

Quality (“Board” or “BEQ”) to vacate and withdraw the Permit and remand it to DEQ to correct such errors. On August 12, 2022, Perpetua filed a petition to intervene in the contested case proceeding, which the hearing officer granted on August 22, 2022.

Most relevant to this order are Paragraphs 55 and 56 of the Petition. They allege DEQ’s evaluation of the toxic air pollutant (“TAP”) arsenic underestimated emissions in three specific ways: (a) averaging emissions over a 5-year period; (b) averaging the estimated annual ambient modeling impacts across two multi-year scenarios; and (c) averaging the resultant 16-year total emissions over the 70-year human lifetime to assert compliance. (*See* Am. Pet. of 1/11/23, ¶¶ 55, 56.) Effectively, these allegations constituted three “sub-issues” of Claim No. 9 identified in the order on Perpetua’s motion to dismiss. (*See* Order of 11/15/22, at p. 9.)

On September 6, 2022, Perpetua filed a motion to dismiss the Petition. The hearing officer ruled on that motion on November 15, 2022. In doing so, the hearing officer identified 13 individual claims of error in the Petition. Pursuant to a stipulated scheduling order, the Petitioners filed a motion for summary judgment on April 14, 2023, and DEQ and Perpetua filed motions for summary judgment on May 12, 2023. As a result of the motion to dismiss and the motions for summary judgment, the Hearing Officer ruled in favor of DEQ and Perpetua on all 13 individual claims of error. (*See* Orders of 1/15/22 and 10/31/23.)

After the summary judgment decision, the Petitioners filed a petition for review of the hearing officer’s preliminary order with the Board, alleging: (1) the hearing officer erred, factually and legally, in upholding DEQ’s determination that Perpetua has legal control of the Stibnite Road Access Route such that the Route need not comply with ambient air quality standards; (2) in finding that Perpetua will preclude the general public from accessing locations within the ambient air boundary, the hearing officer lacked a reasonable factual basis and misapplied applicable

regulations, policy, and guidance; (3) the hearing officer failed to decide Petitioners' claim that DEQ violated the Clean Air Act and applicable state and federal rules and regulations by allowing Perpetua to submit plans with important project details in the future—after Permit issuance and without public comment; or to the extent that this claim was decided, the hearing officer erred; (4) the hearing officer erroneously determined that the Permit includes enforceable conditions that will achieve 93.3% dust control; and (5) the hearing officer misinterpreted and misapplied applicable rules to uphold DEQ's decision to artificially dilute the ambient arsenic concentrations attributable to the SGP by 16/70. (*See* Pet. for Rev. of Prelim. Order of 11/14/23, at p. 1.)

After briefing and motion practice before the Board, the Board issued orders on May 9 and June 12, 2024. Collectively, these two orders affirmed the hearing officer's summary judgment rulings on the first four of the above issues, but found that the hearing officer erred in ruling in favor of DEQ and Perpetua on the fifth issue regarding arsenic emissions. Specifically, the Board concluded that "DEQ did not act reasonably and in accordance with law when it analyzed the ambient arsenic air concentrations for the SGP." (Order of 5/9/24, at pp. 12-23.)

Therefore, the Board remanded the matter back to the hearing officer in order to address the following issues: (a) whether DEQ acted reasonably in using a 5-year rolling average for T-RACT that was not supported by permit conditions (*see* Order of 5/9/23, at p. 18); (b) whether there was sufficient evidence to support DEQ's T-RACT analysis regarding non-West End Pit production (*see* Order of 5/9/23, at p. 19); and (c) whether DEQ acted reasonably and in accordance with law when it applied the 16/70 adjustment to the acceptable ambient concentration ("AACC") for arsenic. (*See* Order of 5/9/23, at p. 21.)

The Board's remand includes instructions to provide the parties with "an opportunity to develop a full factual record on the arsenic issue...." (*See* Order of 6/12/24, at pp. 6-7.) However,

the Board denied requests from DEQ and Perpetua to provide “clarification and instructions to the Hearing Officer regarding the proceedings on remand....” (*See* Order of 6/12/24, at pp. 7-8.) So, while the Board articulated three narrow substantive issues to address on remand, it provided wide discretion regarding the procedures.

On remand, the parties agreed expert witness testimony would be necessary to address the issues identified by the Board, and they expressed a preference to forgo traditional written discovery and depositions of expert witnesses to explore the issues. Instead, the parties chose to disclose their expert witness opinions through the filing of declarations. Therefore, from August to October 2024, the parties filed a total of six expert witness declarations. These declarations put the parties and hearing officer on notice of the proffering party’s positions and opinions in advance of the hearing on the merits.

