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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

NEZ PERCE TRIBE, IDAHO CONSERVATION LEAGUE, and SAVE THE SOUTH FORK SALMON,

Petitioners,

v.

IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY,

Respondent,

and

PERPETUA RESOURCES IDAHO, INC.,

Intervenor-Respondent.

Case Docket No. 0101-22-01
OAH Case No. 23-245-01

MEMORANDUM IN SUPPORT OF JOINT MOTION FOR RECONSIDERATION AND/OR CLARIFICATION OF FINAL ORDER

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INTRODUCTION AND BACKGROUND

On May 9, 2024, the Board of Environmental Quality (the "Board") issued a Final Order in this contested case. *See* REC 3695-3720. On four of the five claims presented, the Board found the Idaho Department of Environmental Quality ("DEQ") acted reasonably and in accordance with the law in issuing a Permit to Construct ("PTC") to Perpetua Resources Idaho, Inc. ("Perpetua") for the Stibnite Gold Project ("SGP"). REC 3698-3706. On the fifth issue, the Board held DEQ did not act reasonably and in accordance with the law when it analyzed ambient concentrations of arsenic from the SGP and determined those levels were less than the amount of arsenic that would contribute to an ambient air cancer risk probability of less than one to one hundred thousand (1:100,000). REC 3706-3717.

Specifically, the Board found that (1) there was insufficient evidence to support the T-RACT analysis limiting production from the non-West End Pits; (2) DEQ did not act reasonably and in accordance with the law when it applied an exposure duration of 16/70 to calculate the arsenic ambient concentration; and (3) DEQ did not act reasonably in using a five-year rolling average for T-RACT. *Id*. The Board's findings are factually and legally incorrect and are based on misunderstandings of DEQ's acceptable ambient concentrations for carcinogens ("AACCs") and the lifetime exposure risk represented in Section 586 of the Rules for the Control of Air Pollution in Idaho, IDAPA 58.01.01 (2022) (the "Air Rules").[1]

DEQ and Perpetua move the Board to reconsider and/or clarify its holding that DEQ's analysis of arsenic ambient concentrations was unreasonable and unlawful. The record before the Board confirms that DEQ issued the PTC in accordance with the Air Rules, that arsenic emissions from the SGP do not present an unacceptable risk to human health or the environment,

[1] Because the PTC was issued in June 2022, the 2022 version of the Air Rules applies.

and that the PTC as issued is a valid authorization to construct. If the Final Order stands, the Board will have improperly altered the meaning and interpretation of the Air Rules in a manner that is inconsistent with analytical methods and permitting tools that DEQ has utilized for over 30 years to implement its toxic air pollutant program. To ensure DEQ's toxic air pollutant program is administered consistently, correctly, and in compliance with the Air Rules, the Board must grant DEQ and Perpetua the relief requested.

RELIEF REQUESTED

Before addressing the relief requested, DEQ and Perpetua must first raise a procedural error in the Board's issuance of a "final order" that affords judicial review under I.C. § 67-5270. The Board issued the Final Order under I.C. § 67-5246 and also remanded this matter back to the Hearing Officer "for the development of further evidence" on DEQ's analysis of ambient concentrations of arsenic. REC 3717, 3720. The Board's issuance of a "final order" subject to I.C. § 67-5270 was error for two reasons.

First, a final order in a contested case is one that constitutes a final determination of the parties' rights. *In re Johnson*, 153 Idaho 246, 250 n.5, 280 P.3d 749, 753 n.5 (Ct. App. 2012). "If issues necessary for a final determination of the parties' rights remain unresolved, there is no final order." *Id*. Second, in reviewing a preliminary order, the Board can take one of three actions: "(a) Issue a final order in writing …; (b) Remand the matter for additional hearings; or (c) Hold additional hearings." I.C. § 67-5245(6). The word "or" in the statute is disjunctive, meaning that each item is considered an alternative to the others. *State v. Herren*, 157 Idaho 722, 726, 339 P.3d 1126, 1130 (2014). Having remanded this matter for additional, albeit narrow proceedings before the Hearing Officer, the Board cannot also issue a "final order."

