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BEFORE THE BOARD OF ENVIRONMENTAL QUALITY
STATE OF IDAHO

IN THE MATTER OF AIR QUALITY PERMIT TO CONSTRUCT P-2019.0047	)	Agency Case No. 0101-22-01
	)	OAH Case No. 23-245-01
NEZ PERCE TRIBE, IDAHO CONSERVATION LEAGUE, and SAVE THE SOUTH FORK SALMON	)	**EXPERT DECLARATION OF WILLIAM TIEDEMANN**
Petitioners,	)	
v.	)	
IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY,	)	
Respondent,	)	
and	)	
PERPETUA RESOURCES IDAHO, INC.	)	
Intervenor-Respondent.	)	

I, WILLIAM TIEDEMANN, declare and affirm as follows:

1. I am employed by the Idaho Conservation League as a Regulatory Conservation Associate. I have been in this position since April 2022.

QUALIFICATIONS AND EXPERIENCE

2. I received my Bachelors of Science (B.S.) in Mechanical Engineering from Gonzaga University, Spokane, WA, in 2013.

3. From 2013 to 2015, I worked at Haakon Industries as a Production Engineer.w I was responsible for managing compliance with federal and State of Washington environmental regulations including Clean Air Act (CAA) permitting and hazardous waste management at Haakon's Cheney, WA, manufacturing plant. There, I was the lead engineer in completing regular CAA permit and hazardous waste reporting requirements, and as well as leading several CAA permit modifications.

4. From 2017 to 2019, I was a CAA Permitting Engineer with the Idaho Department of Environmental Quality where I developed dozens of CAA air quality permits, including Permits to Construct (PTC), Title V Permits, and permit exemption documentation for various facilities. I worked with a variety of facilities, including gravel mining/processing, food manufacturing, landfills, among others. In developing these permits for these various operations, I was responsible for analyzing compliance with Idaho's toxic air pollutant (TAP) requirements. During this time, I became deeply familiar with Idaho Rules for the Control of Air Pollutions (Air Rules) found under IDAPA 58.01.01, as well as federal air permitting regulations 40 C.F.R. 60, 61, and 63.

5. From 2019 to 2022, I worked as a Senior Environmental Engineer at Brown and Caldwell Associates where I worked with a variety of clients on a multitude of projects on permitting and compliance projects, as well as site investigation and remediation. My work involved local, state, and federal environmental regulations within many frameworks including the CAA, Clean Water Act (CWA), Emergency Planning Community Right to Know Act (EPCRA), Spill Prevention Control and Countermeasure (SPCC), National Environmental Policy Act (NEPA), and cyanidation permitting. At the state level, my work included projects that spanned from Idaho, Oregon, Washington, Texas, Minnesota, New Jersey, and Massachusetts. Within the site investigation and remediation scope, my work included groundwater and surface water baseline monitoring, abandoned mine land site characterization, petroleum impacted site remedial action and monitoring, and dioxanes impacted site characterization. Within the CAA scope, my work included assisting clients with stationary source permitting compliance for a variety of industrial facilities, primarily in New Jersey and Idaho.

6. Since April of 2022, I have been employed at the Idaho Conservation League as a Regulatory Conservation Associate. Within this role, I review and provide comments on CWA and CAA permits, participate in federal and state rulemaking, and review CWA and CAA compliance/enforcement activities.

7. Through my career with private firms, the State of Idaho, and a non-profit organization, I have reviewed and/or developed hundreds of CAA permits, participated in dozens of negotiated rulemakings, and have reviewed thousands of pages of environmental rules and regulations across a variety of disciplines.

SCOPE OF REVIEW

8. I have been asked by the Petitioners Nez Perce Tribe, Idaho Conservation League, and Save the South Fork Salmon to review and evaluate the issues raised in the *Final Order in the Matter of Air Quality Permit to Construct P-2019.0047*[1] (Final Order) issued by the Board of Environmental Quality (Board) on May 9, 2024. Specifically, this declaration provides evidence and expert opinion on:

a. Whether DEQ's application of the 16/70 Project-specific adjustment factor to its analysis of ambient arsenic air concentration was appropriate to demonstrate compliance with the rule for carcinogenic TAPs found in IDAPA 58.01.01.586;

b. Whether using a 5-year rolling average for compliance with the rule for carcinogenic TAPs was appropriate and properly supported by the Permit conditions; and

c. Whether there is sufficient evidence to support the T-RACT analysis limiting the non-West End pit production limit.

DOCUMENTS REVIEWED

9. In preparation of this expert declaration, I reviewed the following documents:

- The historic TAPs rulemaking record from State of Idaho historical archives. The historic record includes hundreds of separate documents, including previous draft and final TAPs rules, public hearing transcripts, response to comment documents, emails, memorandums, letters between DEQ and industry stakeholders, hand written notes, and other various documents. Generally, these documents capture the 1991 to 1995 time period in which the original DEQ TAPs policy was formalized within the Idaho Negotiated Rulemaking Process and subsequently modified several times. I reviewed the historic TAPs rulemaking record in person, at the DEQ State office on two separate occasions on August 20, and September 10, 2024.

[1] REC 3695. *Final Order in the Matter of Air Quality Permit to Construct P-2019.0047*, Case Docket No. 0101-22-01, OAH Case No. 23-245-01 (May 9, 2024) (Final Order).

- Perpetua's application for a PTC, the draft PTC (Jan. 13, 2022), final PTC (June 17, 2022), the final Statement of Basis and Response to Comments (June 17, 2022) and associated attachments.

- Idaho's Air Rules, IDAPA 58.01.01.

- The Declarations of Kevin Schilling; Norka E. Paden, Ph.D.; Kevin Lewis; and Theresa Lopez, and each declarations' attached exhibits.

- The documents referenced in this declaration, which are attached as exhibits.

SUMMARY OF OPINIONS

10. Based on my review of case materials and extensive CAA permitting and compliance experience in private practice, with the State of Idaho, and with a non-profit organization, I conclude as follows:

a. DEQ's application of the 16/70 Project-specific adjustment factor to the ambient arsenic air concentration analysis, and the use of exposure duration adjustments like the 16/70 calculations is not supported by the historic TAPs rulemaking record. It was thus inappropriate for DEQ to use such an adjustment factor to demonstrate compliance with the Air Rules.

b. DEQ's interpretation of the TAPs AACCs as averaging periods rather than enforceable "standards" is misplaced and is not supported by the historic TAPs rulemaking record;

c. DEQ use of a 5-year rolling average for TAPs emission calculations is neither supported by the TAPs rule, the historic TAPs rulemaking record, nor by limitations under the Permit conditions; and

d. There was sufficient evidence to support the T-RACT analysis limiting the non-West End pit lifetime production limit, but West End Pit production is not properly constrained below the less than life-of-mine time frame.

OPINIONS

A. Application of the 16/70 Project-specific adjustment factor for assessing compliance with the TAPs rule is inconsistent with the rulemaking history, intent, and plain language of the TAPs rule.

11. When calculating arsenic emissions from the SGP for purposes of assessing compliance with the TAPs Rule, DEQ applied a Project-specific adjustment factor that took the SGP's estimated operational boundary arsenic concentration, multiplied it by 16 (representing the 16 year life of the SGP), divided that number by 70 years (representing an average human life-time), then compared that number the arsenic Ambient Concentration for Carcinogens (AACC) in order to demonstrate TAPs compliance.

12. The Declaration of Kevin Lewis (Lewis Declaration) claims that an "apples to apples" cancer risk comparison of the project's arsenic emissions and the AACC for arsenic cannot be made without the 16/70 Project-specific adjustment factor Lewis Decl. ¶ 58.

13.The Declarations of Norka E. Paden, Ph.D. (Paden Declaration), Kevin Schilling (Schilling Declaration), and Teresa Lopez (Lopez Declaration) all opine on this issue falling into the same problematic trap by relying on the same premise.

