NOS	34465-46-8	year	2.6E-07	4.3E-05	2.1E-06
Hexachloroethane	67-72-1	year	0.091	15	0.74
Hexamethylene diisocyanate	822-06-0	24-hr	0.070	0.0052	0.00026
Hydrazine	302-01-2	year	0.00020	0.033	0.0017
Hydrazine sulfate	10034-93-2	year	0.0012	0.19	0.0094
Hydrogen chloride	7647-01-0	24-hr	9.0	0.67	0.033
Hydrogen cyanide	74-90-8	24-hr	0.80	0.059	0.0030
Hydrogen fluoride	7664-39-3	24-hr	14	1.0	0.052
Hydrogen sulfide	7783-06-4	24-hr	2.0	0.15	0.0074
Indeno[1,2,3-cd]pyrene	193-39-5	year	0.0055	0.89	0.045
Isophorone	78-59-1	24-hr	2.0E+03	150	7.4
Isopropyl alcohol	67-63-0	1-hr	3.2E+03	5.9	0.30
Lasiocarpine	303-34-4	year	0.00045	0.074	0.0037
Lead & compounds, NOS	----	year	0.083	14	1.0E+01
Lead acetate	301-04-2	year	0.013	2.0	0.10
Lead chromate oxide	18454-12-1	year	4.2E-05	0.0069	0.00034
Lead chromate	7758-97-6	year	2.5E-05	0.0041	0.00020
Lead phosphate	7446-27-7	year	0.083	14	0.68

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Lead subacetate	1335-32-6	year	0.091	15	0.74
Libby amphipole asbestos (fibers/cubic centimeter)	----	year	5.9E-06	0.00096	4.8E-05
Malathion	121-75-5	24-hr	2.0E+01	1.5	0.074
Maleic anhydride	108-31-6	24-hr	0.70	0.052	0.0026
Manganese & compounds	----	24-hr	0.30	0.022	0.0011
Melphalan	148-82-3	year	2.7E-05	0.0044	0.00022
Mercury, elemental	7439-97-6	24-hr	0.030	0.0022	0.00011
Methanol	67-56-1	24-hr	2.0E+04	1500	74
Methyl ethyl ketone	78-93-3	24-hr	5.0E+03	370	19
Methyl isobutyl ketone (MIBK, hexone)	108-10-1	24-hr	3.0E+03	220	11
Methyl isocyanate	624-83-9	24-hr	1.0	0.074	0.0037
Methyl mercury (dimethylmercury)	593-74-8	24-hr	0.14	0.010	0.00052
Methyl methacrylate	80-62-6	24-hr	7.0E+02	52	2.6
Methyl methanesulfonate	66-27-3	year	0.036	5.8	0.29
Methyl tert-butyl ether	1634-04-4	year	3.8	620	31
Methylene diphenyl diisocyanate (MDI)	101-68-8	24-hr	0.080	0.0059	0.00030
Methylthiouracil	56-04-2	year	0.0091	1.5	0.074
Michler's ketone	90-94-8	year	0.0040	0.65	0.032
Mirex	2385-85-5	year	0.00020	0.032	0.0016
Mitomycin C	50-07-7	year	4.3E-07	7.1E-05	3.5E-06
Monocrotaline	315-22-0	year	0.00034	0.056	0.0028
m-Xylene	108-38-3	24-hr	220	16	0.82
N,N-Dimethylformamide	68-12-2	24-hr	8.0E+01	5.9	0.30
N-[4-(5-nitro-2-furyl)-2-thiazolyl]-acetamide	531-82-8	year	0.0023	0.38	0.019
Naphthalene	91-20-3	year	0.029	4.8	0.24
n-Hexane	110-54-3	24-hr	7.0E+02	52	2.6
Nickel & compounds, NOS	----	year	0.0038	0.62	0.031
Nickel acetate	373-02-4	year	0.012	1.9	0.094
Nickel carbonate	3333-67-3	year	0.0078	1.3	0.063
Nickel carbonate hydroxide	1346-39-3	year	0.0066	1.1	0.054
Nickel carbonyl	13463-39-3	year	0.011	1.8	0.091
Nickel chloride	7718-54-9	year	0.0085	1.4	0.069
Nickel hydroxide	12054-48-7	year	0.0061	0.99	0.049
Nickel nitrate hexahydrate	13478-00-7	year	0.019	3.1	0.15
Nickel oxide	1313-99-1	year	0.0049	0.79	0.040
Nickel oxide black	----	year	0.0054	0.88	0.044

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Nickel refinery dust	----	year	0.0042	0.68	0.034
Nickel subsulfide	12035-72-2	year	0.0021	0.34	0.017
Nickel sulfate	7786-81-4	year	0.010	1.6	0.082
Nickel sulfate hexahydrate	10101-97-0	year	0.017	2.8	0.14
Nickel sulfide	11113-75-0	year	0.0060	0.97	0.048
Nickelocene	1271-28-9	year	0.012	2.0	0.10
Nifurthiazole	3570-75-0	year	0.0015	0.25	0.012
Nitric acid	7697-37-2	1-hr	86	0.16	0.0080
Nitrilotriacetic acid	139-13-9	year	0.67	110	5.4
Nitrilotriacetic acid, trisodium salt monohydrate	18662-53-8	year	0.34	56	2.8
Nitrobenzene	98-95-3	year	0.025	4.1	0.20
Nitrofen	1836-75-5	year	0.043	7.1	0.35
Nitrofurazone	59-87-0	year	0.0027	0.44	0.022
Nitrogen dioxide	10102-44-0	1-hr	470	0.87	0.46
N-Methyl-N-nitro-N-nitrosoguanidine	70-25-7	year	0.00042	0.068	0.0034
N-Nitrosodiethanolamine	1116-54-7	year	0.0013	0.20	0.010
N-Nitrosodiethylamine	55-18-5	year	6.0E-05	0.010	0.00049
N-Nitrosodimethylamine	62-75-9	year	0.00013	0.021	0.0011
N-Nitrosodi-N-butylamine	924-16-3	year	0.00032	0.052	0.0026
N-Nitrosodi-N-propylamine	621-64-7	year	0.00050	0.081	0.0041
N-Nitrosodiphenylamine	86-30-6	year	0.38	62	3.1
N-Nitrosomorpholine	59-89-2	year	0.00053	0.085	0.0043
N-Nitroso-N-ethylurea	759-73-9	year	7.8E-05	0.013	0.00064
N-Nitroso-N-methylethylamine	10595-95-6	year	0.00016	0.026	0.0013
N-Nitroso-N-methylurea	684-93-5	year	1.8E-05	0.0029	0.00014
N-Nitroso-N-methylurethane	615-53-2	year	3.2E-05	0.0052	0.00026
N-Nitrosonornicotine	16543-55-8	year	0.0025	0.41	0.020
N-Nitrosopiperidine	100-75-4	year	0.00037	0.060	0.0030
N-Nitrosopyrrolidine	930-55-2	year	0.0017	0.27	0.014
o-Aminoazotoluene	97-56-3	year	0.00091	0.15	0.0074
o-Anisidine	90-04-0	year	0.025	4.1	0.20
o-Anisidine hydrochloride	134-29-2	year	0.032	5.2	0.26
o-Phenylphenate, sodium	132-27-4	year	1.2	190	9.4
o-Toluidine	95-53-4	year	0.020	3.2	0.16
o-Toluidine hydrochloride	636-21-5	year	0.027	4.4	0.22
o-Xylene	95-47-6	24-hr	220	16	0.82
Oleum	8014-95-7	1-hr	120	0.22	0.011
Ozone	10028-15-6	1-hr	180	0.33	0.020