That leads to DEQ and Perpetua's requested relief for reconsideration and/or clarification and the Board's options under I.C. § 67-5245(6):

- DEQ and Perpetua ask the Board to reconsider its decision regarding DEQ's analysis of arsenic ambient concentrations and issue a final order that finds DEQ acted reasonably and in accordance with law. The Board has the authority to do so under I.C. §§ 67-5246(4) and 67-5245(6)(a).
- Alternatively, DEQ and Perpetua ask the Board to reconsider its decision regarding DEQ's analysis of arsenic ambient concentrations and reopen the proceedings before the Board and hold an additional hearing on the analysis before issuing a final order. The Board has the authority to do so under I.C. §§ 67-5246(4) and 67-5245(6)(c).
- If, however, the Board remands for additional hearings before the Hearing Officer under I.C. § 67-5245(6)(b), DEQ and Perpetua ask the Board to reconsider and/or clarify its instructions on remand so that the Hearing Officer and the parties directly address the sufficiency of evidence the Board seeks in order to affirm the PTC.

In the event the Board decides to hold additional hearings or remand for additional hearings before the Hearing Officer, the Board must issue a non-final order finding that DEQ acted reasonably and in accordance with law on the first four issues considered and instructing the parties on the issues to be heard before the Board or on remand.

STANDARD OF REVIEW

Parties to a contested case may seek reconsideration or clarification of a final order within 14 days of the service date of the order. I.C. § 67-5246(4); IDAPA 04.11.01.740.02; IDAPA 04.11.01.770. While the Idaho Administrative Procedure Act and contested case rules do not address the standard for reconsideration, Idaho courts are well versed in such motions. The "purpose of a motion for reconsideration is to reexamine the correctness of an order." *Int'l Real Est. Sols., Inc. v. Arave*, 157 Idaho 816, 819, 340 P.3d 465, 468 (2014). A "'reconsideration in

the trial court usually involves new or additional facts, and a more comprehensive presentation of both law and fact. Indeed, the chief virtue of a reconsideration is to obtain a full and complete presentation of all available facts, so that the truth may be ascertained, and justice done, as nearly as may be.'" *Coeur d'Alene Mining Co. v. First Nat'l Bank of N. Idaho*, 118 Idaho 812, 823, 800 P.2d 1026, 1037 (1990) (citation omitted).

Here DEQ and Perpetua do not introduce new or additional facts but present a more comprehensive presentation of the law and facts in the record before the Board that bear on the incorrectness of the Final Order.

ARGUMENT

I. The Board must reconsider its holding that DEQ did not act reasonably and in accordance with law when it analyzed arsenic ambient concentrations.

For the reasons below, DEQ and Perpetua request that the Board reconsider the Final Order and either issue a final order that is factually and legally correct or hold additional hearings before the Board. *See* I.C. § 67-5246(4); I.C. § 67-5245(6)(a) and (c).

A. There is sufficient evidence in the record to support the T-RACT analysis limiting production from the non-West End Pits.

The Board erred in finding there was insufficient evidence to support the T-RACT analysis limiting production from the non-West End Pits. *See* REC 3713-3714. The Board misunderstood the life-of-mine production limits in PTC Condition 3.6 and the air emissions modeling and calculation supporting the T-RACT ambient concentration analysis for arsenic. As a result, the Board incorrectly concluded that the PTC must limit production from the non-West End Pits by 50% to demonstrate preconstruction compliance with the arsenic AACC.

1. Relevant background on DEQ's T-RACT ambient concentration analysis.

Petitioners did not challenge the absence of a production limit on the non-West End Pits. *See* REC 0263-0292, REC 3451-3507, C-REC 3647-3671. Thus, DEQ and Perpetua did not provide the Hearing Officer or the Board with the relevant background. We do so now.