14. Based on my review of the historical records related to the development of the TAPs Rule, it is evident that the AACCs were developed as annual emission limits, with the intent that compliance is demonstrated on a year-over-year basis. The records demonstrate that

the use of an exposure duration adjustment,[2] like the 16/70 Project-specific adjustment factor used for the SGP, was directly considered by DEQ, and ultimately rejected. If implemented, using project-specific adjustment factors would create a permitting protocol that is antithetical to the intended protections of the TAPs Rule, the AACCs, and annual, year-over-year limits. My own personal experience working as a Permitting Engineer for DEQ, the Air Rules themselves, the historical TAPs Rule rulemaking record, and greater context of U.S. Environmental Protection Agency (EPA) guidance all support this conclusion.

15. As a Permitting Engineer for DEQ, I developed dozens of permits that required a TAPs compliance analysis. Many of those permits were for sources, such as portable rock crushers and concrete batch plants, that likely had limited term operations. In other words, more than five years, but less than 70 years. In all these instances I invariably applied DEQ's standard TAPs compliance protocol – to use the AACCs as annual compliance limits that a facility must meet year-over-year. In certain select instances where a facility specifically stated they did not intend to operate for more than 5 years, a ten-fold increase in the AACC was permitted, as allowed under Air Rule 58.01.01.007.08 and 210.15, but a permit condition limiting the facility's operation to no more than 5 years was included in the permit.

16. I never applied or was asked by supervising staff or an applicant to apply an adjustment factor for a TAPs emission calculation to account for exposure duration, like the 16/70 Project-specific adjustment factor at issue here. To my knowledge, DEQ introduced this type of Project-specific adjustment factor for the first time during the development of this PTC and such adjustment factors have never been used before for the permitting of other mines or other facilities.

[2] The concept of an "exposure duration adjustment" may also be appropriately referred to as "risk amortization" or "dose-averaging" as done within the Declaration of Ian H. von Lindern, P.E., Ph.D.

17. The Air Rules themselves and the historical TAPs rulemaking record reinforce my personal experience with TAPs compliance and demonstrate that, in its original TAPs rulemaking process, DEQ directly considered, but ultimately rejected, concepts like the 16/70 Project-specific adjustment factor and exposure duration adjustments generally, except for sources expected to operate for less than 5 years.

18. In an August 13, 1992 letter from DEQ's Mr. Frank Wilkoz to Ms. Joan Cloonan, Idaho Association of Commerce and Industry,[3] Mr. Wilkoz provided a first draft of the original TAPs rules for review while adding context within a "Explanation of Additions and Changes" section. Mr. Wilkoz served as DEQ's Technical Services Bureau Chief and was heavily involved in the development of the original TAPs rulemaking and subsequent modification while Ms. Cloonan served as an industry stakeholder and provided input to the process. Mr. Wilkoz's "Explanation of Additions and Changes" section provides insight to how DEQ intended to permit remediation and short term sources. Most significantly Mr. Wilkoz writes:

> However, a remediation source cannot be allowed to produce emissions that have the potential to expose human receptors to a full lifetime dose of a TAP over a short period of time, especially a carcinogen, even in the interest of environmental clean up. Further, a single very large dose of a carcinogen, while not a full lifetime dose, has the potential to cause toxics related cancers due to the nature of dose response interaction of carcinogens at the cellular level. To allow such doses would subvert the very purpose of a clean up.

19. In an email dated August 14, 1992, Idaho Deputy Attorney General Curt Fransen emailed DEQ's Mr. Tim Teater and Mr. Frank Wilkoz directly raising these questions regarding large-dose short-term exposures.[4] During the TAPs rulemaking period, Mr. Teater served as an

[3] See Exhibit A.
[4] See Exhibit B.

Air Quality Toxicologist and was also heavily involved in the development of the original TAPs rulemaking and subsequent modifications. In his email, Mr. Fransen questions:

> 16.01.01012,13.g.iii. and iv. The standard for remediation sources raises some questions of a general nature. I don't have any answers but wonder if it makes scientific sense to directly convert risk of additional cancer based on lifetime exposure to risk of additional cancer based on less than lifetime exposure by assuming a directly proportional relationship between years of exposure and risk. Sorry that I can't properly express that but you probably get the drift. Other questions that seem to arise from simply allowing higher exposure where the length of exposure is shorter include the unknown or potential combined and synergistic effect of many short term or remediation sources or other sources in the same area and the potential of serial (one after another) short term or remediation sources. Lastly, how will the operational life of a source be determined. What if an applicant says they only intend to operate for five years (for whatever reason) so want the higher emission number to apply. There is incentive for facilities to argue they will be short-term. The spectre of serial short-term sources arises. Perhaps the definition can be clarified so there is less wiggle room.[5]

20. In a later and related email sent from Mr. Teater to Mr. Wilkosz on August, 26, 1992,[6] Mr. Teater states:

> We will need to talk about the environmental remediation source limit of five years to get a break on emissions. I am opposed to making that greater than five years. It seems that after five years most remediation sources would have emission BRC (Below Regulatory Concern) anyway. If not then they need to be treated as any other source.

21. A further review of the historical TAPs rulemaking record provides support for treating the AACC as annual, year-over-years limit rather than supporting the use of unique operational scenarios and exposure duration adjustments. The Idaho Department of Health and

[5] In my review of the historical TAPs rulemaking record, no direct reply from either Mr. Teater or Mr. Wilkoz to Mr. Fransen was found.
[6] See Exhibit C.

Welfare (IDHW) response to draft rule comments from the same Idaho DEQ 1993 TAPs rulemaking document that is cited within the Lopez Declaration[7] states:

> **Comment #108**: Section 203.05.g. Unit Risk Factors are based on a 70-year exposure. This is not appropriate for an industrial park situation that will never be a residential application. The refined analysis should be liberalized to include a different model, actual meteorological data, more appropriate risk factors, actual hours of operation, more accurate emissions factors obtained through source testing, more accurate annual potential to emit scenarios and any other justifiable refinements. New wording for this section has been suggested to reflect this.
>
> **IDHW Response:** The rules have been changed in response to this comment. IDHW agrees that for industrial areas that will never be used for residential purposes, a 70 year risk base may be conservative. However, it is hard to predict future land use patterns. Examples of unforeseen new land uses with significant environmental and human health concerns have become quite common.
> IDHW has based its emission numbers on the best available data. IDHW has strived to take a balanced approach taking into account the needs of industry to operate and the need to protect human health and the environment. Since it is not possible to account for such real life factors as lifetime exposures, additive or multiplicative effects of exposures to the large variety of industrial chemicals in use in Idaho, it is necessary to make our emissions standards generally applicable and reasonably conservative.
>
> It is not possible for IDHW to carve out special exemptions or emissions factors for potential or hypothetical new or modified industrial sources or exposure scenarios. Our rules must take a balanced approach that is generally applicable and consistently applied. IDHW can not develop special emissions factors specifically for industry dominated areas. IDHW believes that the revised Section 210. 02 Quantification of Emissions Rates and Ambient Concentrations, which allows site specific data gives adequate flexibility in compliance with toxic standards.

22. I found no additional documentation regarding additional discussions of dose-response relationships in the historical TAPs rulemaking record. Regardless, and more

[7] *See* Lopez Decl., Memo. in Supp. of Decl. at 8, 10-12.

importantly, the only less-than-lifetime exposure duration adjustment DEQ ultimately included within the original TAPs rule (or any subsequent versions) was the less than 5-year, ten-fold adjustment factor currently contained under IDAPA 58.01.01.210.15.

24. The Lopez Declaration states that the EPA's 1984 Health Assessment Document for Inorganic Arsenic guidance (EPA 1984 Guidance) concludes that arsenic has a linear dose response relationship.[8] Said another way, there is a high concentration dose of arsenic received over a short duration that is equivalent in risk to some corresponding low concentration dose of arsenic received over a longer duration. This is the underlying assumption that DEQ relies on when it applied the 16/70 Project-specific adjustment factor to assessing TAPs compliance for the SGP Permit.

25. It is important to consider the broader context of the EPA 1984 guidance and the assumption of linear dose response relationships. The EPA 1984 Guidance does not include any exposure duration adjustment equations that are presented in the Paden[9] and Lopez Declarations,[10] such as EC = [CA x ET x ET x ED]/AT, and that is the basis for the 16/70 Project-specific adjustment factor used for assessing TAPs compliance in the Permit. This equation did not appear in EPA Superfund risk assessment guidance until 2009, as the Lopez Declaration itself cites,[11] well after the original TAPs Rule was developed and promulgated.