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Parathion	56-38-2	24-hr	2.0E-05	1.5E-06	7.4E-08
PCB 105 (2,3,3',4,4'-pentachlorobiphenyl)	32598-14-4	year	0.00091	0.15	0.0074
PCB 114 (2,3,4,4',5-pentachlorobiphenyl)	74472-37-0	year	0.00091	0.15	0.0074
PCB 118 (2,3',4,4',5-pentachlorobiphenyl)	31508-00-6	year	0.00091	0.15	0.0074
PCB 123 (2,3',4,4',5'-pentachlorobiphenyl)	65510-44-3	year	0.00091	0.15	0.0074
PCB 126 (3,3',4,4',5-pentachlorobiphenyl)	57465-28-8	year	2.6E-07	4.3E-05	2.1E-06
PCB 156 (2,3,3',4,4',5-hexachlorobiphenyl)	38380-08-4	year	0.00091	0.15	0.0074
PCB 157 (2,3,3',4,4',5'-hexachlorobiphenyl)	69782-90-7	year	0.00091	0.15	0.0074
PCB 167 (2,3',4,4',5,5'-hexachlorobiphenyl)	52663-72-6	year	0.00091	0.15	0.0074
PCB 169 (3,3',4,4',5,5'-hexachlorobiphenyl)	32774-16-6	year	9.1E-07	0.00015	7.4E-06
PCB 189 (2,3,3',4,4',5,5'-heptachlorobiphenyl)	39635-31-9	year	0.00091	0.15	0.0074
PCB 77 (3,3',4,4'-tetrachlorobiphenyl)	32598-13-3	year	0.00026	0.043	0.0021
PCB 81 (3,4,4',5-tetrachlorobiphenyl)	70362-50-4	year	9.1E-05	0.015	0.00074
p-Chloro-o-toluidine	95-69-2	year	0.013	2.1	0.11
p-Cresidine	120-71-8	year	0.023	3.8	0.19
Pentachlorophenol	87-86-5	year	0.22	35	1.8
Perchloroethylene	127-18-4	year	0.16	27	1.3
Phenacetin	62-44-2	year	1.6	260	13
Phenazopyridine	94-78-0	year	0.020	3.3	0.17
Phenazopyridine hydrochloride	136-40-3	year	0.023	3.8	0.19
Phenesterin	3546-10-9	year	2.3E-05	0.0038	0.00019
Phenobarbital	50-06-6	year	0.0077	1.2	0.062
Phenol	108-95-2	24-hr	2.0E+02	15	0.74
Phenoxybenzamine	59-96-1	year	0.0011	0.18	0.0091
Phenoxybenzamine hydrochloride	63-92-3	year	0.0013	0.21	0.011
Phosgene	75-44-5	24-hr	0.30	0.022	0.0011
Phosphine	7803-51-2	24-hr	0.80	0.059	0.0030
Phosphoric acid	7664-38-2	24-hr	7.0	0.52	0.026
Phosphorus	7723-14-0	24-hr	2.0E+01	1.5	0.074
Phosphorus, white	12185-10-3	24-hr	2.0E+01	1.5	0.074
Phthalic anhydride	85-44-9	24-hr	2.0E+01	1.5	0.074
p-Nitrosodiphenylamine	156-10-5	year	0.16	26	1.3
Polybrominated biphenyls	----	year	0.00012	0.019	0.00094

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Polybrominated diphenyl ethers (PBDEs) (Containing less than 10 bromine atoms)	----	24-hr	6.0	0.44	0.022
Polychlorinated biphenyls (PCBs), NOS	1336-36-3	year	0.0018	0.28	0.014
Ponceau 3R	3564-09-8	year	0.22	35	1.8
Ponceau MX	3761-53-3	year	0.77	120	6.2
Potassium bromate	7758-01-2	year	0.0071	1.2	0.058
Procarbazine	671-16-9	year	0.00025	0.041	0.0020
Procarbazine hydrochloride	366-70-1	year	0.00029	0.048	0.0024
Propionaldehyde	123-38-6	24-hr	8.0	0.59	0.030
Propylene	115-07-1	24-hr	3.0E+03	220	11
Propylene glycol	57-55-6	24-hr	28	2.1	0.11
Propylene glycol dinitrate	6423-43-4	24-hr	0.28	0.021	0.0010
Propylene glycol monomethyl ether	107-98-2	24-hr	7.0E+03	520	26
Propylene oxide	75-56-9	year	0.27	44	2.2
Propylthiouracil	51-52-5	year	0.0034	0.56	0.028
p-Xylene	106-42-3	24-hr	220	16	0.82
Refractory ceramic fibers	----	24-hr	0.030	0.0022	0.00011
Reserpine	50-55-5	year	0.00032	0.052	0.0026
Safrole	94-59-7	year	0.0096	1.6	0.078
Selenide, hydrogen	7783-07-5	1-hr	5.0	0.0093	0.00046
Selenium & selenium compounds (other than hydrogen selenide)	----	24-hr	2.0E+01	1.5	0.074
Silica, crystalline (respirable)	7631-86-9	24-hr	3.0	0.22	0.011
Sodium hydroxide	1310-73-2	1-hr	8.0	0.015	0.00074
Sodium sulfate	7757-82-6	1-hr	120	0.22	0.011
Sterigmatocystin	10048-13-2	year	0.00010	0.016	0.00081
Streptozotocin	18883-66-4	year	3.2E-05	0.0052	0.00026
Styrene	100-42-5	24-hr	870	65	3.2
Styrene oxide	96-09-3	year	0.022	3.5	0.18
Sulfallate	95-06-7	year	0.019	3.0	0.15
Sulfur dioxide	7446-09-5	1-hr	660	1.2	0.46
Sulfur mustard	505-60-2	24-hr	0.020	0.0015	7.4E-05
Sulfur trioxide	7446-71-9	1-hr	120	0.22	0.011
Sulfuric acid	7664-93-9	24-hr	1.0	0.074	0.0037
Tertiary-butyl acetate	540-88-5	year	0.77	120	6.2
Tetrahydrofuran	109-99-9	24-hr	2.0E+03	150	7.4
Thioacetamide	62-55-5	year	0.00059	0.10	0.0048

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Thiourea	62-56-6	year	0.048	7.7	0.39
Titanium tetrachloride	7550-45-0	24-hr	0.10	0.0074	0.00037
Toluene	108-88-3	24-hr	5.0E+03	370	19
Toluene diisocyanates (2,4- and 2,6-)	26471-62-5	24-hr	0.0080	0.00059	3.00E-05
Toluene-2,4-diisocyanate	584-84-9	24-hr	0.0080	0.00059	3.00E-05
Toluene-2,6-diisocyanate	91-08-7	24-hr	0.0080	0.00059	3.00E-05
Toxaphene (polychlorinated camphenes)	8001-35-2	year	0.0029	0.48	0.024
trans-1,2-dichloroethene	156-60-5	24-hr	810	6.0E+01	3.0
trans-2[(dimethylamino)-methylimino]-5-[2-(5-nitro-2-furyl)-vinyl]-1,3,4-oxadiazole	55738-54-0	year	0.0077	1.2	0.062
Trichloroethylene (TCE)	79-01-6	year	0.21	34	1.7
Triethylamine	121-44-8	24-hr	2.0E+02	15	0.74
Tris(1-aziridinyl)phosphine sulfide	52-24-4	year	0.00029	0.048	0.0024
Tris(2,3-dibromopropyl)phosphate	126-72-7	year	0.0015	0.25	0.012
Tryptophan-P-1	62450-06-0	year	0.00014	0.022	0.0011
Tryptophan-P-2	62450-07-1	year	0.0011	0.18	0.0089
Uranium, insoluble compounds, NOS	----	24-hr	0.80	0.059	0.0030
Uranium, soluble salts, NOS	----	24-hr	0.040	0.0030	0.00015
Vanadium (fume or dust)	7440-62-2	24-hr	0.10	0.0074	0.00037
Vanadium pentoxide	1314-62-1	1-hr	3.0E+01	0.056	0.0028
Vinyl acetate	108-05-4	24-hr	2.0E+02	15	0.74
Vinyl bromide	593-60-2	24-hr	3.0	0.22	0.011
Vinyl chloride	75-01-4	year	0.11	18	0.92
Xylene (mixture), including m-xylene, o-xylene, p-xylene	1330-20-7	24-hr	220	16	0.82

Appendix B.
Retained Toxic Air Pollutants

The following table contains the list of 387 exiting TAPs that remain on the proposed list. Underlined text (and in red) indicates a change from the current table in the rule. NOS means not otherwise specified. This applies to situations where emission factors for a group of pollutants is reported, but specific isomers, congeners, or chemicals are not reported.