DEQ initially modeled 14 hypothetical operating scenarios to evaluate the potential maximum hourly, daily, and annual emissions from all feasible origin and destination combinations for mining ore and development rock. REC 0431. As DEQ explained in the Statement of Basis, "Although drilling, blasting, excavating, and hauling activities are not expected to be confined to a single scenario in practice, emissions in each scenario were conservatively estimated at the maximum daily proposed processing rate … to allow for maximum operational flexibility, and to evaluate potential air quality impacts." *Id*. The operating scenarios for the West End Pit are identified as modeling scenarios W1-W5. *See id*. The operating scenarios for the non-West End Pits (Yellow Pine, Hangar Flats, and Bradley) are identified as modeling scenarios Y1, Y2, Y3, H1, H2, H3, H4, B1, and B2. *See id*.

To analyze the risk of carcinogenic toxic air pollutants, including arsenic, DEQ conducted modeling for the same operational scenarios using an emissions inventory that included T-RACT controls and long-term production limits that could be imposed in the PTC. REC 0701, 0714. The operating adjustments DEQ made include:

- The removal of modeling scenario W5 after Perpetua decided not to construct the West End developmental rock storage facility; and
- Limiting the West End Pit's life-of-mine production to 50% of SGP's total life-of-mine production of 788.4 million tons (50% * 788.4 million tons = 394.2 million tons).

REC 0699, 0710. SGP's total life-of-mine production limit is based on DEQ limiting the project's total production to 135,000 tons per day over the 16-year life of the mine. *See id*. To ensure compliance with the Air Rules' toxic air pollutant provisions, DEQ included PTC Condition 3.6, which limits the total life-of-mine production for SGP to 788.4 million tons from all deposits and 394.2 million tons from the West End Pit. REC 0385, 0421.

As a result, the West End Pit is limited to 394.2 million tons of production, the non-West End Pits are each individually limited to 788.4 million tons of production, and total maximum production from the SGP is limited to 788.4 million tons. DEQ's modeling of carcinogenic toxic air pollutants was based on the production limits in Condition 3.6. At those maximum production rates, DEQ modeled the remaining 13 operating scenarios on a receptor-by-receptor basis: the non-West End Pits (modeling scenarios B1, B2, H1, H2, H3, H4, Y1, Y2, and Y3) and the West End Pit (modeling scenarios W1-W4). REC 0710-0711, 0714, 1944-1945, 2144.

The non-West End modeling scenarios were based on 788.4 million tons of production for each operating scenario and showed compliance with the arsenic AACC. *See* REC 0710, 0714, 2144. West End modeling scenarios were based on 394.2 million tons of production for each modeling scenario, with the remaining 50% of production coming from the non-West End Pits. REC 0710-0711. Worst-case impacts for arsenic were associated with the West End modeling scenarios, due to the proximity of the West End Pit to the location of the maximum arsenic impact. REC 0714-0715. The West End modeling was performed on a receptor-by-receptor basis to identify the receptor site with the highest T-RACT ambient concentration of arsenic of all the receptor sites and all the modeling scenarios. REC 0711. That turned out to be West End modeling scenario W2. REC 0714.

2. A 50% limit for the non-West End Pits is unnecessary because the total production from the SGP cannot exceed 788.4 million tons.

The Board was unable to determine why and how the production of the non-West End Pits was adjusted and limited by 50% in the West End modeling scenarios. REC 3714. In particular, the Board cited the equation at REC 0710-0711 and reproduced at page 18 of the Final Order:

$$LifeExpose_{Wi,j,n} = [(WEPExpose_{Wi,n})(50\%) + (nonWEPExpose_{Sj,n})(50\%)]\left[\frac{16\ year\ LOM}{70\ year\ exposure}\right]$$

REC 3712. Referring to this equation, the Board asked where the 50% reduction for the non-West End Pits came from and why the PTC did not limit production from the non-West End Pits by 50%. REC 3714. The answers lie in DEQ's worse-case T-RACT modeling analysis, *see* REC 0699-0720 and the fact that the equation was used to calculate the lifetime arsenic exposure from the West End operating scenarios (W1-W4)—not the non-West End operating scenarios—on a receptor-by-receptor and scenario-by-scenario basis, REC 0710-0711.