26. Furthermore, the historical TAPs rulemaking record shows DEQ specifically rejected previously existing EPA Superfund risk assessment guidance and its use of exposure duration adjustments in consideration of risk and TAP exposure. The following documents confirm this conclusion.

[8] Lopez Decl. ¶ 12; *id.*, Memo. in Supp. of Decl. at 3-4..
[9] *See* Paden Decl. ¶ 12.
[10] *See* Lopez Decl. ¶¶ 22, 24; *id*, Memo. in Supp. of Decl. at 10-12.
[11] Lopez Decl., Memo. in Supp. of Decl. at 9.

27. A undated TAPs rulemaking concept letter[12] (herein referred to as the TAPs Concept Letter) addressed to a "Robert" (presumably Robert Wilkoz) and presumably from another DEQ staffer outlines the rationale behind changes within a modified draft TAPs rule. Within the letter it is stated:

> We also do not accept the EPA superfund risk assessment guidelines. Superfund guidelines are based on the concept that the exposures are of limited duration and do not have a large potential for multiple exposures. We can not make those assumptions for sources in Idaho, many of which involve either long term exposures or exposures to substances with a potential for multiple exposures. In Idaho, we are attempting to protect the public from the deleterious effect of multiple sources of a given pollutant or the additive effects of multiple pollutants over the course of a 70 year lifetime. If we could assure only a single exposure occupance, then accepting higher temporary risk might be justifiable.
>
> In addition we must consider the effects of the pollutant on the elderly, the very young and the infirm. By using "worse case" assumptions we are then able, under very limited conditions and when the public health would not be compromised, to deviate from the one in a million standard and apply a one in one hundred thousand as noted in the NSR policy. The use of this conservative approach allows us to be sure that actual risk is no greater than the risk figure on which we base our policy.

27. A January 23, 1992 unsigned draft letter to Mr. Charles Woods, Marketing Manager for MDT Corporation[13] (a presumed TAPs rulemaking industry stakeholder) from a DEQ staffer (presumably Mr. Wilkoz)[14] states:

> Our policy is based on a 1:1,000,000 risk at the nearest public access to the source. Risk is computed by multiplying the predicted (by the model) ambient concentration by the unit risk factor (URF) as published by the US EPA. Idaho does not accept the Superfund

[12] See Exhibit D.
[13] See Exhibit E.
[14] The draft email has handwritten mark-up addressed to a "Tim". Given the frequent emails, letters, and notes discussing TAPs concepts within the TAPs historic rulemaking documents between Tim Teater and Robert Wilkoz and the similarity in style between those documents and the January 23, 1992 draft letter, this "Tim" is presumed to be Tim Teater and the author is presumed to be Robert Wilkoz.

> risk assessment method for computing risk except for single, relatively short term exposures. Our risk assessment for continuous industrial or other large sources is based on the possibility of multiple, long term exposures.

28. A TAPs rule that allows for exposure duration adjustments and a risk assessment approach creates a problematic precedent, as is made evident by the following hypothetical scenario. If the SGP (or any subsequent source) is allowed to operate using exposure duration adjustments, an adjacent receptor (i.e., a human being) would be exposed to more than the intended annual allowable concentration of arsenic (the AACC) for 16 years. If, before the SGP operations end, the receptor moves and lives or works next to another facility or a new facility starts operations next to the SGP that applies an exposure duration adjustment for TAPs compliance (a process which could repeat indefinitely), by the end of the receptor's lifetime, it has been exposed to a TAPs concentration over the AACC for its entire life and its lifetime risk exceeds the intended 1-in-100,000 cancer risk level. In this scenario, the "spectre of serial short-term sources," as feared by Mr. Fransen in his email,[15] is apparent. Allowing the SGP to use the 16/70 Project-specific adjustment factor opens the door to a world in which the current AACCs in the TAPs Rule are effectively replaced by higher concentrations due to shorter than 70-year sources.

9. Contrast a hypothetical scenario where exposure duration adjustments are not allowed and the TAP AACCs are annual limits that must be met year-over-year by every facility in Idaho. In this case, no facility may emit TAPs at a concentration greater than the AACCs and a 1-in-100,000 excess cancer risk is preserved no matter where a receptor lives, works, or travels in Idaho during their entire life, and no matter what other facilities start operations. This scenario creates a simple and easy to implement rule that is broadly protective of human health and the

[15] *Supra,* ¶ 19.

environment and, as the Schilling Declaration itself notes, was the intent of the originally TAP rulemaking process.[16] Furthermore, this scenario is supported by the historical TAPs rulemaking record and best fits the intent of DEQ.

30. Given the full review of the above evidence and based on my experience as a Permit Engineer at DEQ, I conclude as follows:

a. During the TAPs rulemaking process, DEQ specifically considered the use of exposure duration adjustments and use of calculations akin to the 16/70 Project-specific adjustment factor, but ultimately did not incorporate their use within the TAPs rules; and

b. DEQ intended the AACCs to be annual, year-over-year concentration limits and included only a single short-term adjustment factor within the original TAPs rule for sources operating for 5-years or less; and

c. DEQ's application of the 16/70 Project-specific adjustment factor to demonstrate compliance with TAPs is not supported by the intent or language of the TAPs rule, and results in a degradation of the protection of human health and the environment that is otherwise the purpose of the TAPs rule.

B. DEQ and Perpetua incorrectly assume the 1-in-100,000 cancer risk rate, rather than the AACC, is the applicable enforceable "standard."

31. The Lopez Declaration points out that DEQ states that TAPs AACs and AACCs "are expressed in terms of ambient air concentration, but they are not ambient air quality standards"[17] and interprets this quote, and other related DEQ statements, to reach the conclusion

[16] Schilling Decl. ¶ 13.
[17] Idaho DEQ, *Idaho Department of Health and Welfare, Responses to Comments and Questions Submitted During a Public Comment Period and Public Hearings on the Proposed Repeal and Reissuance of Rules for the Control of Air Pollution in Idaho* (1993) at 10 (Comment 31).

that, "The AACCs are not one-year limits. Compliance with IDAPA 586 is not based on comparing annual air concentrations from the model to an AACC"[18]. Instead of using the AACCs as the enforceable "standard" the Lopez, Schilling and Lewis Declarations argue that remaining below the 1-in-100,000 acceptable excess cancer risk is the ultimate standard in which a facility demonstrates compliance with the TAPs rule.

32. However, Lopez, Schilling, and Lewis's understanding of increments, standards, and enforceable limits is misplaced. Labeling AACCs as "increments" versus "standards" is simply a naming convention rooted in previously existing CAA policy; the enforceable standard is the AACC as a year-over-year limit.

33. There is a distinction between the National Ambient Air Quality Standards (NAAQS) as "standards" and the TAPs as "increments." Under stationary source permitting, the NAAQS set ambient air concentration standards for seven federal Criteria Pollutants (like Particulate Matter [PM] and Sulfur Dioxide); those standards consider both the existing ambient background concentration of a given criteria pollutant, as well as the addition of the same pollutant from the stationary source that is to be permitted. For example, the current PM_{10} 24-hour NAAQS is federally set at 150 ug/m^3. This means that the public is entitled to ambient air with a PM_{10} concentration no greater than 150 ug/m^3. Thus, a facility can be permitted to emit some amount of PM_{10}, but that amount, in addition to the existing background concentration of PM_{10}, can not create a PM_{10} concentration greater than 150 ug/m^3 at the facility's property/operation boundary.[19] Additions of PM_{10} may come from a variety of stationary or

[18] Lopez Decl., Memo. in Supp. of Decl. at 12.
[19] REC 0679-80. Statement of Basis, Appx. B (Ambient Air Quality Impact Analyses Review Memorandum), Table 24.

mobile, permitted or unpermitted sources, but maintaining an ambient concentration of PM_{10} below 150 ug/m^3 is the ultimate standard.

34. The AACCs as "increments" are different in that they do not consider background concentrations of TAPs. Unlike Criteria Pollutants, DEQ does not regularly monitor the ambient concentrations of TAPs. There simply are too many TAPs (there are over 80 carcinogenic TAPs alone listed in IDAPA 58.01.01.586), they are state-specific (unlike Criteria Pollutants), and the cost to do so is generally accepted as prohibitive. Thus, during the historic TAPs rulemaking process the AACCs were implemented as "increments" versus "standards." Said another way, while it is infeasible to monitor and enforce an ultimate TAPs concentration standard, it is feasible to estimate the incremental increase in TAPs concentrations that a facility would cause.