	Chemical Common Name for TAP Remaining on List	CAS
1	1,1,1,2-Tetrachloroethane	630-20-6
2	1,1,1,2-Tetrafluoroethane	811-97-2
3	1,1,1-Trichloroethane (Methyl chloroform)	71-55-6
4	1,1,2,2-Tetrachloroethane	79-34-5
5	1,1,2-Trichloroethane (Vinyl trichloride)	79-00-5
6	1,1-Dichloroethane (Ethylidene dichloride)	75-34-3
7	1,1-Dichloroethylene (1,1-DCE)	75-35-4
8	1,1-Difluoroethane	75-37-6
9	1,1-Dimethylhydrazine	57-14-7
10	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	39001-02-0
11	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9
12	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	67562-39-4
13	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	35822-46-9
14	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	55673-89-7
15	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	70648-26-9
16	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	39227-28-6
17	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	57117-44-9
18	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	57653-85-7
19	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	72918-21-9
20	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	19408-74-3
21	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	57117-41-6
22	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	40321-76-4
23	1,2,3-Trichloropropane	96-18-4
24	1,2-Dibromo-3-chloropropane (DBCP)	96-12-8
25	1,2-Dichloropropane (Propylene dichloride)	78-87-5
26	1,2-Dimethylhydrazine	540-73-8
27	1,2-Diphenylhydrazine (Hydrazobenzene)	122-66-7
28	1,2-Epoxybutane	106-88-7
29	1,3-Butadiene	106-99-0
30	1,3-Dichloropropene	542-75-6
31	1,3-Propane sultone	1120-71-4
32	1,4-Dichlorobenzene	106-46-7
33	1,4-Dioxane	123-91-1

	Chemical Common Name for TAP Remaining on List	CAS
34	1,6-Dinitropyrene	42397-64-8
35	1,8-Dinitropyrene	42397-65-9
36	1-[(5-Nitrofurfurylidene)-amino]-2-imidazolidinone	555-84-0
37	1-Amino-2-methylanthraquinone	82-28-0
38	1-Chloro-1,1-difluoroethane	75-68-3
39	1-Nitropyrene	5522-43-0
40	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	60851-34-5
41	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	57117-31-4
42	2,3,7,8-Tetrachlorodibenzofuran (TcDF)	51207-31-9
43	2,3,7,8-Tetrachlorodibenzo-p-dioxin & related compounds, NOS	----
44	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1746-01-6
45	2,4,6-Trichlorophenol	88-06-2
46	2,4-Diaminoanisole	615-05-4
47	2,4-Diaminoanisole sulfate	39156-41-7
48	2,4-Diaminotoluene (2,4-Toluene diamine)	95-80-7
49	2,4-Dinitrotoluene	121-14-2
50	2-Acetylaminofluorene	53-96-3
51	2-Amino-3-methyl-9H pyrido[2,3-b]indole	68006-83-7
52	2-Amino-3-methylimidazo-[4,5-f]quinoline	76180-96-6
53	2-Amino-5-(5-Nitro-2-Furyl)-1,3,4-Thiadiazol	712-68-5
54	2-Aminoanthraquinone	117-79-3
55	2-Chloroacetophenone	532-27-4
56	2-Methyl-1-nitroanthraquinone	129-15-7
57	2-Methylphenol (o-cresol)	95-48-7
58	2-Naphthylamine	91-59-8
59	2-Nitrofluorene	607-57-8
60	2-Nitropropane	79-46-9
61	3,3'-Dichlorobenzidine	91-94-1
62	3-Amino-9-ethylcarbazole hydrochloride	6109-97-3
63	3-Chloro-2-methyl-1-propene	563-47-3
64	3-Methylcholanthrene	56-49-5
65	3-Methylphenol (m-cresol)	108-39-4
66	4,4'-Diaminodiphenyl ether	101-80-4
67	4,4'-Methylenebis(2-chloroaniline)	101-14-4
68	4,4'Methylenebis(2-methylaniline)	838-88-0
69	4,4'-Methylenebis(n,n'-dimethyl)aniline	101-61-1
70	4,4'-Methylenedianiline	101-77-9
71	4,4'-Methylenedianiline dihydrochloride	13552-44-8
72	4,4-Thiodianiline	139-65-1
73	4-Aminobiphenyl	92-67-1
74	4-Chloro-o-phenylenediamine	95-83-0
75	4-Dimethylaminoazobenzene	60-11-7

	Chemical Common Name for TAP Remaining on List	CAS
76	4-Methylphenol (p-cresol)	106-44-5
77	4-Nitropyrene	57835-92-4
78	5-Methylchrysene	3697-24-3
79	5-Nitroacenaphthene	602-87-9
80	6-Nitrochrysene	7496-02-8
81	7,12-Dimethylbenz[a]anthracene	57-97-6
82	7H-Dibenzo[c,g]carbazole	194-59-2
83	A-alpha-c(2-amino-9h-pyrido[2,3-b]indole)	26148-68-5
84	Acetaldehyde	75-07-0
85	Acetamide	60-35-5
86	Acetonitrile	75-05-8
87	Acrolein	107-02-8
88	Acrylamide	79-06-1
89	Acrylic acid	79-10-7
90	Acrylonitrile	107-13-1
91	Actinomycin D	50-76-0
92	Alar (Daminsozide)	1596-84-5
93	Aldrin	309-00-2
94	Allyl chloride	107-05-1
95	Amitrole	61-82-5
96	Ammonia	7664-41-7
97	Ammonium bisulfate	7803-63-6
98	Aniline	62-53-3
99	Antimony trioxide	1309-64-4
100	Aramite	140-57-8
101	Arsenic & inorganic arsenic compounds, NOS	----
102	Arsine	7784-42-1
103	Asbestos (fibers/cubic centimeter)	1332-21-4
104	Auramine	492-80-8
105	Azaserine	115-02-6
106	Azathioprine	446-86-6
107	Azobenzene	103-33-3
108	Barium chromate	10294-40-3
109	Benz[a]anthracene	56-55-3
110	Benzene	71-43-2
111	Benzidine	92-87-5
112	Benzo[a]pyrene	50-32-8
113	Benzo[b]fluoranthene	205-99-2
114	Benzo[j]fluoranthene	205-82-3
115	Benzo[k]fluoranthene	207-08-9
116	Benzyl chloride	100-44-7
117	Benzyl violet 4B	1694-09-3

	Chemical Common Name for TAP Remaining on List	CAS
118	Beryllium & compounds, NOS	----
119	Beryllium oxide	1304-56-9
120	Beryllium sulfate	13510-49-1
121	beta-Butyrolactone	3068-88-0
122	beta-Propiolactone	57-57-8
123	Bis(2-chloroethyl) ether	111-44-4
124	Bis(chloromethyl) ether	542-88-1
125	Bromodichloromethane	75-27-4
126	Bromoform	75-25-2
127	Bromomethane (methyl bromide)	74-83-9
128	Butylated hydroxyanisole	25013-16-5
129	C.I. basic red 9 monohydrochloride	569-61-9
130	Cadmium & compounds, NOS	----
131	Captafol	2425-06-1
132	Captan	133-06-2
133	Carbon disulfide	75-15-0
134	Carbon monoxide	630-08-0
135	Carbon tetrachloride	56-23-5
136	Chlorambucil	305-03-3
137	Chlordane	57-74-9
138	Chlordecone	143-50-0
139	Chlorendic Acid	115-28-6
140	Chlorinated paraffins	108171-26-2
141	Chlorine	7782-50-5
142	Chlorine dioxide	10049-04-4
143	Chloroalkanes C10-13 (chlorinated paraffins)	85535-84-8
144	Chlorobenzene	108-90-7
145	Chlorobenzilate (ethyl-4,4'-dichlorobenzilate)	510-15-6
146	Chlorodifluoromethane (Freon 22)	75-45-6
147	Chloroethane (ethyl chloride)	75-00-3
148	Chloroform	67-66-3
149	Chloromethane (methyl chloride)	74-87-3
150	Chloromethyl methyl ether	107-30-2
151	Chloropicrin	76-06-2
152	Chlorothalonil	1897-45-6
153	Chlorozotocin	54749-90-5
154	Chromic trioxide	1333-82-0
155	Chromic(VI) acid	7738-94-5
156	Chromium(VI) & compounds, NOS	----
157	Chrysene	218-01-9
158	Cinnamyl Anthranilate	87-29-6
159	Cobalt	7440-48-4