The hearing on the merits took place on October 17 and 18, 2024. All of the parties filed post-hearing statements on November 8, 2024, and Perpetua filed a reply brief in support of a previously filed motion to strike on November 13, 2024. Therefore, as of November 13, 2024, this matter has been fully submitted for decision by the hearing officer.

II. PRELIMINARY EVIDENTIARY RULINGS AND DISPOSITION OF PERPETUA’S MOTION TO STRIKE

The admissibility of exhibits was addressed during the hearing. The hearing officer did not deny any requests to admit an exhibit. The hearing officer admitted the following exhibits:

- Ex. 100 (Schilling (DEQ) decl.)
- Ex. 101 (Paden (DEQ) decl.)
- Ex. 200 (Lewis (Perpetua) decl.)
- Ex. 201 (Lopez (Perpetua) decl.)
- Ex. 203 (EPA Health Assessment guidance document)

- Ex. 205 (3/7/91 mem. from Wilkosz and Teater to Green)
- Ex. 208 (EPA Risk Assessment Guidance for Superfund, Vol. I: Human Health Evaluation Manual (Part 7 F, Supplemental Guidance for Inhalation Risk Assessment))
- Ex. 220 (demonstrative exhibit)
- Ex. 222 (poster with calculations)
- Ex. 221 (EPA guidelines for carcinogen risk assessment)
- Ex. 300 (DEQ Position on the Arsenic Modeling Addendum to the Perpetua Resources Stibnite Gold Project Permit to Construct Application)
- Ex. 301 (TAPs Modeling Addendum; Statement of Basis)
- Ex. 302 (von Lindern decl.)
- Ex. 303, 304 (Table C; TAP Maximum Modeled Concentrations and AACs)
- Ex. 305 (Tiedemann decl.)

In advance of the hearing on the merits, Perpetua filed a motion to strike particular references within the expert witness declarations filed by the Petitioners. (*See* Mot. to Strike of 10/14/24; Am. Mot. to Strike of 10/15/24.) In addition, during the hearing, Perpetua and DEQ lodged multiple objections to testimony offered by the Petitioners' witnesses pursuant to OAH Rule of Procedure¹ 482. Pursuant to Procedural Rule 512, and for the reasons below, the hearing officer denies the request to formally "strike" references from the record. However, pursuant to Procedural Rule 476, the hearing officer has taken the motion and objections under advisement in the evaluation of the credibility and testimony of the witnesses.

The judicial Idaho Rules of Evidence do not strictly apply to administrative hearings. *See*

¹ Office of Administrative Hearings, Idaho Rules of Administrative Procedure, IDAPA 62.01.01.

IDA. ADMIN. PROC.R. 475, 476; *see also* IDAHO CODE § 67-5251. According to the procedural rules for administrative hearings, “[e]vidence should be taken by the presiding officer to assist the parties’ development of the record, not excluded to frustrate that development.” IDA. ADMIN. PROC.R. 475. In addition, “[a] presiding officer is entitled to weigh the quality of evidence presented, including the credibility of witnesses,” and “may assign less weight to evidence that would otherwise be inadmissible under the Idaho Rules of Evidence.” IDA. ADMIN. PROC.R. 476. Moreover, as previously referenced, when the Board remanded this matter to the hearing officer, it did so with instructions to provide the parties with “an opportunity to develop a full factual record on the arsenic issue....” (*See* Order of 6/12/24, at pp. 6-7.)

Overall, the testimony offered by the Petitioners’ witnesses was relevant to the narrow arsenic issues identified by the Board for further deliberation. Had the Petitioners failed to comply with the Board’s directive to “focus only on the development of additional factual evidence on the ambient arsenic air concentration analysis,” *see* Order of 6/12/24, at pp. 7-8, formally striking testimony and sustaining objections would be appropriate. In light of the general relevance of the Petitioners’ testimony and the relaxed rules of evidence, the hearing officer does not find a compelling reason to formally strike testimony from the record and therefore denies the motion and overrules reserved objections from the hearing pursuant to Rule of Procedure 482.

Subject to that ruling, the hearing officer notes for the record that he has taken the motion and objections under advisement in evaluating the evidence pursuant to Procedural Rule 476. In general, the hearing officer agrees that, often, the Protestants’ witnesses Mr. Tiedemann and Dr. von Lindern testified regarding what they wished the Air Rules said, rather than what they actually say. The hearing officer also agrees that many of the exhibits offered by the Petitioners’ witnesses consisted of isolated references from prior rulemakings that lacked explanation of their context or

relevance to the interpretation of the plain language of the existing Air Rules. The Findings of Fact below reflect the hearing officer’s evaluation of the evidence pursuant to Procedural Rule 476.