35. The concept and naming convention of "increments" is not novel to TAPs. In 1977, Clean Air Act amendments introduced the Prevention of Significant Deterioration (PSD) program.[20] The PSD program also created "increments." As defined by the EPA, "PSD increment is the amount of pollution an area is allowed to increase. PSD increments prevent the air quality in clean areas from deteriorating to the level set by the NAAQS. The NAAQS is a maximum allowable concentration 'ceiling.' A PSD increment, on the other hand, is the maximum allowable increase in concentration that is allowed to occur above a baseline concentration for a pollutant. The baseline concentration is defined for each pollutant and, in general, is the ambient concentration existing at the time that the first complete PSD permit application affecting the area is submitted."[21]

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[20] U.S. EPA, *Evolution of the Clean Air Act*, available at: https://www.epa.gov/clean-air-act-overview/evolution-clean-air-act (last visited Sept. 30, 2024).
[21] U.S. EPA, *Prevention of Significant Deterioration Basic Information* (Jan. 17, 2024), available at: https://www.epa.gov/nsr/prevention-significant-deterioration-basic-information (last visited Sept. 30, 2024).

36. Both the TAPs AACCs and PSD increments are maximum allowable increases from a specific source. In developing the TAPs Rules, DEQ would have certainly been aware of the concept and naming convention of "increments." The TAPs definition of increments is best viewed through the lens of a *compliance period*, rather than implying they represent an *averaging period*, as the Lewis Declaration does.[22]

37. Evidence from the historical TAPs rulemaking record reinforces this and the conclusion that the use of the term "increment" within TAPs was to differentiate them from including background concentrations as "standards" do. During the 1995 period, DEQ made revisions to the original and previously promulgated TAPs rule. As part of that process, DEQ developed a TAPs rule amendment summary document.[23] Within that document DEQ notes:

> The proposed rule will divide consideration of incremental increases of TAP emissions into individual source and facility wide categories. Net emissions is a concept that adds increases and decreases of emissions from new sources of TAP together to obtain a net amount. That net amount is then compared to acceptable ambient levels also called increments for a permitting decision. **The acceptable ambient level is referred to as an increment because TAP emissions increases are limited to an incremental increase as opposed to an absolute limited ambient concentration** (emphasis added).

38. On the other hand, if you assume DEQ intended the 1-in-100,000 cancer risk to be the enforceable standard and not the AACC as annual, year-over-year limits, it would have needed to incorporate additional variables into the TAPs Rule to guide applicants on how to assess that risk. Completing a risk assessment that analyzes a facility's excess cancer risk traditionally involves consideration of more variables and factors than just exposure duration.[24] Sensitive populations, comorbidities, and synergistic effects of combined toxic exposure all

[22] Lewis Decl. ¶ 29.
[23] See Exhibit F.
[24] *See* von Lindern Decl. ¶¶ 73-74

affect the ultimate cancer risk from a facility's airborne toxic emissions. . However, as mentioned above, the original TAPs rulemaking process rejected the risk assessment method and prioritized creating a simple and easy to implement rule that is still protective of human health and the environment. Ultimately, using the AACCs as the "enforceable standard" is a far more effective standard to use in fulfilling this goal.

39. Given the full review of the above evidence, I conclude as follows:

a. The labeling of the AACCs as "increments" versus "standards" is a naming convention rooted in previously existing CAA policy and is a distinction in the consideration of pollutant background concentrations rather than an averaging period concept.

b. DEQ intended the enforceable "standard" to be the AACC as an annual, year-over-year limit.

C. Use of a 5-year rolling average for demonstrating compliance with the TAPs ruleT-RACT is inappropriate and not supported by Permit conditions.

40. DEQ used a 5-year rolling average to calculate TAPs emissions from the SGP. However, such an approach does not comply with the intent of the original TAPs rulemaking process or with the language in the TAPs Rule stating that the AACCs are annual, year-over-year limits.

41. The Statement of Basis for the Permit partially acknowledges that the AACCs are annual limits while introducing the use of what it calls a more "refined" analysis. As stated under Section 4.2 of the TAPs Addendum Modeling Review Attachment to the Statement of Basis, "Annual average emissions of carcinogenic TAPs are typically used in the dispersion model to estimate maximum annual impacts. [Perpetua] refined the analyses by using source-specific

emission rates that are representative of a 5-year averaging period. This approach is appropriate because carcinogenic impacts are of concern from a long-term exposure basis."[25]

42. Using a 5-year rolling average on the calculated arsenic emissions from the SGP allows for some years of the SGP's TAPs emissions to be considerably higher–and above the AACC–as long as some years within the same period are comparably lower. So much so, that it would be possible for the SGP to have TAPs concentrations over the AACCs for the first four years of its operation as long as emissions from the fifth year were drastically reduced compared to the previous four.

43. This outcome creates a problematic precedent as is evident by another hypothetical scenario. Consider again the "spectre of serial short-term sources" and the scenario in which a receptor is exposed to consecutive sources that have applied an exposure duration adjustments discussed above in Paragraph 28. In a modified scenario, the receptor is adjacent to the SGP for four years of high TAPs emissions, but then relocates adjacent to a different TAPs source before a fifth year of low SGP TAP emissions occurs. The new TAPs source is also a less than 70-year source using exposure duration adjustments with TAPs concentrations above the AACCs. The receptor will be consistently exposed to TAPs concentration potentially well over the AACC, and is accruing an excess cancer risk level above 1-in-100,000. Again, the AACCs are effectively replaced by higher concentrations due to less than 70-year sources using exposure duration adjustment factors and/or emission period averaging.

44. In order to avoid such a scenario, the Air Rules and the historical TAPs rulemaking record speak for themselves. As stated within IDAPA 58.01.01.203.03, "Compliance with all applicable toxic air pollutant carcinogenic increments and toxic air pollutant

[25] REC 0698. Statement of Basis, TAPs Addendum Modeling Review Attachment.

non-carcinogenic increments demonstrates preconstruction compliance with Section 161 with regards to the pollutants listed in Sections 585 and 586." IDAPA 58.01.01.586 then simply states, "The AACC in this section are annual averages."

45. Given the full review of the above evidence, I conclude as follows:

a. Calculation of the SGP's arsenic emissions by using a 5-year rolling average is contrary to the intent of the original TAPs rulemaking process and the Air Rules stating that the AACC are an annual, year-over-year limit.

b. Using a 5-year rolling average inappropriately allows individual years of excess TAPs emissions to be masked within an averaged period.

D. There is insufficient evidence to support the T-RACT analysis limiting the non-West End pit production limit.

46. The Board in its *Final Order* questioned whether total life-of-mine ore production from non-West End pits was properly constrained by permit conditions.[26] I do not have specific concerns about whether production from non-West End pits was properly constrained over the life of the mine. However, the Board was right in questioning whether production from all pits was properly constrained.

47. The AACCs are limits for which compliance must be demonstrated on an annual, year-over-year basis. This requirement self-selects the highest maximum annual emission scenario as the emissions scenario that must be analyzed for AACC and TAPs compliance. As previously mentioned, the TAPs Addendum Modeling Review Attachment within the Statement

[26] REC 3725-27.

of Basis acknowledges this requirement: "Annual average emissions of carcinogenic TAPs are typically used in the dispersion model to estimate maximum annual impacts".[27]

48. It is unclear from the permitting record what exact emission sources and which period of time Perpetua and DEQ considered in developing the 5-year rolling averaging period for emissions. However, the von Lindern Declaration further investigates this issue, demonstrating that the likely maximum annual emissions scenario from the SGP would have considerably higher arsenic emissions than currently calculated within the Permit.[28]

49. In order to comply with the AACCs and demonstrate TAPs compliance, DEQ should have: (1) determined the worst arsenic generation scenario from any single year of the SGP (likely to include 100% production from the West End Pit); (2) compared the modeled operation boundary arsenic concentration from the worst generation scenario to the AACC to evaluate TAPs compliance; and (3) include a maximum annual ore generation permit limit from the pit(s) that correspond to the worst arsenic generation to ensure TAPs compliance.