	Chemical Common Name for TAP Remaining on List	CAS
160	Coke oven emissions	----
161	Copper & compounds	----
162	Cumene	98-82-8
163	Cupferron	135-20-6
164	Cyclohexane	110-82-7
165	Cyclophosphamide (anhydrous)	50-18-0
166	Cyclophosphamide (hydrated)	6055-19-2
167	D & C red no. 9	5160-02-1
168	Dacarbazine	4342-03-4
169	Dantron	117-10-2
170	Di(2-ethylhexl)phthalate	117-81-7
171	Diazinon	333-41-5
172	Dibenz[a,h]acridine	226-36-8
173	Dibenz[a,h]anthracene	53-70-3
174	Dibenz[a,j]acridine	224-42-0
175	Dibenzo[a,e]pyrene	192-65-4
176	Dibenzo[a,h]pyrene	189-64-0
177	Dibenzo[a,i]pyrene	189-55-9
178	Dibenzo[a,l]pyrene	191-30-0
179	Dichlorodiphenyldichloroethane (DDD)	72-54-8
180	Dichlorodiphenyldichloroethylene (DDE)	72-55-9
181	Dichlorodiphenyltrichloroethane (DDT)	50-29-3
182	Dichloromethane (methylene chloride)	75-09-2
183	Dichlorvos (DDVP)	62-73-7
184	Dieldrin	60-57-1
185	Diesel engine exhaust, particulate	----
186	Diethanolamine	111-42-2
187	Diethyl mercury	627-44-1
188	Diethylstilbestrol	56-53-1
189	Diglycidyl resorcinol ether	101-90-6
190	Dihydrosafrole	94-58-6
191	Dimethyl carbamoyl chloride	79-44-7
192	Dimethylvinylchloride	513-37-1
193	Direct black 38	1937-37-7
194	Direct blue 6	2602-46-2
195	Direct brown 95	16071-86-6
196	Disperse blue 1	2475-45-8
197	Disulfoton	298-04-4
198	Epichlorohydrin	106-89-8
199	Estradiol 17B	50-28-2
200	Ethyl benzene	100-41-4
201	Ethyl carbamate	51-79-6

	Chemical Common Name for TAP Remaining on List	CAS
202	Ethylene dibromide (EDB, 1,2-Dibromoethane)	106-93-4
203	Ethylene dichloride (EDC, 1,2-Dichloroethane)	107-06-2
204	Ethylene glycol	107-21-1
205	Ethylene glycol monobutyl ether (2-Butoxyethanol)	111-76-2
206	Ethylene glycol monoethyl ether (2-Ethoxyethanol)	110-80-5
207	Ethylene glycol monoethyl ether acetate	111-15-9
208	Ethylene glycol monomethyl ether (2-Methoxyethanol)	109-86-4
209	Ethylene glycol monomethyl ether acetate	110-49-6
210	Ethylene oxide	75-21-8
211	Ethylene thiourea	96-45-7
212	Ethyleneimine	151-56-4
213	Ferric sulfate	10028-22-5
214	Fluorides (flouride containing chemicals), NOS	----
215	Fluorine gas	7782-41-4
216	Formaldehyde	50-00-0
217	Furmecyclox	60568-05-0
218	Furylfuramide	3688-53-7
219	Glu-P-1	67730-11-4
220	Glu-P-2	67730-10-3
221	Glutaraldehyde	111-30-8
222	Gyromitrin	16568-02-8
223	HC Blue 1	2784-94-3
224	Heptachlor	76-44-8
225	Heptachlor epoxide	1024-57-3
226	Heptachlorodibenzo-p-dioxin, NOS	37871-00-4
227	Hexachlorobenzene	118-74-1
228	Hexachlorobutadiene	87-68-3
229	Hexachlorocyclohexane, alpha-	319-84-6
230	Hexachlorocyclohexane, beta-	319-85-7
231	Hexachlorocyclohexane, gamma- (Lindane)	58-89-9
232	Hexachlorocyclohexanes	608-73-1
233	Hexachlorocyclopentadiene	77-47-4
234	Hexachlorodibenzo-p-dioxin, NOS	34465-46-8
235	Hexachloroethane	67-72-1
236	Hexamethylene diisocyanate	822-06-0
237	Hydrazine	302-01-2
238	Hydrazine sulfate	10034-93-2
239	Hydrochloric acid	7647-01-0
240	Hydrogen cyanide	74-90-8
241	Hydrogen fluoride	7664-39-3
242	Hydrogen sulfide	7783-06-4
243	Indeno[1,2,3-cd]pyrene	193-39-5

	Chemical Common Name for TAP Remaining on List	CAS
244	Isophorone	78-59-1
245	Isopropyl alcohol	67-63-0
246	Lasiocarpine	303-34-4
247	Lead & compounds, NOS	----
248	Lead acetate	301-04-2
249	Lead chromate oxide	18454-12-1
250	Lead chromate	7758-97-6
251	Lead subacetate	1335-32-6
252	Maleic anhydride	108-31-6
253	Manganese & compounds	----
254	Melphalan	148-82-3
255	Mercury, elemental	7439-97-6
256	Methanol	67-56-1
257	Methyl ethyl ketone	78-93-3
258	Methyl isobutyl ketone (MIBK, Hexone)	108-10-1
259	Methyl isocyanate	624-83-9
260	Methyl mercury (dimethylmercury)	593-74-8
261	Methyl methacrylate	80-62-6
262	Methyl methanesulfonate	66-27-3
263	Methyl tert-butyl ether	1634-04-4
264	Methylene diphenyl diisocyanate (MDI)	101-68-8
265	Methylthiouracil	56-04-2
266	Michler's ketone	90-94-8
267	Mirex	2385-85-5
268	Mitomycin C	50-07-7
269	Monocrotaline	315-22-0
270	m-Xylene	108-38-3
271	N,N-Dimethylformamide	68-12-2
272	n-[4-(5-nitro-2-furyl)-2-thiazolyl]-acetamide (aka furathiazole)	531-82-8
273	Naphthalene	91-20-3
274	n-Hexane	110-54-3
275	Nickel refinery dust	----
276	Nickel subsulfide	12035-72-2
277	Nifurthiazole	3570-75-0
278	Nitric acid	7697-37-2
279	Nitrilotriacetic acid	139-13-9
280	Nitrilotriacetic acid, trisodium salt monohydrate	18662-53-8
281	Nitrofen	1836-75-5
282	Nitrofurazone	59-87-0
283	Nitrogen dioxide	10102-44-0
284	N-Methyl-N-nitro-N-nitrosoguanidine	70-25-7
285	N-Nitrosodiethanolamine	1116-54-7