Again, to ensure compliance with the highest modeled T-RACT ambient concentration (W2), the West End modeling scenarios were based on a maximum of 394.2 million tons (50% of 788.4 MT) of production as set forth in Condition 3.6, with the remaining 50% of production coming from the non-West End Pits. REC 0710-0711. This 50%–50% split is shown in the equation above. That is reasonable and logical: if the West End Pit is mined to its maximum allowed production of 394.2 million tons (which results in maximum modeled concentrations to demonstrate compliance under the W2 operating scenario), then total production from the non-West End Pits is limited to the remaining 50%. Further, if less than 50% production occurs from the West End Pit, then the production from the non-West End Pits will be more than 50%. And as noted, all non-West End operating scenarios demonstrated compliance with the PTC maximum production limit of 788.4 million tons.

In sum, with the West End Pit production limited by 50% in Condition 3.6, a second 50% limit for the non-West End Pits is unnecessary and would be redundant considering the total production from the SGP cannot exceed 100% (788.4 million tons). It follows that there is no need to establish a second 50% limit for the non-West End Pits. Contrary to the Board's decision, there was sufficient evidence in the record to demonstrate how the production of non-West End Pits was limited and why a permit condition limiting production from the non-West End Pits to 394.2 million tons was unnecessary to support the T-RACT ambient concentration analysis. The Board should grant reconsideration.

B. The record supports that DEQ acted reasonably and in accordance with the law when it adjusted the exposure duration for the arsenic ambient concentration analysis to reflect the 16-year life of the mine.

The Board erred in finding that the Air Rules do not allow consideration of an exposure duration of 16 years in determining preconstruction compliance with the AACCs under Sections 210.12 and 586. According to the Board, the Air Rules do not "provide that a project that will operate more than 5 years but less than 70 years may be adjusted in proportion to the amount of time it will operate." REC 3715. The Board could also not find sufficient evidence in the record to support DEQ's analysis and presumed a toxicologist or other qualified expert is needed to cure perceived evidentiary gaps. REC 3715-3717. The Board's conclusions are factually and legally incorrect and jeopardize the lawful, efficient, and effective permitting of toxic air emission sources in Idaho. The Board misinterpreted Rule 210.12 and 586 to require an annual compliance demonstration and ignored that the arsenic AACC is calculated based on 70 years of continuous exposure. The evidence in the record shows DEQ properly adjusted the T-RACT ambient concentration analysis for 16 years of exposure duration.

1. Compliance with the AACCs is not demonstrated based on an annual average but on EPA's lifetime inhalation unit risk factors.

DEQ and Perpetua first address the Board's flawed understanding of the cancer risk associated with carcinogenic exposure and misunderstanding that compliance with the AACCs is "based on annual averages." *See* REC 3708, 3712, 3713. Under its enabling statute, DEQ has the authority to utilize the best available peer reviewed science and supporting studies when adopting the Air Rules. *See* I.C. § 39-107D. DEQ did that here. DEQ adopted the AACCs and Unit Risk Factors ("URFs") in Section 586 based on EPA published toxicity values. As explained below, AACCs are derived from URFs. The Air Rules specifically identify "URF" to mean "Unit Risk Factor from the US Environmental Protection Agency." *See* IDAPA 58.01.01.106.19, .586 (2022).

Thus URFs and AACCs are not developed by DEQ. EPA develops toxicity values resulting from chronic exposure to chemicals and publishes them in the Integrated Risk Information System ("IRIS"), a database maintained by EPA and accessible at https://www.epa.gov/iris.[2] In the IRIS database, EPA refers to URFs as "inhalation unit risks" or "IURs," which it defines as "an estimate of the increased cancer risk from inhalation exposure to a concentration of 1 µg/m^3 for a lifetime. The IUR can be multiplied by an estimate of lifetime exposure (in µg/m^3) to estimate the lifetime cancer risk."[3]

[2] All websites were last visited on May 23, 2024.

[3] U.S. EPA, Basic Information about the Integrated Risk Information System, IRIS Toxicity Values, https://www.epa.gov/iris/basic-information-about-integrated-risk-information-system#process; *see also* U.S. EPA, IRIS Glossary, Inhalation Unit Risk, https://www.epa.gov/iris/iris-glossary (defined as: "The upper-bound excess lifetime cancer risk estimated to result from continuous exposure to an agent at a concentration of 1 µg/m³ in air. The interpretation of inhalation unit risk would be as follows: if unit risk = 2×10^{-6} per µg/m³, 2 excess cancer cases (upper bound estimate) are expected to develop per 1,000,000 people if exposed daily for a lifetime to 1 µg of the chemical per m³ of air.").