50. Given the full review of the above evidence, I conclude as follows:

a. DEQ did not appropriately analyze the maximum annual emissions scenario from the SGP and instead diluted the SGP'd arsenic emissions through the 5-year rolling average calculation.

b. The permit does not sufficiently constrain ore production from the SGP's pit(s) on an annual basis.

[27] Analyzing the worst case scenario during permit development is a common permitting approach both at large and within DEQ specifically for fairly obvious reasons; if compliance with NAAQS, TAPs and any other applicable standards can be shown for a facility's worst case emissions/operation scenario then compliance for all other emissions/operation scenarios is inherently shown.
[28] *See* von Lindern Decl. ¶¶ 56-63

51. I declare under the penalty of perjury under the law of the State of Idaho that, to the best of my knowledge, information, and belief, the foregoing is true and correct.

DATED: October 3, 2024

William Tiedemann

Exhibit A

IDAHO DEPARTMENT
OF HEALTH AND WELFARE

DIVISION OF
ENVIRONMENTAL QUALITY

1410 North Hilton, Statehouse Mail, Boise, ID 83720-9000, (208) 334-0502 Cecil D. Andrus, Governor Richard P. Donovan, Director

August 13, 1992

Ms. Joan Cloonan,
Idaho Association of Commerce and Industry
P.O. Box 389
Boise, ID 83701

(HAND DELIVERED)

Dear Ms. Cloonan:

Enclosed per Orville Green's promise to you is:

> The First Draft of the Proposed Rules for the Control of Toxic Air Pollutants in Idaho.

> A brief explanation of the changes that have been made per our discussions at our last meeting.

This draft is to facilitate our discussions only. As I am sure you are aware, all actual regulatory proposals will have to undergo legal review and be reviewed by the U.S. EPA for compliance with the 1990 Clean Air Act Amendments.

If you have any questions on the above material please call me (334-0422). We are looking forward to continued productive discussions with you and IACI.

Sincerely,

for

Robert Wilkosz
Bureau Chief
Technical Services Bureau
Division of Environmental Quality

:tt

Enclosures

cc: Dick Rush
Orville Green
Martin Bauer
Tim Teater
COF 1.1

Explanation of additions and changes.

The following is included as a brief discussion/explanation of the changes that the DEQ has made in our ideas for proposed toxic air pollutant rules. We have made every attempt to incorporate the suggestions made by IACI at the last IACI/DEQ meeting. These changes are for discussion only as they have not yet undergone legal review. The shaded portions are the changes made since our last meeting.

Environmental remediation source. This language was included for two reasons. First, we wish to encourage the rapid and effective remediation of environmental problems in other media. Remediation is a net benefit to the environment and as such, is to be encouraged when ever possible. However, we wish to reiterate that simply transferring a contaminant from one media to another is not acceptable remediation practice.

The second reason for this inclusion is that we do not think that it is reasonable to judge a source of five years or less duration by the same criteria as a permanent source. However, a remediation source cannot be allowed to produce emissions that have the potential to expose human receptors to a full lifetime dose of a TAP over a short period of time, especially a carcinogen, even in the interest of environmental clean up. Further, a single very large dose of a carcinogen, while not a full lifetime dose, has the potential to cause toxics related cancers due to the nature of dose response interaction of carcinogens at the cellular level. To allow such doses would subvert the very purpose of a clean up.

Short term source: This was included at the request of Mr. Dameworth of IACI to accommodate short term singular events. It was suggested, and we agree, that a source of five years or less should not necessarily be judged by the same criteria as permanent sources. However, as has been noted above, a short term source cannot be allowed to produce emissions that have the potential to expose human receptors to a full lifetime dose of a TAP especially a carcinogen. Again, as noted earlier, a single very large dose of a carcinogen, while not a full lifetime dose, has the potential to cause toxics related cancers due to the nature of dose response interaction of carcinogens at the cellular level. In view of the remediation adjustment factor, we consider an adjustment factor of 0.01 a reasonable compromise.

Environmental remediation or short term remediation adjustment factors. This language was included at the request of Mr. Dameworth of IACI. Mr Dameworth and others at IACI felt that language associating remediation sources with a one in ten thousand risk level (when figured in an equivalent manner as a permanent source) would inaccurately characterize the risk of these projects to the public. These draft adjustment factors are therefor added to make published risks for remediation sources seem equivalent to permanent sources. We are concerned, however, that these adjustment factors may serve to obscure the already minimal risks presented by remediation sources and compromise public confidence

in the permitting process.

The adjustment factors were arrived at in the following way. For remediation sources: five years divided by 70 years equals 0.070. This is roughly equivalent to a risk of one in ten thousand (actually a bit less). We have chosen not to make this a sliding scale calculation, ie 4/70, 3/70 etc. This was done for the reasons alluded to in the section above on environmental remediation sources.

For short term sources, it is our opinion that, since the purpose here is not necessarily to encourage operation of these sources, an adjustment factor equivalent to remediation sources is not appropriate. We do think, however, that allowing an increase in potential risk of one order of magnitude is acceptable. We believe that this factor would allow industry additional flexibility while still being adequately protective of the public health and the environment.

Approved fuels: This was deleted from the definitions at the request of IACI in order not to set precedent for other applications. This language was moved to the effected sections, 16.01.01012,02.d.vi and vii.

Section 16.01.01012,02.d.vii: This language was included to clarify the uses of laboratory equipment

Section 16.01.01012,02.d.x: This language was included to clarify the term recreational area.

Section 16.01.01012,13.g.ii,iii,&iv.: This language was included to clarify the procedures for permitting remediation and short term sources.

Section 16.01.01012,13.v: This section is included to clarify the modeling procedures. In general, we have attempted to describe the overall screening procedures from the most basic to the most sophisticated. Some of the specifics that are of interest are:

v.(a) This is a guide for the use of the TAP list in determining if further evaluation of TAP is necessary. As has been previously discussed, the TAP list with emissions screening levels is published in order that applicants have a ready reference to assist in the TAP permitting process. It has been our intent to make this list as comprehensive as possible in order that applicants have as much information at hand with out the need to do time consuming calculations and modeling when not necessary.

v.(b) Screening Modeling, first paragraph. The purpose here is not to re-approve EPA approved models, but to determine the appropriateness of the application. This is to save the applicant from doing work that ultimately will not be acceptable to the DEQ because an EPA model may have been used in an inappropriate application.

Because there are a large number of EPA approved models that can be used in the same general circumstances, DEQ review is to identify the most appropriate model for the situation. A modeling check list is available from DEQ to assist the applicant in this

process.

v.(c) This is the final step in quantification of emissions. As with screening level models, the language here is expressly to avoid the use of an inappropriate model in a given situation.

v. (d) This language is to give an explanation of how we will deal with TAP that have no OEL or URF. We looked for a more general procedure to use as opposed to a case by case method but we were unable to develop such a universal criteria. We have used the method described in the Draft Rules in the past in order not to impose a possibly unwarranted detection limit standard. By evaluating the physical and chemical properties of the substance in question, and comparing the results to chemicals for which exposure criteria are available, we were then able to propose an emissions limit that was acceptable to the applicant and DEQ.

Universal criteria that we have looked at have severe problems. Setting ELs at detection limits as has been done in the past may result in emissions limits that are unreasonably strict. A single value such as one pound an hour or one milligram per cubic meter etc. may be unreasonably strict in one instance but unreasonably liberal in another. Having no emissions or ambient criteria for TAP without an OEL or URF assumes that the lack of OEL or URF means that the compound in question is harmless. We would all agree that this assumption is unsupportable.

It is our position that the draft language represents a reasonable attempt to deal with this problem. In addition, the Division of Health is available to review the DEQ evaluation of the risk presented by a given emission level of a chemical.

Significant/significance. These terms are used throughout the Idaho Administrative Procedures Act (IDAPA). We believe that it would be difficult to remove this language entirely from the Toxics rules. We have attempted to address IACI concerns while at the same time preserving the integrity of the permitting process by adding the following language to the definitions Section 01.01003. 86, b. In reference to a net emissions increase or the potential of a source to emit a pollutant not listed in (a) above or in the New Source Review policy, any emission rate; or...