	Chemical Common Name for TAP Remaining on List	CAS
286	N-Nitrosodiethylamine	55-18-5
287	N-Nitrosodimethylamine	62-75-9
288	N-Nitrosodi-n-butylamine	924-16-3
289	N-Nitrosodi-n-propylamine	621-64-7
290	N-Nitrosodiphenylamine	86-30-6
291	N-Nitrosomorpholine	59-89-2
292	N-Nitroso-N-ethylurea	759-73-9
293	N-Nitroso-N-methylethylamine	10595-95-6
294	N-Nitroso-N-methylurea	684-93-5
295	N-Nitroso-n-methylurethane	615-53-2
296	N-Nitrosonornicotine	16543-55-8
297	N-Nitrosopiperidine	100-75-4
298	N-Nitrosopyrrolidine	930-55-2
299	o-Aminoazotoluene	97-56-3
300	o-Anisidine	90-04-0
301	o-Anisidine hydrochloride	134-29-2
302	o-Phenylphenate, sodium	132-27-4
303	o-Toluidine	95-53-4
304	o-Toluidine hydrochloride	636-21-5
305	o-Xylene	95-47-6
306	Ozone	10028-15-6
307	PCB 105 [2,3,3',4,4'-pentachlorobiphenyl]	32598-14-4
308	PCB 114 [2,3,4,4',5-pentachlorobiphenyl]	74472-37-0
309	PCB 118 [2,3',4,4',5-pentachlorobiphenyl]	31508-00-6
310	PCB 123 [2,3',4,4',5'-pentachlorobiphenyl]	65510-44-3
311	PCB 126 [3,3',4,4',5-pentachlorobiphenyl]	57465-28-8
312	PCB 156 [2,3,3',4,4',5-hexachlorobiphenyl]	38380-08-4
313	PCB 157 [2,3,3',4,4',5'-hexachlorobiphenyl]	69782-90-7
314	PCB 167 [2,3',4,4',5,5'-hexachlorobiphenyl]	52663-72-6
315	PCB 169 [3,3',4,4',5,5'-hexachlorobiphenyl]	32774-16-6
316	PCB 189 [2,3,3',4,4',5,5'-heptachlorobiphenyl]	39635-31-9
317	PCB 77 [3,3',4,4'-tetrachlorobiphenyl]	32598-13-3
318	PCB 81 [3,4,4',5-tetrachlorobiphenyl]	70362-50-4
319	p-Chloro-o-toluidine	95-69-2
320	p-Cresidine	120-71-8
321	Pentachlorophenol	87-86-5
322	Perchloroethylene	127-18-4
323	Phenacetin	62-44-2
324	Phenazopyridine	94-78-0
325	Phenazopyridine hydrochloride	136-40-3
326	Phenesterin	3546-10-9
327	Phenobarbital	50-06-6

	Chemical Common Name for TAP Remaining on List	CAS
328	Phenol	108-95-2
329	Phenoxybenzamine	59-96-1
330	Phenoxybenzamine hydrochloride	63-92-3
331	Phosgene	75-44-5
332	Phosphine	7803-51-2
333	Phosphoric acid	7664-38-2
334	Phosphorus	7723-14-0
335	Phthalic anhydride	85-44-9
336	p-Nitrosodiphenylamine	156-10-5
337	Polybrominated biphenyls	----
338	Polychlorinated biphenyls (PCBs)	1336-36-3
339	Ponceau 3R	3564-09-8
340	Ponceau MX	3761-53-3
341	Potassium bromate	7758-01-2
342	Procarbazine	671-16-9
343	Procarbazine Hydrochloride	366-70-1
344	Propylene	115-07-1
345	Propylene glycol	57-55-6
346	Propylene glycol dinitrate	6423-43-4
347	Propylene glycol monomethyl ether	107-98-2
348	Propylene oxide	75-56-9
349	Propylthiouracil	51-52-5
350	p-Xylene	106-42-3
351	Refractory ceramic fibers (fibers/cubic centimeter)	----
352	Reserpine	50-55-5
353	Safrole	94-59-7
354	Selenide, hydrogen	7783-07-5
355	Selenium & selenium compounds (other than hydrogen selenide)	----
356	Silica, crystalline (respirable)	7631-86-9
357	Sodium hydroxide	1310-73-2
358	Sodium sulfate	7757-82-6
359	Sterigmatocystin	10048-13-2
360	Streptozotocin	18883-66-4
361	Styrene	100-42-5
362	Styrene oxide	96-09-3
363	Sulfallate	95-06-7
364	Sulfur dioxide	7446-09-5
365	Sulfur mustard	505-60-2
366	Sulfuric acid	7664-93-9
367	Thioacetamide	62-55-5
368	Thiourea	62-56-6

	Chemical Common Name for TAP Remaining on List	CAS
369	Titanium tetrachloride	7550-45-0
370	Toluene	108-88-3
371	Toluene diisocyanates (2,4- and 2,6-)	26471-62-5
372	Toluene-2,4-diisocyanate	584-84-9
373	Toluene-2,6-diisocyanate	91-08-7
374	Toxaphene (polychlorinated camphenes)	8001-35-2
375	Trans-1,2-dichloroethene	156-60-5
376	Trans-2[(dimethylamino)-methylimino]-5-[2-(5-nitro-2-furyl)-vinyl]-1,3,4-oxadiazole	55738-54-0
377	Trichloroethylene (TCE)	79-01-6
378	Triethylamine	121-44-8
379	Tris-(1-Aziridinyl)phosphine sulfide	52-24-4
380	Tris(2,3-dibromopropyl)phosphate	126-72-7
381	Tryptophan-P-1	62450-06-0
382	Tryptophan-P-2	62450-07-1
383	Vanadium (fume or dust)	7440-62-2
384	Vanadium pentoxide	1314-62-1
385	Vinyl acetate	108-05-4
386	Vinyl bromide	593-60-2
387	Vinyl chloride	75-01-4

Appendix C.
New Toxic Air Pollutants

The following table contains the list of 45 new chemicals that we propose as TAPs. Underlined text (and in red) indicates a change from the current TAP. NOS means not otherwise specified. This applies to situations where emission factors for a group of pollutants is reported, but specific isomers, congeners, or chemicals are not reported.

	Chemical Common Name for New TAP	CAS
1	1,2,3-Trimethylbenzene	526-73-8
2	1,2,4-Trimethylbenzene	95-63-6
3	1,3,5-Trimethylbenzene	108-67-8
4	1-Bromopropane	106-94-5
5	2,3-Dichloropropene	78-88-6
6	2-Hexanone	591-78-6
7	Boron & compounds, NOS	----
8	Bromobenzene	108-86-1
9	Caprolactam	105-60-2
10	Carbonyl sulfide	463-58-1
11	Cerium oxide	1306-38-3
12	Chloroprene	126-99-8
13	Chromium(III), insoluble particulates	----
14	Chromium(III), soluble particulates	----
15	Cresols (mixture), including m-cresol, o-cresol, p-cresol	1319-77-3
16	Guthion (azinphos-methyl)	86-50-0
17	Lead phosphate	7446-27-7
18	Libby amphipole asbestos (fibers/cubic centimeter)	----
19	Malathion	121-75-5
20	Nickel & compounds, NOS	----
21	Nickel acetate	373-02-4
22	Nickel carbonate	3333-67-3
23	Nickel carbonate hydroxide	1346-39-3
24	Nickel carbonyl	13463-39-3
25	Nickel chloride	7718-54-9
26	Nickel hydroxide	12054-48-7
27	Nickel nitrate hexahydrate	13478-00-7
28	Nickel oxide	1313-99-1
29	Nickel oxide black	---
30	Nickel sulfate	7786-81-4
31	Nickel sulfate hexahydrate	10101-97-0

	Chemical Common Name for New TAP	CAS
32	Nickel sulfide	11113-75-0
33	Nickelocene	1271-28-9
34	Nitrobenzene	98-95-3
35	Oleum	8014-95-7
36	Parathion	56-38-2
37	Phosphorus, white	12185-10-3
38	Polybrominated diphenyl ethers (PBDEs) [Containing less than 10 bromine atoms]	---
39	Propionaldehyde	123-38-6
40	Sulfur trioxide	7446-71-9
41	Tertiary-butyl acetate	540-88-5
42	Tetrahydrofuran	109-99-9
43	Uranium, insoluble compounds, NOS	----
44	Uranium, soluble salts, NOS	----
45	Xylene (mixture), including m-xylene, o-xylene, p-xylene	1330-20-7

Appendix D.
Toxic Air Pollutants with a More Stringent ASIL

The following table contains the list of 67 existing TAPs with a proposed ASIL that is more stringent than the current ASIL. Underlined text (and in red) indicates a change from the current TAP. NOS means not otherwise specified. This applies to situations where emission factors for a group of pollutants is reported, but specific isomers, congeners, or chemicals are not reported.