EPA uses 70 years to represent a lifetime.[4] Thus, a lifetime cancer risk of 1 in 1,000,000 means that, if 1 million people are continuously exposed to a defined level of a pollutant (the IUR) continuously for 70 years (*i.e.*, 24 hours a day exposure for 365 days a year for 70 years), one person may develop cancer.[5] *See also* REC 1242. For inorganic arsenic, EPA determined the IUR is 4.3E-3 per µg/m^3 (0.0043 / µg/m^3) based on respiratory cancer mortality observed in smelter workers. *See* U.S. EPA, Arsenic, Inorganic; CASRN 7440-38-2 at pp. 16-17.[6] This IUR estimates an increase in cancer risk of 1 in 1,000,000 cases at an arsenic air concentration of 2.3E-4 µg/m^3 (0.00023 µg/m^3) assuming continuous lifetime (70 year) exposure. *See id*. at p. 16. Because both the numerator and denominator of the IUR assume a 24 hour per day exposure for 365 days per year for 70 years, the calculation of EPA's arsenic air concentration is simply the risk divided by the IUR: 0.000001/.0043 per µg/m3 = 0.00023 µg/m3. *See id*.

Having originated from EPA's IRIS database, DEQ's arsenic URF (4.3E-3 per µg/m^3) and expression of the acceptable risk in the AACC (2E-4 µg/m^3) are the same as EPA's IUR and air concentration risk level for arsenic. *See* IDAPA 58.01.01.586 (2022). DEQ's definition of "toxic air pollutant carcinogenic increments" also makes clear that DEQ has adopted EPA's toxicity values and risk assessment methodology:

> Those ambient air quality increments based on the probability of developing excess cancers over a seventy (70) year lifetime exposure to one (1) microgram per cubic meter (1 ug/m3) of a given carcinogen and expressed in terms of a screening emission level or an acceptable ambient concentration for a carcinogenic toxic air pollutant. They are listed in Section 586.

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[4] U.S. EPA, Background on Risk Characterization, https://archive.epa.gov/airtoxics/nata/web/html/riskbg.html.

[5] U.S. EPA, AirTox Frequent Questions, Q1, https://www.epa.gov/AirToxScreen/airtoxscreen-frequent-questions#risk1.

[6] U.S. EPA, IRIS, Arsenic, Inorganic, https://iris.epa.gov/static/pdfs/0278_summary.pdf; https://iris.epa.gov/ChemicalLanding/&substance_nmbr=278;

IDAPA 58.01.01.006.125 (2022); *see also* REC 1242-1243. Without question, continuous exposure for a 70-year lifetime is accounted for and incorporated in the calculation of the AACCs. The value assumes the exposure duration and the lifetime are equal. The AACCs reflect that a person is exposed 24 hours per day for 365 days a year for 70 years at the AACC level.

Thus, the Board's finding the AACCs "are based on annual averages" is wrong. *See* REC 3708, 3712, 3713. The AACCs are not an annual standard. They are an expression of risk represented in DEQ's modeling analyses as an annual average concentration. As Section 586 states, "The AACC in this section *are* annual averages." IDAPA 58.01.01.586 (2022) (emphasis added). The rule does not specify compliance on an annual basis. Nor does Section 210.12. *See* IDAPA 58.01.01.210.12 (2022). Rather, *the AACCs are modeled as annual averages*, as opposed to daily or hourly averages, *for each year of the exposure duration*. The AACCs, as derived from EPA's published IUR values, do not prompt or require demonstration of compliance on an annual basis. Compliance is measured over the exposure duration.