We would encourage IACI to bring specific proposals concerning the terms significant/significance to the next meeting for further discussion.

1ST DRAFT

PROPOSED RULES FOR THE CONTROL OF TOXIC AIR POLLUTION IN IDAHO

IDAPA 16.01.01003 -- DEFINITIONS.

~~*Approved Fuels. Natural gas, propane gas, liquified petroleum gas, distillate fuel oils, residual fuel oils, and diesel fuel; except that waste oil, gasoline, or refined gasoline are not approved fuels.*~~

Environmental Remediation Source. An emission source that functions to remediate or recover any release, spill, leak, discharge or disposal of any petroleum product or substance or any hazardous waste as defined by IDAPA 16.01.01003,44: from any soil or ground or surface waters. An Environmental Remediation Source shall have an operational life no greater than five (5) years from the inception of actual operations to the cessation of actual operations.

Short Term source. Any new source or major modification to an existing source, occurring one time only with an operational life no greater than five (5) years from the inception of actual operations to the cessation of actual operations. For the purposes of this act short term source includes pilot or experimental plants not covered in IDAPA 16.01.01012,02.d,x.

Pilot or Experimental Plant. An emission source that functions to test processing, mechanical, or pollution control equipment to determine full-scale feasibility.

Occupational Exposure Limit. Refers to airborne concentrations of substances and represents conditions under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effects. Occupational exposure Limits can be found in *Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices with Intended Changes for 1991-92 or the current edition*, adopted by the American Conference of Governmental Industrial Hygienists, or the National Institute for Occupational Safety and Health (NIOSH) current Relative Exposure Limit (REL), or the Occupational Health and Safety Administration (OSHA) Air Contaminate Standards, current Permissible Exposure Limit (PEL) or current Worker Protection Standards for Agricultural Pesticides promulgated by the Environmental Protection Agency under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). The above references are listed in descending order of precedence.

Unit Risk Factor. *These factors describe the probability of developing excess cancers over a 70 year lifetime exposure to 1 ug/m^3 of a given carcinogen. Unit Risk Factors Can Be Found in the Federal Register Vol. 56 No. 35 / Thursday, February 21, 1991 / Rules and Regulations Appendix V. or listed on the Integrated Risk Information System (IRIS) of the U.S. Environmental Protection Agency or listed in the Health Effects Summary Tables promulgated by the U.S. Environmental Protection Agency Office of Health Effects Assessment and the Office of Air Quality Planning and Standards. In the absence of U.S. EPA accepted risk factors, risk factors under review by the EPA Carcinogen Risk Assessment Verification Endeavor (CRAVE) shall be used on an interim basis.*

Reasonably Available Control Technology (RACT): *Reasonably available control technology is that control technology that would achieve the lowest emissions of any toxic air pollutant applicable to a given source using reasonably available and economically feasible control equipment. This may require technology that has been applied to similar, but not necessarily identical sources.*

.01.01012, PROCEDURES AND REQUIREMENTS FOR PERMITS TO CONSTRUCT AND OPERATING PERMITS.

.01.01012,02 Permit To Construct:

No owner or operator may commence construction or modification of any stationary source, major facility, or major modification after the effective date of Section 01.01012 without first obtaining a permit to constructfrom the Department which satisfies the requirements of this Section. No exemptions shall apply to any modifications to a major facility which has not been issued a permit, except that no permit to construct is required for ~~the following classes of equipment which have actual and allowable emissions of less than one hundred (100) tons per year of any air contaminant or and would not significantly increase the emissions of a major facility~~ sources which:

a. Have actual and allowable emissions of less than one hundred (100) tons per year of any air contaminant; and

b. Would not significantly increase the emissions of a major facility; and

c. Will not have an ambient air concentration of any air contaminant that would, as demonstrated using Department-approved methods:

   i. Cause or significantly contribute to a violation of an ambient air quality standard; or

   ii. Cause an ambient concentration in excess of one percent of the Threshold Limit Value; or

   iii. Cause a cancer-risk probability in excess of one in one million.

d. Which belong to one of the following classes of equipment:

i. Air conditioning or ventilating equipment not designed to remove air contaminants generated by or released from equipment.

ii. Air contaminant detectors or recorders, combustion controllers, or combustion shutoffs.

iii. Fuel burning equipment for indirect heating and for heating and reheating furnaces using gas exclusively with a capacity of less than fifty (50) million BTU's per hour input.

iv. Other fuel burning equipment for indirect heating with a capacity of less than one million (1,000,000) BTU's per hour input.

v. Mobile internal combustion engines, marine installations and locomotives.

vi. Stationary internal combustion engines fueled by natural gas, propane gas, liquified petroleum gas, distillate fuel oils, residual fuel oils, and diesel fuel; except waste oil, gasoline, or refined gasoline shall not be used, and in accordance with the following:

100 horsepower or less -- unlimited hours of operation;
101 to 200 horsepower -- 450 hours per month;
201 to 400 horsepower -- 225 hours per month;
401 to 600 horsepower -- 150 hours per month.

vii. Stationary internal combustion engines used exclusively for emergency power generation fueled by natural gas, propane gas, liquified petroleum gas, distillate fuel oils, residual fuel oils, and diesel fuel except waste oil, gasoline, or refined gasoline shall not be used, and which operate less than 200 hours per year.

viii. Laboratory equipment used exclusively for chemical and physical analyses, research or education, including ventilating and exhaust systems for laboratory hoods.

ix. Environmental characterization activities including emplacement and operation of field instruments, drilling of sampling and monitoring wells, and any

other activities specifically exempted by the Director.

x. Pilot or experimental plants located at least 1/4 mile from any recreational area which, for the purpose of this Section, is defined as any area, available to the public used for any recreational activity such as, but not limited to, city, county, state or national parks or recreation areas, play grounds, swimming pools, stadiums or ball-game fields or residence or other structure not occupied or used solely by the owner of the facility or the owner of the property upon which the facility is located; which operate less than one year; and which also meet one of the following conditions:

(a) Use a slip stream from an existing process stream not to exceed ten percent of that existing process stream; or

(b) Have actual uncontrolled emissions which are not significant.

xi. Any emission source or sources provided that the actual uncontrolled facility-wide emissions are not significant, and the uncontrolled emissions would not significantly contribute to ambient air quality concentrations.

xii. Any other class or size of equipment specifically exempted by the Director. A list of those sources unconditionally exempted by the Director will be maintained by the Department, and made available upon request.

01.01012,13. Procedure for Issuing Permits

a. General procedures ...

b. Additional procedures ... attainment or unclassifiable area ...

c. Additional procedures ... federal Class I area ...

d. Procedures for operating permits ...

e. The Department ... fluid model ...

f. Modification of permits ...

g. *Additional procedures for demonstrating compliance with the toxic substances requirements in Section 01.01011,01.*

i. *For sources not recognized by the Department as environmental remediation or short term sources that cannot demonstrate, using Department approved methods, that emissions of carcinogens contribute an ambient air cancer risk probability of less than 1:100,000 and that emissions of non-carcinogens contribute to an ambient air concentration of less than one percent of the Threshold Limit Value, a permit cannot be issued unless the source ~~has achieved the greatest degree of emission reduction that has been adequately demonstrated~~ can demonstrate that reasonably available control technology (RACT) as defined in EPA guidelines or as approved by the Director, can be installed and properly operated. A permit may be issued without the installation and operation of RACT if the associated health risks to the public from the operation of the facility have been declared acceptable by the Department's Division of Health.*

ii. *For remediation sources that cannot demonstrate, using Department-approved methods which may include the application of a remediation adjustment factor of seventy thousandths (0.070), an emission rate or acceptable ambient level for a non-carcinogen (AAL) of one one hundredth (1/100) of the appropriate OEL, as listed on Appendix A1 of the TAP list or an acceptable ambient level for a carcinogen (AALC), as listed on Appendix A2 of the TAP list, ~~emissions of carcinogens contribute an ambient air cancer risk probability of less than 1:10,000 and or that emissions of non-carcinogens contribute to an ambient air concentration of less than ten percent of the Threshold Limit Value~~, a permit cannot be issued unless the source ~~has achieved the greatest degree of emission reduction that has been adequately demonstrated~~ can demonstrate that reasonably available control technology (RACT) as defined in EPA guidelines or as approved by the Director can be installed and properly operated. A permit may be issued without the installation and operation RACT if the associated health risks to the public from*

the operation of the facility have been reviewed and declared acceptable by the Department's Division of Health.