	Chemical Common Name with More Stringent ASIL	CAS
1	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	39001-02-0
2	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9
3	1,2,3-Trichloropropane	96-18-4
4	1,2-Dibromo-3-chloropropane (DBCP)	96-12-8
5	1,6-Dinitropyrene	42397-64-8
6	1,8-Dinitropyrene	42397-65-9
7	1-Nitropyrene	5522-43-0
8	2-Acetylaminofluorene	53-96-3
9	2-Aminoanthraquinone	117-79-3
10	2-Nitrofluorene	607-57-8
11	3-Methylcholanthrene	56-49-5
12	4,4'-Methylenebis(2-chloroaniline)	101-14-4
13	4,4'-Methylenedianiline dihydrochloride	13552-44-8
14	4-Dimethylaminoazobenzene	60-11-7
15	4-Nitropyrene	57835-92-4
16	5-Methylchrysene	3697-24-3
17	5-Nitroacenaphthene	602-87-9
18	6-Nitrochrysene	7496-02-8
19	7,12-Dimethylbenz[a]anthracene	57-97-6
20	7H-Dibenzo[c,g]carbazole	194-59-2
21	Arsine	7784-42-1
22	Asbestos (fibers/cubic centimeter)	1332-21-4
23	Benz[a]anthracene	56-55-3
24	Benzidine	92-87-5
25	Benzo[b]fluoranthene	205-99-2
26	Benzo[j]fluoranthene	205-82-3
27	Benzo[k]fluoranthene	207-08-9
28	Chlorine	7782-50-5
29	Chromic trioxide	1333-82-0
30	Chromic(VI) acid	7738-94-5
31	Chromium(VI) & compounds, NOS	----

	Chemical Common Name with More Stringent ASIL	CAS
32	Chrysene	218-01-9
33	Coke oven emissions	**----**
34	Dibenz[a,h]acridine	226-36-8
35	Dibenz[a,h]anthracene	53-70-3
36	Dibenz[a,j]acridine	224-42-0
37	Dibenzo[a,e]pyrene	192-65-4
38	Dibenzo[a,h]pyrene	189-64-0
39	Dibenzo[a,i]pyrene	189-55-9
40	Dibenzo[a,l]pyrene	191-30-0
41	Dimethylvinylchloride	513-37-1
42	Direct black 38	1937-37-7
43	Disulfoton	298-04-4
44	Ethyl carbamate	51-79-6
45	Ethylene dibromide (EDB, 1,2-Dibromoethane)	106-93-4
46	Ethylene glycol monobutyl ether (2-Butoxyethanol)	111-76-2
47	Ethylene oxide	75-21-8
48	Hydrogen cyanide	74-90-8
49	Indeno[1,2,3-cd]pyrene	193-39-5
50	Lead chromate oxide	18454-12-1
51	Lead chromate	7758-97-6
52	Mercury, elemental	7439-97-6
53	Methylene diphenyl diisocyanate (MDI)	101-68-8
54	N-Nitrosodiethylamine	55-18-5
55	N-Nitrosodimethylamine	62-75-9
56	N-Nitroso-N-ethylurea	759-73-9
57	N-Nitroso-N-methylurea	684-93-5
58	PCB 169 [3,3',4,4',5,5'-hexachlorobiphenyl]	32774-16-6
59	PCB 81 [3,4,4',5-tetrachlorobiphenyl]	70362-50-4
60	Perchloroethylene	127-18-4
61	Safrole	94-59-7
62	Sulfur mustard	505-60-2
63	Toluene diisocyanates (2,4- and 2,6-)	26471-62-5
64	Toluene-2,4-diisocyanate	584-84-9
65	Toluene-2,6-diisocyanate	91-08-7
66	Trichloroethylene (TCE)	79-01-6
67	Vanadium (fume or dust)	7440-62-2

Appendix E.
Toxic Air Pollutants with a Less Stringent ASIL

The following table contains the list of 38 existing TAPs with a proposed ASIL that is less stringent than the current ASIL. The list includes the four removed TAPs in Table 2 not covered by a proposed TAP. NOS means not otherwise specified. This applies to situations where emission factors for a group of pollutants is reported, but specific isomers, congeners, or chemicals are not reported.

	Chemical Common Name with Less Stringent ASIL	CAS
1	1,1,1-Trichloroethane (Methyl chloroform)	71-55-6
2	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	57117-41-6
3	1,3-Butadiene	106-99-0
4	1,3-Dichloropropene	542-75-6
5	1,4-Dioxane	123-91-1
6	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	57117-31-4
7	2,4,6-Trichlorophenol	88-06-2
8	5-Nitro-o-anisidine (removed)	99-59-2
9	Acrolein	107-02-8
10	Acrylamide	79-06-1
11	Ammonia	7664-41-7
12	Ammonium sulfate (removed)	7783-20-2
13	Barium chromate	10294-40-3
14	Benzene	71-43-2
15	Benzo[a]pyrene	50-32-8
16	Carbon tetrachloride	56-23-5
17	Chlordane	57-74-9
18	Chlorine dioxide	10049-04-4
19	Di(2-ethylhexl)phthalate	117-81-7
20	Diazinon	333-41-5
21	Dibromochloromethane (removed)	124-48-1
22	Dichloromethane (methylene chloride)	75-09-2
23	Diethyl mercury	627-44-1
24	Heptachlor	76-44-8
25	Hexachlorobenzene	118-74-1
26	Manganese & compounds	**----**
27	Melphalan hydrochloride (removed)	3223-07-2
28	Methanol	67-56-1
29	Methyl mercury (dimethylmercury)	593-74-8
30	PCB 105 [2,3,3',4,4'-pentachlorobiphenyl]	32598-14-4

	Chemical Common Name with Less Stringent ASIL	CAS
31	PCB 114 [2,3,4,4',5-pentachlorobiphenyl]	74472-37-0
32	PCB 118 [2,3',4,4',5-pentachlorobiphenyl]	31508-00-6
33	PCB 123 [2,3',4,4',5'-pentachlorobiphenyl]	65510-44-3
34	PCB 156 [2,3,3',4,4',5-hexachlorobiphenyl]	38380-08-4
35	PCB 157 [2,3,3',4,4',5'-hexachlorobiphenyl]	69782-90-7
36	PCB 167 [2,3',4,4',5,5'-hexachlorobiphenyl]	52663-72-6
37	PCB 189 [2,3,3',4,4',5,5'-heptachlorobiphenyl]	39635-31-9
38	Vinyl chloride	75-01-4

Appendix F.
Toxic Air Pollutants with an Unchanged ASIL

The following table contains the list of 105 existing TAPs with a proposed ASIL that is unchanged from the current ASIL. Underlined text (and in red) indicates a change from the current TAP. NOS means not otherwise specified. This applies to situations where emission factors for a group of pollutants is reported, but specific isomers, congeners, or chemicals are not reported.

	Chemical Common Name with Unchanged ASIL Value	CAS
1	1,1,1,2-Tetrafluoroethane	811-97-2
2	1,1-Dichloroethylene (1,1-DCE)	75-35-4
3	1,1-Difluoroethane	75-37-6
4	1,1-Dimethylhydrazine	57-14-7
5	1,2-Epoxybutane	106-88-7
6	1-Chloro-1,1-difluoroethane	75-68-3
7	2,4-Diaminoanisole sulfate	39156-41-7
8	2-Amino-3-methylimidazo-[4,5-f]quinoline	76180-96-6
9	2-Methylphenol (o-cresol)	95-48-7
10	2-Nitropropane	79-46-9
11	3-Chloro-2-methyl-1-propene	563-47-3
12	3-Methylphenol (m-cresol)	108-39-4
13	4,4'-Diaminodiphenyl ether	101-80-4
14	4-Methylphenol (p-cresol)	106-44-5
15	Acetaldehyde	75-07-0
16	Acetonitrile	75-05-8
17	Acrylic acid	79-10-7
18	Actinomycin D	50-76-0
19	Amitrole	61-82-5
20	Ammonium bisulfate	7803-63-6
21	beta-Propiolactone	57-57-8
22	Bromodichloromethane	75-27-4
23	Bromomethane (methyl bromide)	74-83-9
24	Carbon disulfide	75-15-0
25	Carbon monoxide	630-08-0
26	Chlorinated paraffins	108171-26-2
27	Chloroalkanes C10-13 (chlorinated paraffins)	85535-84-8
28	Chlorobenzene	108-90-7
29	Chlorodifluoromethane (Freon 22)	75-45-6
30	Chloroethane (ethyl chloride)	75-00-3