III. FINDINGS OF FACT AND CONCLUSIONS OF LAW

A. Legal Background

1. Perpetua filed its air Permit application on August 20, 2019. (*See R.*, at REC0418 (Statement of Basis).)

2. DEQ issued the Permit on June 17, 2022.

3. At the time Perpetua filed its Permit application and DEQ issued the Permit, a prior version of the Air Rules was in effect, which this Order will cite as the “2022 Air Rules.”

4. In 2023, DEQ updated the Air Rules in connection with Governor Little’s “zero-based regulation” effort, which this Order will cite as the “2023 Air Rules.”² (*See Tr. of 10/17/24, 34:2-4 (Schilling/DEQ).*)

5. A “toxic air pollutant” (“TAP”) is defined as, “[a]n air pollutant that has been determined by the Department to be by its nature, toxic to human or animal life or vegetation and listed in Section 585 or 586.” *See* 2022 Air Rule 006.124, 2023 Air Rule 006.50.

6. Section 586 of the Air Rules identifies “arsenic compounds” as a TAP.

7. The TAPs program in Air Rule 586 is specific to the State of Idaho and is not part of Idaho’s approved state implementation plan overseen by EPA pursuant to the federal Clean Air Act. (*See Tr. of 10/17/24, 91:12-92:1 (Schilling/DEQ).*)

8. Based on the plain language of Air Rules 161, 210, and 586, the evaluation of toxic air pollutant emissions under those rules is inherently project-specific and is focused on the increased

² The 2023 rulemaking renumbered some of the 2022 Air Rules. When references to both sets of rules are the same, this Order simply cites to the “Air Rules.” When the same rule was renumbered in 2023, this Order will provide citations to both the 2022 Air Rules and the 2023 Air Rules.

cancer risk posed by the specific project proposed by the air permit application.

9. In other words, and by contrast, the TAPs evaluation is different than the evaluation of national ambient air quality standards (“NAAQs”), which is focused on the overall risk to the general public taking into account all sources of air pollution.

10. In a contested administrative proceeding, “[t]he agency’s experience, technical competence, and specialized knowledge may be utilized in the evaluation of the evidence.” IDAHO CODE § 67-5251(5).

B. As Long As the 16-Year Assumption Is Reasonable, DEQ Did Not Err in Adjusting Arsenic Exposure Concentration to Reflect an Exposure Duration of Less Than 70 Years, Because Doing So Is Standard Practice by EPA and Toxicologists

11. In order to obtain a permit to construct, the applicant must demonstrate preconstruction compliance with Air Rule 161. *See* Air Rule 203.03.

12. According to Air Rule 161, TAPs “shall not be emitted in such quantities or concentrations as to alone, or in combination with other contaminants, injure or unreasonably affect human or animal life or vegetation.”

13. A permit applicant may demonstrate preconstruction compliance with Air Rule 161 “[u]sing the methods provided in Section 210.” *See* Air Rule 203.03.

14. A permit applicant may demonstrate preconstruction compliance with Air Rule 161 by demonstrating “[c]ompliance with all applicable [TAP] carcinogen increments and toxic air pollutant non-carcinogenic increments....with regards to the pollutants listed in Sections 585 and 586.”

15. The Air Rules define “T-RACT” as “[a]n emission standard based on the lowest emission of toxic air pollutants that a particular source is capable of meeting by the application of control technology that is reasonably available, as determined by the Department, considering technological and economic feasibility. If control technology is not feasible, the emission standard may be based

on the application of a design, equipment, work practice or operational requirement, or combination thereof.” *See* 2022 Air Rule 007.12; 2023 Air Rule 210.

16. A permit applicant “may use T-RACT to demonstrate preconstruction compliance for [TAPs] listed in Section 586.” *See* 2022 Air Rule 210.12; 2023 Air Rule 210.12(a).

17. For the SGP, T-RACT for arsenic consists of the use of chemicals and water to suppress emissions from the disturbance of unpaved mine haul roads. (*See generally* Mem. Dec. and Prelim. Order of 10/31/23, at pp. 34-46.)

18. In order to use T-RACT to demonstrate preconstruction compliance for TAPs under Section 586, it is first necessary to identify the source’s “approved T-RACT ambient concentration at the point of compliance” for the relevant TAP (hereinafter, the “Approved Concentration”). *See* Air Rule 210.12(b).

19. Next, it is necessary to compare the Approved Concentration to “the amount of the [TAP] that would contribute an ambient air cancer risk probability of less than one to one hundred thousand (1:100,000)” (hereinafter, the “AACC” or “Acceptable Concentration.”) *See* Air Rule 210.12(b).