iii Short term sources shall be treated the same as remediation sources except that a short term adjustment factor of 0.01 instead of a remediation adjustment factor of 0.07 shall be applied.

iv. For sources that can demonstrate, using Department-approved methods, that emissions of carcinogens contribute an ambient air cancer risk probability of less than 1:1,000,000 and that emissions of non-carcinogens contribute to an ambient air concentration less than one percent of the Threshold Limit Value, no additional procedures are needed.

v. Department-approved methods will consist of the following:

(a) Emissions Screening:
Comparison of maximum potential emissions to the screening emission limits for carcinogens and non-carcinogens as documented in Appendix A1 or A2 of the Toxic Air Pollutant list ~~as promulgated by the Director~~. Maximum potential emissions can be determined by actual emissions testing using U.S. Environmental Protection Agency approved methods ~~subject to review and approval by the Division of Environmental Quality~~ or estimates of the maximum potential emissions using standard scientific and engineering principals and practices subject to review and approval by the Director. If maximum potential emissions as determined using department approved methods as described in this Section are less than or equal to the screening emissions levels as listed on Appendix A1 or A2 of the TAP list, no further procedures for demonstrating compliance with the toxic substances requirements in Section 01.01011,01 will be required.

(b) Screening Modeling:
Screening modeling, using only U.S.

Environmental Protection Agency (EPA) currently approved models, applied according to EPA's Guidelines on Air Quality Models, and as determined appropriate for the application by the Director, may be done to conservatively determine ambient concentrations of a toxic air pollutant.

To determine an acceptable ambient level for a TAP when using SCREEN, T-SCREEN or other EPA approved models which use arbitrary meteorological data and predict maximum one (1) hour concentrations, multiply the maximum hourly concentration output by the model for a distance not greater than the facility property boundary nearest the source or, with department approval, the closest point of public access by a persistence factor of 0.15 to convert the hourly average to an annual average.

For a carcinogen, no further procedures for demonstrating compliance with Section 01.01011,01 will be required if the resulting product is equal to or less than the AALC as listed on Appendix A2 of the TAP list or if the resulting product when multiplied by the unit risk factor results in an ambient air cancer risk probability less than or equal to one in a million.

For a non-carcinogen, no further procedures for demonstrating compliance with Section 01.01011,01 will be required if the resulting product is less than or equal to one one hundredth (1/100 of the appropriate occupational exposure limit as listed on Appendix A1 of the TAP list..

(c). Refined Modeling

Atmospheric dispersion modeling, using only U.S. EPA currently approved models determined appropriate for the application by the Director, applied according to EPA Guidelines on Air Quality Models may be done to determine an ambient concentrations of a TAP. The procedures will be the same as for screening modeling except that a persistence factor shall not

be used.

(d) For any TAP for which there is no OEL or screening emissions limit or AALC listed on Appendix A1 or A2, the screening emissions limit and AAL or AALC will be determined by evaluation of the physical, chemical and toxicological properties of the substance in question and by comparison to physically, chemically and toxicologically related substances if any, on a case by case basis by the Director or the Division's Department of Health.

(e) Any other method approved by the Director.

insert table 1 here

TABLE 1. SOURCE TYPE/PERMITABLE RISK LEVELS

	AJUST-MENT FACTOR	DEMINIMUS	PERMITTABLE	NOT PERMITTABLE
NEW SOURCE	N/A	≤ 1:1,000,000	≤ 1:100,000	≥ 1:100,000
REMEDIATION SOURCE	0.070	≤ 1:1,000,000	≤ 1:100,000	≥ 1:100,000
SHORT TERM SOURCE	0.010	≤ 1:1,000,000	≤ 1:100,000	≥ 1:100,000

Exhibit B

FROM: Fransen, Curt

TO: Teater, Tim
Wilkosz, Robert

DATE: 08-14-92
TIME: 11:51

CC:
SUBJECT: Toxic Air Rules
PRIORITY:
ATTACHMENTS:

My comments, briefly, are as follows:
-16.01.01.01012,02.d. By making this section an "or" section, in other words a section which categorically excludes certain classes of equipment from the permit requirement, some problems seem to arise with the less precisely defined classes from about viii onward. For instance, if a facility could jam themselves (such as INEL) into either the "laboratory equipment" or "pilot or experimental plant" class, the permit requirement would not appear to apply regardless of how large or hazardous the emission actually would be. I could see INEL argueing that everything they do is somehow for physical analyses or research (lab equipment class) or the testing of processing or mechanical stuff to determine full-scale feasibility (pilot or experimental plant class). The problem with these classes is that they are subjective and potentially broad as compared to the classes described by i through vii. Likewise, xi is vague and appears to duplicate at least some of the factors established by a, b and c.
-16.01.01012,13.g.iii. and iv. The standard for remediation sources raises some questions of a general nature. I dont have any answers but wonder if it makes scientific sense to directly convert risk of additional cancer based on lifetime exposure to risk of additional cancer based on less than lifetime exposure by assuming a directly proportional relationship between years of exposure and risk. Sorry that I cant properly express that but you probably get the drift. Other questions that seem to arise from simply allowing higher exposure where the length of exposure is shorter include the unknown or potential combined and synergistic effect of many short term or remediation sources or other sources in the same area and the potential of serial (one after another) short term or remediation sources. Lastly, how will the operational life of a source be determined. What if an applicant says they only intend to operate for five years (for whatever reason) so want the higher emission number to apply. There is incentive for facilities to argue they will be short-term. The spectre of serial short-term sources arises. Perhaps the definition can be clarified so there is less wiggle room.

Let me know if you want to discuss.

Exhibit C

FROM: Teater, Tim

TO: Wilkosz, Robert

DATE: 08-26-92
TIME: 15:28

CC:
SUBJECT: IACI toxics committee.
PRIORITY:
ATTACHMENTS:

---

1. Lori tells me that the AG's office has copies of all the state regs. Ill check on NY & NC.
2. We will need to talk about the environmental remediation source limit of five years to get a break on the emissions. I am opposed to making that greater than five years. It seems that after five years most remediation sources would have emissions BRC anyway. If not then they need to be treated as any other source.
3. The discussion on CRAVE was an increadable bunch of whining BS. Bitching for its own sake!
4. Section "d" about dealing with compounds that do not have emissions standards or URFs will be tough. As I mentioned to you, Pat and Dick Shultz supported my position on this. I can only think that we might come up with some rewording. I am totally opposed to the idea that if it has no emissions data then it should be uregulated.
5. Section "v" (a) we are asked to "prioritize emissions estimate data ie stack testing, AP-42, XWALK, etc. This is a stupid idea. I do not understand where Daimworth is coming from. Different emissions estimating techniques are appropriate for different situations. Stack testing is OK but even that depends on how much alike the processes and facilities are. Some of the stuff IACI has complained about is so self defeating.

REPLY FROM: Teater, Tim FROM: Wilkosz, Robert

TO: Teater, Tim

DATE: 08-26-92
TIME: 14:27

CC:
SUBJECT: IACI toxics committee.
PRIORITY:
ATTACHMENTS:

fyi

FORWARDED FROM: Wilkosz, Robert
FROM: Green, Orville

TO: Nagel, Joe

DATE: 08-26-92
TIME: 14:03

CC: Ledger, John
Wilkosz, Robert

SUBJECT: IACI toxics committee.
PRIORITY:
ATTACHMENTS:

We had a very good meeting. Even Mike Smith of FMC was helpful today. Joan Cloonan was on vacation. Dick Schultz and Pat McGavaran attended and helped considerably. Schultz was pleased with the meeting.

We have about a dozen items left, none unresolvable in my opinion, to work out. Wilkosz will chair the next meeting 9/14. We may schedule one more

meeting after that, but we are very close to referring the draft to the AG's office for review prior to public comment.

Afterwards, Dick Rush said that IACI was still discussing the issue, and he re-stated that they may still oppose the package once we conclude our discussions.

Exhibit D

Robert, this is a second draft - wadayathink? Please note that I'm shaky on the rational for using .15 for an annualization factor.'