	Chemical Common Name with Unchanged ASIL Value	CAS
31	Chloromethane (methyl chloride)	74-87-3
32	Chloropicrin	76-06-2
33	Cobalt	7440-48-4
34	Copper & compounds	**----**
35	Cumene	98-82-8
36	Cyclohexane	110-82-7
37	Dichlorvos (DDVP)	62-73-7
38	Diethanolamine	111-42-2
39	Diethylstilbestrol	56-53-1
40	Dimethyl carbamoyl chloride	79-44-7
41	Ethyl benzene	100-41-4
42	Ethylene glycol	107-21-1
43	Ethylene glycol monoethyl ether (2-Ethoxyethanol)	110-80-5
44	Ethylene glycol monoethyl ether acetate	111-15-9
45	Ethylene glycol monomethyl ether (2-Methoxyethanol)	109-86-4
46	Ethylene glycol monomethyl ether acetate	110-49-6
47	Ferric sulfate	10028-22-5
48	Fluorides (flouride containing chemicals), NOS	**----**
49	Glu-P-2	67730-10-3
50	Glutaraldehyde	111-30-8
51	Hexachlorocyclohexane, alpha-	319-84-6
52	Hexachlorocyclopentadiene	77-47-4
53	Hexamethylene diisocyanate	822-06-0
54	Hydrochloric acid	7647-01-0
55	Hydrogen fluoride	7664-39-3
56	Hydrogen sulfide	7783-06-4
57	Isophorone	78-59-1
58	Isopropyl alcohol	67-63-0
59	Maleic anhydride	108-31-6
60	Melphalan	148-82-3
61	Methyl ethyl ketone	78-93-3
62	Methyl isobutyl ketone (MIBK, Hexone)	108-10-1
63	Methyl isocyanate	624-83-9
64	Methyl methacrylate	80-62-6
65	Michler's ketone	90-94-8
66	N,N-Dimethylformamide	68-12-2
67	n-Hexane	110-54-3

	Chemical Common Name with Unchanged ASIL Value	CAS
68	Nickel refinery dust	**----**
69	Nitric acid	7697-37-2
70	Nitrofurazone	59-87-0
71	Nitrogen dioxide	10102-44-0
72	N-Nitrosodi-n-propylamine	621-64-7
73	N-Nitrosonornicotine	16543-55-8
74	N-Nitrosopiperidine	100-75-4
75	o-Anisidine	90-04-0
76	o-Toluidine hydrochloride	636-21-5
77	Ozone	10028-15-6
78	p-Chloro-o-toluidine	95-69-2
79	Phenol	108-95-2
80	Phenoxybenzamine hydrochloride	63-92-3
81	Phosgene	75-44-5
82	Phosphine	7803-51-2
83	Phosphoric acid	7664-38-2
84	Phosphorus	7723-14-0
85	Phthalic anhydride	85-44-9
86	Procarbazine	671-16-9
87	Propylene	115-07-1
88	Propylene glycol monomethyl ether	107-98-2
89	Propylene oxide	75-56-9
90	Refractory ceramic fibers (fibers/cubic centimeter)	**----**
91	Selenide, hydrogen	7783-07-5
92	Selenium & selenium compounds (other than hydrogen selenide)	----
93	Silica, crystalline (respirable)	7631-86-9
94	Sodium hydroxide	1310-73-2
95	Sodium sulfate	7757-82-6
96	Sterigmatocystin	10048-13-2
97	Sulfur dioxide	7446-09-5
98	Sulfuric acid	7664-93-9
99	Titanium tetrachloride	7550-45-0
100	Toluene	108-88-3
101	Triethylamine	121-44-8
102	Tryptophan-P-2	62450-07-1
103	Vanadium pentoxide	1314-62-1

	Chemical Common Name with Unchanged ASIL Value	CAS
104	Vinyl acetate	108-05-4
105	Vinyl bromide	593-60-2

Appendix G.
Toxic Air Pollutants with an Unchanged ASIL Value (Adjusted by Significant Digit)

The following table contains the list of 181 existing TAPs with a proposed ASIL adjusted for two significant digits from the current ASIL. We consider these unchanged values. Underlined text (and in red) indicates a change from the current TAP. NOS means not otherwise specified. This applies to situations where emission factors for a group of pollutants is reported, but specific isomers, congeners, or chemicals are not reported.

	Chemical Common Name for TAP with Unchanged ASIL (adjusted by significant digit)	CAS
1	1,1,1,2-Tetrachloroethane	630-20-6
2	1,1,2,2-Tetrachloroethane	79-34-5
3	1,1,2-Trichloroethane (Vinyl trichloride)	79-00-5
4	1,1-Dichloroethane (Ethylidene dichloride)	75-34-3
5	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	67562-39-4
6	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	35822-46-9
7	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	55673-89-7
8	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	70648-26-9
9	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	39227-28-6
10	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	57117-44-9
11	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	57653-85-7
12	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	72918-21-9
13	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	19408-74-3
14	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	40321-76-4
15	1,2-Dichloropropane (Propylene dichloride)	78-87-5
16	1,2-Dimethylhydrazine	540-73-8
17	1,2-Diphenylhydrazine (Hydrazobenzene)	122-66-7
18	1,3-Propane sultone	1120-71-4
19	1,4-Dichlorobenzene	106-46-7
20	1-[(5-Nitrofurfurylidene)-amino]-2-imidazolidinone	555-84-0
21	1-Amino-2-methylanthraquinone	82-28-0
22	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	60851-34-5
23	2,3,7,8-Tetrachlorodibenzofuran (TcDF)	51207-31-9
24	2,3,7,8-Tetrachlorodibenzo-p-dioxin & related compounds, NOS	**----**
25	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1746-01-6
26	2,4-Diaminoanisole	615-05-4
27	2,4-Diaminotoluene (2,4-Toluene diamine)	95-80-7
28	2,4-Dinitrotoluene	121-14-2
29	2-Amino-3-methyl-9H pyrido[2,3-b]indole	68006-83-7
30	2-Amino-5-(5-Nitro-2-Furyl)-1,3,4-Thiadiazol	712-68-5

	Chemical Common Name for TAP with Unchanged ASIL (adjusted by significant digit)	CAS
31	2-Chloroacetophenone	532-27-4
32	2-Methyl-1-nitroanthraquinone	129-15-7
33	2-Naphthylamine	91-59-8
34	3,3'-Dichlorobenzidine	91-94-1
35	3-Amino-9-ethylcarbazole hydrochloride	6109-97-3
36	4,4'Methylenebis(2-methylaniline)	838-88-0
37	4,4'-Methylenebis(N,N'-dimethyl)aniline	101-61-1
38	4,4'-Methylenedianiline	101-77-9
39	4,4-Thiodianiline	139-65-1
40	4-Aminobiphenyl	92-67-1
41	4-Chloro-o-phenylenediamine	95-83-0
42	A-alpha-c(2-amino-9h-pyrido[2,3-b]indole)	26148-68-5
43	Acetamide	60-35-5
44	Acrylonitrile	107-13-1
45	Alar (Daminsozide)	1596-84-5
46	Aldrin	309-00-2
47	Allyl chloride	107-05-1
48	Aniline	62-53-3
49	Antimony trioxide	1309-64-4
50	Aramite	140-57-8
51	Arsenic & inorganic arsenic compounds, NOS	----
52	Auramine	492-80-8
53	Azaserine	115-02-6
54	Azathioprine	446-86-6
55	Azobenzene	103-33-3
56	Benzyl chloride	100-44-7
57	Benzyl violet 4B	1694-09-3
58	Beryllium & compounds, NOS	----
59	Beryllium oxide	1304-56-9
60	Beryllium sulfate	13510-49-1
61	beta-Butyrolactone	3068-88-0
62	Bis(2-chloroethyl) ether	111-44-4
63	Bis(chloromethyl) ether	542-88-1
64	Bromoform	75-25-2
65	Butylated hydroxyanisole	25013-16-5
66	C.I. basic red 9 monohydrochloride	569-61-9
67	Cadmium & compounds, NOS	----
68	Captafol	2425-06-1
69	Captan	133-06-2
70	Chlorambucil	305-03-3
71	Chlordecone	143-50-0