2. Adjusting the T-RACT ambient concentration to reflect exposure duration is consistent with the Air Rules.

By adopting EPA's URFs, DEQ adopted EPA's implementation and application methods for analyzing toxic air pollutant ambient concentrations. That includes EPA's recognition that exposure duration is not always 70 years. When the exposure duration is less than 70 years, EPA describes how adjustments are made to correctly use the values, just as DEQ did here. EPA's "toolbox for exposure assessors" (called EPA ExpoBox)[7] explains that "[e]stimating exposure from inhalation requires information on the concentrations of contaminants in the air and *the*

[7] *See* U.S. EPA ExpoBox (A Toolbox for Exposure Assessors) (explaining that EPA ExpoBox "is a toolbox created to assist individuals from within government, industry, academia, and the general public with assessing exposure. It is a compendium of exposure assessment tools that links to guidance documents, databases, models, reference materials, and other related resources").

timeframe over which inhalation exposure occurs." Exposure Assessment Tools by Routes – Inhalation (emphasis added).[8] EPA also explains: "Using EPA's current methodology, it is unnecessary to calculate an inhaled dose when using dose-response factors from IRIS in a risk assessment. However, *inhalation risk assessments may require that an adjusted air concentration be used to represent continuous exposure*." *Id*. (emphasis added).

Thus, for AACCs to be applied properly, the ambient concentration being evaluated must be adjusted to reflect the exposure duration (ED). Otherwise, the comparison to the AACC will be incorrect. EPA uses an equation to determine the adjusted air concentration ($C_{air\text{-}adj}$), where for carcinogens the exposure is averaged over the assumed 70-year lifetime:

$$C_{air-adj} = C_{air} \times ET \times \frac{1\ day}{24\ hours} \times EF \times \frac{ED}{AT}$$

Where:
C_{air} = Concentration of contaminant in air (mg/m^3)
ET = Exposure time (hours/day)
EF = Exposure frequency (days/year)
ED = Exposure duration (years)
AT = Averaging time (days)

Id. In the equation, the concentration in air (C_{air}) is either a measured or modeled value. *Id*. The temporal parameters in the equation include:

- Exposure time (ET) and exposure frequency (EF), which "refer to the frequency with which the exposure occurs and might be provided in hours per day and days per year, respectively."

[8] *See* EPA ExpoBox, https://www.epa.gov/expobox/exposure-assessment-tools-routes-inhalation.

- Exposure duration (ED), which "is the amount of time that an individual or population is exposed to the contaminant being evaluated and is typically given in years."
- Averaging time (AT), which is the amount of time over which exposure is averaged for chronic assessments (*e.g.*, cancer).

Id. Since EPA's URF values are adopted at Section 586 as AACCs with an expected 70-year lifetime exposure, DEQ must adjust the arsenic concentration to reflect the exposure duration to ensure the comparison to the AACC is correct.

DEQ's evaluation followed EPA's framework to adjust the air concentration ($C_{air\text{-}adj}$) for an exposure duration known to be less than 70 years. *See* REC 0710. For the exposure duration, DEQ used the 16/70 adjustment following EPA tools established for URF values. *See id*. Specifically, again, the highest modeled T-RACT ambient concentration of arsenic resulted from West End modeling scenario W2. This is the C_{air} in EPA's equation above. That annual average modeled concentration was 0.00414 µg/m^3. *See* REC 2144.[9] Using EPA's equation for proper implementation of the URF to reflect exposure duration, the arsenic T-RACT ambient concentration (or $C_{air\text{-}adj}$) is:

$C_{air\text{-}adj}$ = 0.00414 µg/m^3 x 24 hours/day x 365 days/year x 16 years /
24 hours/day x 365 days/year x 70 years = 0.00095 µg/m^3

This is the correct T-RACT ambient concentration (0.00095 ug/m3) to compare to the T-RACT AACC representing a 1:100,000 risk probability (0.0023 ug/m3). *See* IDAPA 58.01.01.210.12 (2022). Further, using the arsenic URF in accordance with EPA, the risk probability is calculated from the highest modeled T-RACT ambient concentration (C_{air} of 0.00414 µg/m^3) using the exposure duration and averaging time:

[9] REC 2144 shows an adjusted ambient concertation of 0.00095 µg/m3, which is 0.00414 µg/m^3 * 16/70.