This is to clarify the New Source Review Policy, as it regards its application to the construction of new sources of toxic air pollutants (TAP).

In applying the New Source Review policy to a potential source of TAP, the first aspect of the application that we look at is the screening emission limits. If the emissions out of the stack do not exceed our published emissions limits then the emissions are below regulatory concern for that process and pollutant.

If emissions are above the listed screening emissions limits then the SCREEN model is utilized to predict an ambient concentration. The DEQ, in order to have a conservative, "worse case" scenario, uses <u>full meteorology</u>, not just a particularly favorable stability class and or wind speed for the SCREEN model.

If predicted ambient concentrations are still above DEQ screening levels and if actual meteorological data is available, a more sophisticated model may be used to more accurately estimate dispersion data for TAP. Any model used must be EPA approved for the use and the results must be reviewed by our own meteorological staff.

When the TAP of concern are known or suspected carcinogens, the maximum hourly predicted concentrations are converted to an predicted annual concentration by multiplying the hourly concentrations by a conversion factor of .15. Derived from??

In the case of a substance of interest not being listed by DEQ or if there are no emission or ambient values listed, the substance must still be included in any emissions estimates and modeling. Potential risk associated with any unlisted substance or substance with out published values will be evaluated on a case by case basis by the DEQ.

Risk is calculated by multiplying the unit risk factor published by the EPA by the concentration obtained in the model. In general, the policy requires that risk at the facility fence line or the first point of public access from the source be equal to or less than one in a million.

We do not accept the first full time residence as the nearest point of public access except in very limited special circumstances. For instance, if a source was in an industrial area with very limited public access and the first regular public access was a nearby residence, then we may consider that residence as the first public access and analyze risk to the public accordingly.

We also do not except the EPA superfund risk assessment guidelines. Superfund guidelines are based on the concept that the exposures

are of limited duration and do not have a large potential for multiple exposures. We can not make those assumptions for sources in Idaho, many of which involve either long term exposures or exposures to substances with a potential for multiple exposures.

In Idaho, we are attempting to protect the public from the deleterious effect of multiple sources of a given pollutant or the additive effects of multiple pollutants over the course of a 70 year lifetime. If we could assure only a single exposure occupance, then accepting higher temporary risk might be justifiable.

In addition we must consider the effects of the pollutant on the elderly, the very young and the infirm. By using "worse case" assumptions we are then able, under very limited conditions and when the public health would not be compromised, to deviate from the one in a million standard and apply a one in one hundred thousand as noted in the NSR policy. The use of this conservative approach allows us to be sure that actual risk is no greater than the risk figure on which we base our policy.

For further information on the application of the New Source Review policy on TAP, please contact our office.

Exhibit E

DRAFT

January 23, 1992

Mr Charles Wood
Marketing Manager, Sterilization Equipment
MDT Corporation
P.O. Box 23077
Rochester, New York
14692-3077

Dear Mr. Wood,

Mr. Dan Heiser has asked me to respond to your recent enquiry about regulations concerning the emission of ethylene oxide (EO). The following explains the screening level review process for permits to construct new continuous industrial or other large sources.

Sources of EO emissions may be subjected to the Idaho New Source Review (NSR) policy for Toxic Air Pollutants (TAP) and may require a permit to construct (PTC). The screening level for emissions of EO into the ambient air is 6.7E-04 lb/hr. When that screening level is shown likely to be exceeded by mass balance or other acceptable engineering calculations, an Acceptable Ambient Level for a Carcinogen (AALC) is used as the next step in the screening process. The AALC was determined previously in the policy draft process. What we determine in the PTC or NSR process, is the ambient impact (concentration) of a given pollutant.

For EO the AALC is 1.0E-02 ug/m^3. In order to determine the AALC, the NSR policy requires that the source be modeled using SCREEN with full meteorology. If actual meteorological data is available, then that data should be used. If this modeling indicates that the screening AALC will be exceeded, then the applicant has the option of using a more sophisticated model to show that the AALC will meet NSR policy. Any model used must be US EPA approved for the use.

Our policy is based on a 1:1,000,000 risk at the nearest public access to the source. Risk is computed by multiplying the predicted (by the model) ambient concentration by the unit risk factor (URF) as published by the US EPA. Idaho does not accept the Superfund risk assessment method for computing risk, except for ~~single~~, relatively short term exposure. Our risk assessment for continuous industrial or other large sources is based on the possibility of multiple, long term exposures.

I have enclosed our NSR policy. That policy also outlines the decision guidelines for permitting sources of TAP based on risk or potential health impacts. If you have any further questions please feel free to contact me.

(334- ....)

Sorry Tim I meant as this tutorial sort of reminder to you

Tim my point is that we don't determine the AALC each PTC review, we determine the ambient level likely caused by the source & compare that to the AALC. right?

Exhibit F

Item No.:	Docket No.: 0101-9501	Program: Air Quality
Topic: Revision of the Toxic Air Pollutant Rules		
Status: Planned Rule	X Proposed Rule	Final Rule
Note:		
Date: Initial Publication 1/95	Board 6/95	Final Publication 8/95
Technical staff contact: Robert Wilkosz		Telephone: 334-5898

- This rule amends existing rules. The proposed rules address the permitting and exemptions from permitting, of new sources of toxic air pollution in Idaho.

- The proposed rule changes the regulatory basis on which Toxic Air Pollutants (TAP) are regulated. TAP were regulated based on the requirements to demonstrate compliance with the TAP Acceptable Ambient Concentration (AAC) increments. The proposed rule regulates TAP based upon the requirement to demonstrate compliance with section 161. This change was made to accommodate the other changes such as netting and interpollutant trading that provide for exceptions to the TAP increments.

- Below regulatory concern (BRC), Levels for TAP emissions have been established. These BRC levels have to do with record keeping, reporting, and self exemption from the requirements to obtain a permit to construct (PTC).

- The proposed rule will divide consideration of incremental increases of TAP emissions into individual source and facility wide categories. Net emissions is a concept that adds increases and decreases of emissions from new sources of TAP together to obtain a net amount. That net amount is then compared to acceptable ambient levels also called increments for a permitting decision. The acceptable ambient level is referred to as an increment because TAP emissions increases are limited to an incremental increase as opposed to an absolute limited ambient concentration.

  Source specific TAP emissions are those coming from one specific source within a whole facility under the following conditions: the emissions, without any air pollution controls must be less than the increment and with controls, the emissions must be less than or equal to the screening emissions level or the increment, which ever is greater.

- The proposed rule recalculates the way the increment for non-carcinogens is calculated. The current rules have increments based on an occupational exposure limit (OEL), divided by a total uncertainty factor of 100 with an annualized averaging time. The proposed rule will divide the OEL by 20 and decrease the averaging time to 24 hours.

- The proposed rule would eliminate remediation source factor and eliminate some TAP emissions from netting. The remediation source factor was a mathematical factor applied to the increment to allow a greater level of emissions for the short period of time (5 years) that a remediation source would operate. Remediation sources not specifically exempted from

netting requirements will be treated the same as other new sources. However, best available control technology (BACT) would be required if the TAP emissions from that source will exceed the AAC.

- The proposed rule will extend the concept of offsetting to TAP. Offsetting is allowing an increase in emissions of an air pollutant to be offset by a reduction in the same air pollutant from another source. In a circumstance that a source desires to construct a new source of TAP emissions but the new source can not meet the TAP emissions requirements, interpollutant trading provides an opportunity for that construction to go on while theoretically decreasing the over all risk from TAP emissions. The DEQ will use the EPA guidance contained in Section 112(g) of the clean air act or other EPA approved data bases or references to make all interpollutant trading determinations.

- This proposed rule is the result of numerous meeting with Idaho Association of Commerce and Industry, a number of other industrial representatives and some members of the public.

- Notification of the proposed rule will be published in the bulletin as well as various papers around the state. Public hearings are scheduled for Moscow, Pocatello and Boise. DEQ plans to submit the proposed rules the Board of Health and Welfare in June, 1995.

Item No.:	Docket No.: 01019501

CERTIFICATE OF SERVICE

I hereby certify that on October 4, 2024, a true and correct copy of the foregoing EXPERT DECLARATION OF WILL TIEDEMANN was served on the following by electronic service:

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