20. The amount of the [TAP] that would contribute an ambient air cancer risk probability of less than one to one hundred thousand (1:100,000) is “equivalent to ten (10) times the applicable acceptable ambient concentration listed in Section 586.” *See* Air Rule 210.12(b).

21. If the source's Approved Concentration is “less than or equal to” the Acceptable Concentration, then “no further procedures for demonstrating preconstruction compliance will be required for that toxic air pollutant as part of the application process.” *See* 2022 Air Rule 210.12(c); *see also* 2023 Air Rule 210.12(c).

22. Under Section 586, the acceptable ambient concentration of arsenic is an annual average of $2.3E^{-04} \mu\text{g}/\text{m}^3$.

23. Ten (10) times $2.3E^{-04} \mu\text{g}/\text{m}^3$ equals $2.3E^{-03} \mu\text{g}/\text{m}^3$.

24. Therefore, when T-RACT is utilized, the Acceptable Concentration for arsenic is an annual average of $2.3E^{-03} \mu\text{g}/\text{m}^3$, *i.e.*, $0.0023 \mu\text{g}/\text{m}^3$.

25. For more traditional emissions sources such as a factory, the predictability of the amount and location of emissions typically means that it is necessary to model only one emissions scenario. (*See* Tr. of 10/18/24, 268:23-269:1 (Lewis/Perpetua).)

26. Because the SGP has a complex emissions profile, in this case, Perpetua modeled fourteen “worst case” emissions scenarios. (*See* Tr. of 10/18/24, 268:19-269:8, 270:3-8 (Lewis/Perpetua).)

27. These modeling scenarios overestimate emissions by approximately 1.5 times to 3 times actual emissions. (*See* Tr. of 10/18/24, 273:14-19 (Lewis/Perpetua).)

28. For the SGP, the highest modeled annual average arsenic concentration was $0.00414 \mu\text{g}/\text{m}^3$. (*See* Tr. of 10/18/24, 277:3-13 (Lewis/Perpetua).)

29. However, for projects such as the SGP in which exposure is known to be for less than 70 years, it is inappropriate to compare this concentration to the Acceptable Concentration in order to determine compliance with Section 586.

30. For projects such as the SGP in which exposure is known to be for less than 70 years, failure to account for the true exposure period results in overstating emissions from the project. (*See* Tr. of 10/17/24, 39:2-7 (Schilling/DEQ).)

31. The table of Acceptable Concentrations in Section 586 contains a column labeled “URF.”

32. “URF” is a reference to “unit risk factors” developed by EPA. *See* 2022 Air Rule 106.19; 2023 Air Rule 586 (note below table). (*See also* Tr. of 10/17/24, 137:2-6 (Paden/DEQ).)

33. For air emissions, the URF is also described as inhalation unit risk (“IUR”). (*See* Tr. of 10/17/24, 182:16-19 (Lopez/Perpetua).)

34. The URFs/IURs developed by EPA are an estimate of the excess cancer risk resulting from continuous inhalation of a concentration of 1 microgram per cubic meter of a pollutant in the air over the course of an assumed 70-year lifetime. (*See* Tr. of 10/17/24, 135:10-13 (Paden/DEQ).)

35. Excess cancer risk is also described as an “increment.” (*See* Tr. of 10/17/24, 35:10-37:5 (Schilling/DEQ).)

36. The URFs/IURs are developed by EPA after extensive research by scientists, public health officials, and industry representatives, and represent a consensus of the best science regarding the potency of a given carcinogen. (*See* Tr. of 10/17/24, 188:2-16 (Lopez/Perpetua).)

37. The URFs/IURs adopted by EPA take into account, and are protective of, sensitive populations that are at increased cancer risk, such as pregnant women and young children. (*See* Tr. of 10/17/24, 138:18-23, 147:24-148:5, 172:5-21 (Paden/DEQ); 188:17-22 (Lopez/Perpetua).)

38. The Acceptable Concentrations listed in the last column of the table in Section 586 are calculated based upon the URFs in the same table. (*See* Tr. of 10/17/24, 126:9-14 (Schilling/DEQ).)

39. Because Air Rule 586 incorporates the URFs/IURs adopted by EPA, its Acceptable Concentrations (*i.e.*, AACCs) are inherently expressed as the annual average concentration over the course of an assumed 70-year lifetime.

40. The 2022 Air Rules, which were in effect at the time Perpetua filed its Permit application and the time DEQ issued the Permit, expressly reference the assumed 70-year lifetime for evaluating increased cancer risk from TAPs exposure. (*See* 2022 Air Rule 006.125.)

41. While that specific reference was eliminated from the 2023 Air Rules as a result of the zero-based regulation initiative, the result is the same, because Air Rule 586 incorporates EPA’s URFs, which are based on an assumed 70-year lifetime of exposure.