Risk = (0.00414 ug/m3 x 24 hours/day x 365 days/year x 16 years /
24 hours/day x 365 days/year x 70 years) x (4.3E-3 per $\mu g/m^3$) = 4.1E-06

A risk of 4.1E-06 is a risk of 4:1,000,000 or 1:246,056. In other words, DEQ's comparison demonstrated a risk probability of less than 1:100,000. REC 0710.

Using the correct T-RACT ambient concentration (or $C_{air\text{-}adj}$) to compare to the T-RACT AACC is required by the Air Rules. Section 210.12.b requires that DEQ *compare* the T-RACT ambient concentration to the T-RACT AACC to show compliance:

> Compare the source's or modification's approved T-RACT ambient concentration at the point of compliance for the toxic air pollutant to the amount of the toxic air pollutant that would contribute an ambient air cancer risk probability of less than one to one hundred thousand (1:100,000) (which amount is equivalent to ten (10) times the applicable acceptable ambient concentration listed in Section 586).

IDAPA 58.01.01.210.12.b (2022). By adopting the URF and EPA's methods for proper toxicity assessment, the T-RACT ambient concentration ($C_{air\text{-}adj}$) must reflect the exposure duration to make a proper comparison to the T-RACT AACC. If not, as the Hearing Officer recognized, the "comparison of emissions that will only take place for 16 years to a standard that is based on an assumed 70-year exposure period is an 'apples to oranges' comparison." REC 3418.

Thus, DEQ acted in accordance with the Air Rules and followed the proper framework for adjusting the exposure concentration for the actual exposure duration when the inhalation exposure is less than 70 years. REC 0710. DEQ demonstrated preconstruction compliance because the SGP's approved T-RACT ambient concentration at the point of compliance is less than or equal to an ambient air cancer risk probability of less than one to one hundred thousand (1:100,000). IDAPA 58.01.01.210.12.b and c (2022). DEQ compared the T-RACT ambient concentration to the T-RACT AACC, considering exposure duration (16 years) consistent with adoption of the URF-based arsenic concentration that defaults to lifetime exposure (70 years).

Contrary to the Board's holding, DEQ complied with the Air Rules by comparing the T-RACT ambient concentration (or $C_{air\text{-}adj}$) to the T-RACT AACC. *See* REC 3715.

For the same reasons, the record before the Board includes sufficient evidence to support how the exposure duration adjustment relates to human toxicology and cancer risk. REC 3715, 3717. No additional evidence from a toxicologist or other qualified expert regarding the protectiveness of the analysis performed by DEQ is necessary. *See* REC 3716. Sufficient evidence resides in the record and is grounded in the URF and AACC values selected by DEQ from EPA published toxicity values. DEQ's determination of acceptable risk is consistent with the adoption of those values and the framework to assess the acceptable risk from ambient air concentrations. All the information needed to perform these calculations is in the record before the Board. DEQ's 16/70 adjustment aligns with EPA's framework to reflect the exposure duration in carcinogenic risk reviews.

For those reasons, the Board should reconsider its decision that DEQ did not act reasonably and in accordance with the law when it applied an exposure duration of 16/70 to calculate the worst-case T-RACT arsenic ambient concentration.

C. The record supports that DEQ acted reasonably in using a five-year rolling average for T-RACT that was properly supported by permit conditions.

The Board also misunderstood the T-RACT production limits imposed in the PTC and how DEQ used those limits in modeling ambient concentrations of arsenic. REC 3712-3713. PTC Condition 3.5 limits the production of the SGP to 135,000 tons per year based on a five-year rolling average. REC 0385. The Board found "no evidence in the record explaining how the five-year rolling average comports with the annual AACC limits," assuming the AACCs "are based on annual averages" and the five-year rolling average "allows for a smoothing out of the peak concentrations of ambient arsenic." REC 3713.

As already explained, the Board erred in finding the arsenic AACC is an annual standard under Section 586 requiring a demonstration of compliance on an annual basis. The AACC is an expression of risk over a lifetime (70 years) of continuous exposure represented as an annual average. After confirming compliance with the 16-year exposure duration, DEQ determined that a five-year rolling average production limit ensured the mine is operated in a manner described in the compliance demonstration under Section 210.12.d. DEQ selected the five-year averaging period to provide Perpetua operational flexibility and ensure compliance with the 16-year exposure duration. Any averaging period on the production limit that is equal to or less than the exposure duration of 16 years is consistent with Sections 210.12 and 586 and will not increase or decrease the cancer risk.