	Chemical Common Name for TAP with Unchanged ASIL (adjusted by significant digit)	CAS
72	Chlorendic Acid	115-28-6
73	Chlorobenzilate (ethyl-4,4'-dichlorobenzilate)	510-15-6
74	Chloroform	67-66-3
75	Chloromethyl methyl ether	107-30-2
76	Chlorothalonil	1897-45-6
77	Chlorozotocin	54749-90-5
78	Cinnamyl Anthranilate	87-29-6
79	Cupferron	135-20-6
80	Cyclophosphamide (anhydrous)	50-18-0
81	Cyclophosphamide (hydrated)	6055-19-2
82	D & C red no. 9	5160-02-1
83	Dacarbazine	4342-03-4
84	Dantron	117-10-2
85	Dichlorodiphenyldichloroethane (DDD)	72-54-8
86	Dichlorodiphenyldichloroethylene (DDE)	72-55-9
87	Dichlorodiphenyltrichloroethane (DDT)	50-29-3
88	Dieldrin	60-57-1
89	Diesel engine exhaust, particulate	----
90	Diglycidyl resorcinol ether	101-90-6
91	Dihydrosafrole	94-58-6
92	Direct blue 6	2602-46-2
93	Direct brown 95	16071-86-6
94	Disperse blue 1	2475-45-8
95	Epichlorohydrin	106-89-8
96	Estradiol 17B	50-28-2
97	Ethylene dichloride (EDC, 1,2-Dichloroethane)	107-06-2
98	Ethylene thiourea	96-45-7
99	Ethyleneimine	151-56-4
100	Fluorine gas	7782-41-4
101	Formaldehyde	50-00-0
102	Furmecyclox	60568-05-0
103	Furylfuramide	3688-53-7
104	Glu-P-1	67730-11-4
105	Gyromitrin	16568-02-8
106	HC Blue 1	2784-94-3
107	Heptachlor epoxide	1024-57-3
108	Heptachlorodibenzo-p-dioxin, NOS	37871-00-4
109	Hexachlorobutadiene	87-68-3
110	Hexachlorocyclohexane, beta-	319-85-7
111	Hexachlorocyclohexane, gamma- (Lindane)	58-89-9
112	Hexachlorocyclohexanes	608-73-1

	Chemical Common Name for TAP with Unchanged ASIL (adjusted by significant digit)	CAS
113	Hexachlorodibenzo-p-dioxin, NOS	34465-46-8
114	Hexachloroethane	67-72-1
115	Hydrazine	302-01-2
116	Hydrazine sulfate	10034-93-2
117	Lasiocarpine	303-34-4
118	Lead & compounds, NOS	----
119	Lead acetate	301-04-2
120	Lead Subacetate	1335-32-6
121	Methyl methanesulfonate	66-27-3
122	Methyl tert-butyl ether	1634-04-4
123	Methylthiouracil	56-04-2
124	Mirex	2385-85-5
125	Mitomycin C	50-07-7
126	Monocrotaline	315-22-0
127	m-Xylene	108-38-3
128	n-[4-(5-nitro-2-furyl)-2-thiazolyl]-acetamide (aka furathiazole)	531-82-8
129	Naphthalene	91-20-3
130	Nickel subsulfide	12035-72-2
131	Nifurthiazole	3570-75-0
132	Nitrilotriacetic acid	139-13-9
133	Nitrilotriacetic acid, trisodium salt monohydrate	18662-53-8
134	Nitrofen	1836-75-5
135	N-Methyl-N-nitro-N-nitrosoguanidine	70-25-7
136	N-Nitrosodiethanolamine	1116-54-7
137	N-Nitrosodi-n-butylamine	924-16-3
138	N-Nitrosodiphenylamine	86-30-6
139	N-Nitrosomorpholine	59-89-2
140	N-Nitroso-N-methylethylamine	10595-95-6
141	N-Nitroso-n-methylurethane	615-53-2
142	N-Nitrosopyrrolidine	930-55-2
143	o-Aminoazotoluene	97-56-3
144	o-Anisidine hydrochloride	134-29-2
145	o-Phenylphenate, sodium	132-27-4
146	o-Toluidine	95-53-4
147	o-Xylene	95-47-6
148	PCB 126 [3,3',4,4',5-pentachlorobiphenyl]	57465-28-8
149	PCB 77 [3,3',4,4'-tetrachlorobiphenyl]	32598-13-3
150	p-Cresidine	120-71-8
151	Pentachlorophenol	87-86-5
152	Phenacetin	62-44-2
153	Phenazopyridine	94-78-0

	Chemical Common Name for TAP with Unchanged ASIL (adjusted by significant digit)	CAS
154	Phenazopyridine hydrochloride	136-40-3
155	Phenesterin	3546-10-9
156	Phenobarbital	50-06-6
157	Phenoxybenzamine	59-96-1
158	p-Nitrosodiphenylamine	156-10-5
159	Polybrominated biphenyls	**----**
160	Polychlorinated biphenyls (PCBs)	1336-36-3
161	Ponceau 3R	3564-09-8
162	Ponceau MX	3761-53-3
163	Potassium bromate	7758-01-2
164	Procarbazine Hydrochloride	366-70-1
165	Propylene glycol	57-55-6
166	Propylene glycol dinitrate	6423-43-4
167	Propylthiouracil	51-52-5
168	p-Xylene	106-42-3
169	Reserpine	50-55-5
170	Streptozotocin	18883-66-4
171	Styrene	100-42-5
172	Styrene oxide	96-09-3
173	Sulfallate	95-06-7
174	Thioacetamide	62-55-5
175	Thiourea	62-56-6
176	Toxaphene (polychlorinated camphenes)	8001-35-2
177	Trans-1,2-dichloroethene	156-60-5
178	Trans-2[(dimethylamino)-methylimino]-5-[2-(5-nitro-2-furyl)-vinyl]-1,3,4-oxadiazole	55738-54-0
179	Tris-(1-Aziridinyl)phosphine sulfide	52-24-4
180	Tris(2,3-dibromopropyl)phosphate	126-72-7
181	Tryptophan-P-1	62450-06-0

Appendix H.
Proposed Rule Language

The proposed table (WAC 173-460-150 in Appendix A) adjusts all values for two significant digits for emissions rates (i.e., de minimis and SQERs) and concentrations (i.e., ASILs). To align with this action, the proposed rule language specifies that all emission rates and concentrations must be rounded to two significant digits. The proposal also updates the rule language to use the acronym "TAP" instead of toxic air pollutant. Existing language is struck out and new language is underlined.

WAC 173-460-040 New source review.

(1) Applicability and exemptions. This chapter supplements the new source review requirements of WAC 173-400-110 by adding review requirements for new and modified toxic air pollutant sources. … An action that requires a notice of construction application under WAC 173-400-110 is subject to the review requirements of this chapter, unless the emissions before control equipment of each ((~~toxic air pollutant~~)) TAP (rounded to two significant digits) from a new source or the increase in emissions from each modification is less than the applicable de minimis emission threshold for that TAP listed in WAC 173-460-150.

(2) …

(3) The permitting authority that is reviewing a notice of construction application for a new or modified toxic air pollutant source must ensure that:

(a) The new or modified emission units use tBACT for emissions control for the ((~~toxic air pollutants~~)) TAPs with emission increases that trigger the need to submit a notice of construction application; and

WAC 173-460-080 First tier review.

(1) …

(2) The acceptable source impact analysis requirement of WAC 173-460-070 can be satisfied for any TAP using either dispersion modeling or the small quantity emission rate.

(a) Dispersion modeling. … The notice of construction application must demonstrate that the modeled ambient impact (rounded to two significant digits) of the aggregate emissions increase of each TAP does not exceed the ASIL for that TAP as listed in WAC 173-460-150. …

(b) Small quantity emission rates. An applicant may show for any TAP that the increase in emissions of that TAP (rounded to two significant digits), after application of tBACT, is less than the small quantity emission rate listed for that TAP in WAC 173-460-150.