42. For the vast majority of projects for which an air permit is sought, the applicant and DEQ

assume the project will have an indefinite project life that exceeds the assumed 70-year lifetime on which the IURs/URFs are based. (*See* Tr. of 10/17/24, 21:12-25 (Schilling/DEQ).)

43. For projects with a project life of 70 years or more, direct comparison of the highest modeled annual average concentration to the Acceptable Concentration is appropriate for determining compliance with Section 586.

44. For projects with a known project life of less than 70 years, EPA adjusts the highest modeled annual average concentration to account for the different exposure durations in order to accurately calculate cancer risk with an Approved Concentration that is capable of comparison to the Acceptable Concentrations in Section 586. (*See* Tr. of 10/17/24, 143:21-144:1, 144:17-145:2 (Paden/DEQ); 190:1-5, 192:6-193:2 (Lopez/Perpetua).)

45. The Air Rules contain an adjustment factor for “short term” projects with an operational life of no more than five (5) years. *See* 2022 Air Rules 007.11, 210.15; 2023 Air Rules 007.08, 210.15.

46. For these short term projects, the Acceptable Concentration for carcinogens such as arsenic may be multiplied by 10. *See* Air Rule 210.15.

47. The adjustment factor in Section 210.15 was adopted primarily to address projects that are inherently short-term by nature, such as contamination remediation projects and pilot projects. (*See* Tr. of 10/17/24, 23:7-12 (Schilling/DEQ).)

48. The Air Rules do not expressly preclude adjusting exposure concentrations to account for projects with an operational life of more than 5 years and less than 70 years.

49. To the contrary, as previously referenced, Air Rule 586 contains an express reference to the URFs/IURs adopted by EPA, which are based on an assumed 70-year lifetime exposure.

50. EPA commonly utilizes the following formula to compare the exposure concentration from a project that operates for less than 70 years to the lifetime exposure concentration that would cause a

specified cancer risk: $EC = (CA \times ET \times (1 \text{ day}/24 \text{ hours}) \times EF \times ED) / AT$. (See Tr. of 10/17/24, 137:2-6, 139:15-21, 140:1-143:20 (Paden/DEQ); 191:14-20, 213:11-214:14 (Lopez/Perpetua); Ex. 101, ¶¶ 10-12 (Paden decl).)

51. EC represents the adjusted exposure concentration, expressed in $\mu\text{g}/\text{m}^3$.

52. CA represents the modeled contaminant concentration in air, expressed in $\mu\text{g}/\text{m}^3$.

53. For the SGP, CA equals $0.00414 \mu\text{g}/\text{m}^3$ for arsenic.

54. ET represents the exposure time and is assumed to be 24 hours/day.

55. EF represents the exposure frequency and is assumed to be 365 days/year.

56. ED represents the exposure duration in years.

57. DEQ assumed an exposure duration of 16 years for the SGP. The appropriateness of this assumption will be addressed in the next section of this order.

58. AT represents the averaging time expressed in number of days. As previously referenced, EPA assumes a continuous 70-year lifetime of exposure. Therefore, this variable is $365 \text{ days}/\text{year} \times 70 \text{ years} = 25,550 \text{ days}$.

59. To account for an exposure duration of less than 70 years, the adjusted Acceptable Concentration is calculated as follows: $(0.00414 \mu\text{g}/\text{m}^3 \times 24 \text{ hours}/\text{day} \times 1 \text{ day}/24 \text{ hours} \times 365 \text{ days}/\text{year} \times 16 \text{ years}) / 25,550 \text{ days} = 0.00095 \mu\text{g}/\text{m}^3$. (See Tr. of 10/17/24, 197:9-19 (Lopez/Perpetua); Tr. of 10/18/24, 278:21-279:6 (Lewis/Perpetua).)

60. An arsenic concentration of $0.00095 \mu\text{g}/\text{m}^3$ is less than the T-RACT-based Acceptable Concentration for arsenic of $0.0023 \mu\text{g}/\text{m}^3$.

61. Stated another way, the excess cancer risk from arsenic emissions at the SGP is 1 in 240,000, which is a smaller excess cancer risk than the T-RACT-based standard of 1 in 100,000. (See Tr. of 10/17/24, 200:13-19 (Lopez/Perpetua).)

62. Therefore, as long as DEQ’s assumption of a 16-year project life is reasonable, DEQ did not err in concluding that arsenic emissions from the SGP comply with Section 586.