The Board overlooked sufficient evidence in the record to determine that a five-year rolling average would be protective of the arsenic AACC. The Board should also reconsider its finding that DEQ acted unreasonably in using a five-year rolling average for T-RACT.

II. If the Board remands to the Hearing Officer to conduct additional hearings, DEQ and Perpetua seek reconsideration and/or clarification of the remand instructions.

In the event the Board remands for additional hearings before the Hearing Officer, DEQ and Perpetua also seek reconsideration and/or clarification of the Hearing Officer's role to develop and consider further evidence. In remanding this matter "for the development of further evidence," the Board specifically referenced evidence "regarding the ambient air concentrations of arsenic that will be produced by the SGP and whether those levels comply with the Air Rules." REC 3717. Those instructions seeming conflict with the Board's finding that the Air Rules do not allow a project operating more than 5 years but less than 70 years to "be adjusted in proportion to the amount of time it will operate." REC 3715. The Board should reconsider and/or clarify if the Hearing Officer can decide whether DEQ's analysis complies with the Air Rules.

In addition, as discussed above, the Board made multiple findings of insufficient evidence "to support DEQ's analysis of the ambient arsenic air concentrations." REC 3706. The Board found insufficient evidence to support the use of the five-year rolling average, REC 3713, and to demonstrate how or whether the non-West End Pit production was limited, REC 3714. Regarding DEQ's consideration of exposure duration, the Board found insufficient evidence to support DEQ's analysis using the exposure duration of the SGP (which it thought resulted in a higher exposure to arsenic for a shorter period of time) that is equally or more protective of human and animal life and vegetation than what is provided for by the Air Rules. REC 3715, 3717. The Board also found insufficient evidence "in the form of an expert opinion from a toxicologist or other qualified expert regarding the cancer risk associated with the 16/70 adjustment." REC 3716.

DEQ and Perpetua seek clarification and confirmation that the Hearing Officer can hear additional testimony on those issues from DEQ staff, for example Kevin Schilling and Mike Simon, who the Hearing Officer found were qualified to give expert testimony. S*ee* REC 3833-3834, 3918-3922. In addition, DEQ and Perpetua seek to confirm that the parties can retain a toxicologist or other qualified expert regarding the acceptable cancer risk associated with the arsenic URF and AACC. The Board should clarify if the Hearing Officer is empowered to add to the existing record regarding the specific areas of insufficient evidence found by the Board, make findings with respect to the sufficiency of the evidence presented, and determine whether DEQ's arsenic ambient concentration analysis complies with the Idaho Air Rules.

CONCLUSION

This contested case involves a complex and complicated PTC for operations that are varied in activity and location throughout the SGP mine site. It also involves a dense record compiled over years of DEQ review and the need to understand toxic air pollutant carcinogenic

increments and technical analyses using modeling to demonstrate compliance with those increments. The Board's Final Order includes factual and legal mistakes that cannot be left to influence this proceeding or DEQ's future toxic air pollutant permitting. The Board's conclusions are unjustified scientifically and undermine the expertise and experience of DEQ professionals implementing the toxic air pollutant program for over 30 years.

For those reasons, the Board must grant reconsideration and address the mistakes raised here. The Board has the authority to either issue a final order that is factually and legally correct or hold additional hearings before the Board. Should, however, the Board remand for additional hearings before the Hearing Officer, it should clarify the Hearing Officer's role in developing and considering further evidence on remand to ensure the Hearing Officer and the parties directly address the sufficiency of evidence the Board seeks in order to affirm the PTC.

DATED: May 23, 2024.

DEPARTMENT OF ENVIRONMENTAL QUALITY

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CERTIFICATE OF SERVICE

I hereby certify that on May 23, 2024, a true and correct copy of the foregoing MEMORANDUM IN SUPPORT OF JOINT MOTION FOR RECONSIDERATION AND/OR CLARIFICATION OF FINAL ORDER was served on the following:

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