C. Assuming a 16-Year Period of Exposure Without a Corresponding Permit Condition Was Reasonable Because Even if the SGP Operates for More Than 16 Years, the Cancer Risk Does Not Change As Long as the Permit’s Production Limits Are Satisfied

63. For emissions modeling, Perpetua and DEQ assumed the SGP would have an operating lifetime of 16 years.

64. This assumption is based on the calculation of how long it would take Perpetua to deplete the mined resource at the maximum authorized production rates under the Permit. (See Tr. of 10/17/24, 197:20-198:5 (Lopez/Perpetua).)

65. In issuing an air permit, DEQ “may impose any reasonable conditions...” Air Rule 211.01.

66. When it issued the Permit, DEQ did not include a condition expressly limiting the SGP to 16 years of operation.

67. The importance of the assumed 16-year project life to the Section 586 analysis above raises the issue of whether the lack of a Permit condition limiting the SGP to 16 years of operation was error.

68. Generally speaking, in toxicology, there are three broad categories of exposures to contaminants based on the duration of exposure—acute, sub-chronic, and chronic. (Tr. of 10/17/24, 145:8-146:13 (Paden/DEQ).)

69. The analysis of acute exposure generally focuses on exposure to contaminants lasting 24 to 48 hours. (*Id.*)

70. The analysis of sub-chronic exposure generally focuses on exposure to contaminants lasting 30 to 90 days. (*Id.*)

71. The analysis of chronic exposure generally focuses on exposure to contaminants lasting for

several months or more than one year. (*Id.*)

72. The calculation of cancer risk is inherently an evaluation of chronic exposure. (*Id.*)

73. The calculation of cancer risk pursuant to EPA’s IURs/URFs and Section 586 is linear, in that it is a function of only two variables—exposure concentration and exposure duration. (Tr. of 10/17/24 at 190:12-17, 202:11-203:17, 208:3-209:9, 211:12-212:1, 223:15-23 (Lopez/Perpetua); Ex. 208, p. 18 (EPA 2009, Risk Assessment Guidance); Ex. 221, app. A, p. A-10 (EPA 2005, Guidelines for Carcinogen Risk Assessment).)

74. This linear approach is generally considered to be conservatively protective of public health, including sensitive subpopulations. (*See* Tr. of 10/17/24, 190:12-17 (Lopez/Perpetua).)

75. Permit Condition No. 3.6 states: “The permittee shall haul no more than 788.4 million tons (MT) of ore and DR [development rock] from all deposits over the life of the mine and no more than 394.2 MT of ore and DR from the West End deposit over the life of the mine.” (R., at REC0385.)

76. Even if the SGP operates for more than 16 years, the cancer risk from arsenic exposure calculated pursuant to EPA’s IURs/URFs and Section 586 does not change as long as Perpetua complies with the production limits in Condition No. 3.6. (Tr. of 10/17/24, 169:18-170:5 (Paden/DEQ); 203:8-17, 208:3-209:2 (Lopez/Perpetua).)

77. Because the specific issues articulated by the Board on remand are limited to analysis of cancer risk from arsenic exposure, and because that risk does not change with a project life longer than 16 years if compliance with Condition No. 3.6 is achieved, DEQ’s decision not to including a Permit condition specifically limiting the life of the SGP to 16 years was not error.

D. Using a 5-Year Rolling Average to Evaluate Arsenic Emissions from the SGP Was Reasonable, Given DEQ’s Broad Discretion Regarding Monitoring Requirements Under the Air Rules, the Highly Variable Nature of SGP Emissions Over Time, and Section 586’s Focus on Project-Based Excess Cancer Risk

78. Condition 3.5 of the Permit states: “The permittee shall haul no more than 180,000 tons per

day (T/day) of ore and DR. The permittee shall haul no more than 135,000 T/day of ore and DR, based on a 5-year rolling average.”

79. As previously described, the Board remanded the matter back to the hearing officer to evaluate whether DEQ acted reasonably in using the above 5-year rolling average without further related permit conditions. (*See* Order of 5/9/23, at p. 18.)

80. When issuing a permit to construct, the Air Rules provide DEQ with authority to “impose any reasonable conditions upon an approval,” including a variety of conditions relating to ensuring compliance. *See* Air Rule 211.01.

81. The Acceptable Concentrations listed in Section 586 are exposure concentrations for calculating cancer risk that are expressed as “annual averages.” *See* Air Rule 586.

82. More specifically, the Acceptable Concentrations listed in Section 586 provide the basis for calculating the excess cancer risk created when humans are exposed to one (1) microgram per cubic meter of a given carcinogen at a specified concentration continuously for an assumed 70-year lifetime. (*See* 2022 Air Rule 006.125; *see also* Tr. of 10/17/24, 137:2-10 (Paden/DEQ), 195:4-8 (Lopez/Perpetua).)

83. In other words, if humans are exposed to the T-RACT-based Acceptable Concentration of arsenic continuously for 70 years, the probability that excess cancers will develop as a result of such exposure is 1 in 100,000, or 0.00001%. (*Id.*)

84. The Acceptable Concentrations are expressed as annual “averages,” not annual “limitations.” *See* Air Rule 586.

85. Because Section 586 and its Acceptable Concentrations are focused on calculating a cumulative cancer risk that accumulates over a continuous 70-year exposure period, it is not necessarily the case that monitoring emissions on an annual basis is necessary to achieve compliance

with those standards.

86. Aside from Section 211.01's statement that DEQ may impose "reasonable" conditions to achieve compliance, the hearing officer is not aware of any specific, applicable legal authorities governing the frequency and timing of any such monitoring requirements for the TAPs listed in Section 586.

87. On one end of the spectrum, in the short term, arsenic emissions at the SGP will be limited on a daily basis through Condition 3.5, which limits daily haulage of ore and DR to 180,000 tons. This short-term limit is primarily intended to ensure the SGP maintains compliance with NAAQS, rather than the TAPs program. (*See* Tr. of 10/17/24, 43:20-24 (Schilling/DEQ); Tr. of 10/18/24, 284:4-13 (Lewis/Perpetua).)

88. On the other end of the spectrum, in the long term, total arsenic emissions at the SGP will be limited through Condition 3.6, which limits total haulage of ore and DR for the life of the mine to 788.4 million tons facility-wide and to 394.2 million tons of ore and DR from the West End Pit.

89. Accordingly, even if Perpetua frontloads its daily haulage such that it is hauling 180,000 tons per day for as long as possible while maintaining compliance with the Permit, the overall cancer risk calculated pursuant to EPA and toxicological standards does not change because Condition 3.6 limits total exposure for the life of the SGP, however long that is.

90. In fact, even without limiting the five-year rolling average production to 135,000 tons per day as Condition 3.5 presently does, if Perpetua hauled up to 180,000 tons per day pursuant to the remainder of Condition 3.5, it would still not exceed the Acceptable Concentration.

91. This is because 180,000 tpd is 33.3% greater than 135,000 tpd. If the adjusted Acceptable Concentration of $0.00095 \mu\text{g}/\text{m}^3$ is correspondingly increased by 33.3%, the result is $0.001267 \mu\text{g}/\text{m}^3$, which is still less than the Acceptable Concentration of $0.0023 \mu\text{g}/\text{m}^3$ for arsenic.

(See Tr. of 10/18/24, 285:17-290:5, 296:25-297:10 (Lewis/Perpetua).)

92. For the vast majority of projects permitted by DEQ, the expected emissions over time are stable and predictable.

93. By contrast, levels of emissions of air pollutants from mining operations like the SGP can change greatly over time due to multiple factors, such as the mine's stage of development and the location of the specific deposit being mined at any given time. (See Tr. of 10/17/24, 41:2-19 (Schilling/DEQ); Tr. of 10/18/24, 259:23-260:24 (Lewis/Perpetua).)

94. For projects with highly variable emissions over time, assessing compliance strictly on an annual basis is not always appropriate. (See Tr. of 10/17/24, 40:2-7 (Schilling/DEQ).)

95. For projects like the SGP with highly variable emissions over time, a five-year rolling average of emissions is more representative of actual emissions from the project than evaluating emissions on an annual basis. (See Tr. of 10/17/24, 174:22-175:2 (Paden/DEQ); Tr. of 10/18/24, 291:21-24 (Lewis/Perpetua).)

96. Given all of these factors, pursuant to Air Rule 211.01, DEQ was reasonable and did not err in using the five-year rolling average to monitor and control emission from the SGP, and it is not necessary for the 135,000 tpd average production limit to be reduced to a daily limit in order to achieve compliance with Air Rule 586.

97. In fact, because Section 586 is focused on excess cancer risk posed by a project over the course of an assumed 70-year lifetime or the lifetime of a project that will last less than 70 years, the five-year rolling average approach in Condition 3.5 is stricter and more protective than Section 586 requires. (See Tr. of 10/17/24, 40:12-18 (Schilling/DEQ); 294:11-23 (Lewis/Perpetua).)

E. Because Production from the West End Pit Cannot Legally Exceed 50% of Total Production from the SGP, a Separate Permit Condition Limiting Production From Non-West End Pit Sources Is Not Necessary

98. As previously referenced, Condition 3.6 limits total haulage of ore and DR for the life of the

SGP to 788.4 million tons facility-wide and to 394.2 million tons of ore and DR from the West End Pit.

99. On remand, the Board expressed concern that it “could not identify a PTC condition that would limit the non-West End Pit production by 50%,” even though it observed in the record the use of an equation that “shows that the non-West End Pit production was also limited by 50%.” (Order of 5/9/24, at p. 20.)

100. Therefore, according to the Board, “there was insufficient evidence in the record to demonstrate exactly how or whether the non-West End Pit production was limited and, if it was, the Board of Environmental Quality could not find any PTC conditions able to enforce that reduction.” (*Id.*)

101. A map of the SGP is attached hereto as Attachment A. (*See* Ex. 200, Figure 1; R. at REC4145 (Lewis Decl.).)

102. As the map depicts, the West End Pit (“WEP”) is located close to the northeast boundary of the SGP.

103. As the map also depicts, the prevailing wind vector at the SGP is generally from the southwest to the northeast.

104. As a result of these factors (geography and wind), the highest modeled impacts to receptors at the SGP boundary came from emissions from the WEP area. (*See* Tr. of 10/18/24, 270:3-23 (Lewis/Perpetua).)

105. As previously referenced, Condition 3.6 limits total facility life-of-mine haulage to 788.4 million tons.

106. If 0% of the production occurs from the WEP and 100% occurs from non-WEP sources, then maximum modeled arsenic impacts remain well below the Acceptable Concentration.

107. As the production mix changes to introduce more production from the WEP and correspondingly less from non-WEP sources, there is a disproportionate increase in arsenic impacts.

108. The modeling demonstrates that when 50% of the production is from the WEP and 50% is from non-WEP sources, that is the point at which modeled impacts for arsenic equal the T-RACT-based AACC in Section 586.

109. In other words, if more than 50% of total production were to occur from the WEP, then the maximum modeled impact would exceed the Acceptable Concentration, and the SGP would be out of compliance with Section 586.

110. Therefore, under the Permit, production from the WEP cannot exceed 50% of total SGP-wide production.

111. A helpful visual depiction of this relationship is attached hereto as Attachment B. (*See Ex. 100, p. 12, Figure 1 (Schilling Decl.)*.)

112. Because Condition 3.6 limits WEP production to 394.2 million tons, and because 394.2 million equals 50% of 788.4 million tons, Condition 3.6 limits WEP production to 50% of total authorized production.

113. If 50% of total production from the SGP occurs from the WEP, then production from non-WEP sources is automatically limited to 50% of total production under the plain language of Condition 3.6.

114. If non-WEP sources account for more than 50% of total production at the SGP, then the SGP must correspondingly reduce production from the WEP below 50%.

115. As haulage from the WEP decreases and haulage from non-WEP sources increases, the modeled arsenic impacts decrease further and further below the Acceptable Concentration.

116. Therefore, it was reasonable for DEQ not to include a specific Permit condition

limiting non-WEP haulage to 50% of total mine haulage for the life of the SGP.

IV. PRELIMINARY ORDER

Based on the foregoing findings of fact and conclusions of law, the Hearing Officer hereby concludes: (a) DEQ acted reasonably in using a 5-year rolling average for T-RACT that was not supported by further permit conditions; (b) there was sufficient evidence to support DEQ's T-RACT analysis regarding non-West End Pit production; and (c) DEQ acted reasonably and in accordance with law when it applied the 16/70 adjustment to the AACC for arsenic.

All of the individual claims of error asserted in the Petitioners' Petition have now been resolved. Subject to the rights of the parties to seek further relief pursuant to the procedures below, the hearing officer concludes that DEQ did not commit reversible error in issuing the Permit to Perpetua. It is so ordered.

V. RULE 626 NOTICE

Pursuant to Idaho Code Sections 67-5243 and 67-5245, BEQ Rule of Procedure 003, and OAH Rule of Procedure 626:

This is a preliminary order of the hearing officer. It can and will become final without further action of BEQ, and without any further notice to you, unless any party requests that either the hearing officer or the BEQ review it. If no such request is made within fourteen (14) days of the service of this preliminary order, the order will become final, and you will then have twenty-eight (28) days to file a petition for judicial review with a district court, pursuant to Idaho Code Sections 67-5270 through 67-5279.

If you disagree with this preliminary order, you may file a "motion for reconsideration" with the hearing officer, or you may file "exceptions" and/or a "petition for review" with BEQ. You are allowed to file all of these.

If you would like to file a motion for reconsideration of this preliminary order with the hearing officer, you must do so within fourteen (14) days of the service date of this order. After the hearing officer receives your motion for reconsideration, he has twenty-one (21) days to rule upon it. If he does not issue a ruling within twenty-one (21) days, your motion will be considered denied.

If another party has filed a motion for reconsideration of this preliminary order, you must file any opposition brief within fourteen (14) days from the service date of the motion for reconsideration. No further briefing by any party will be permitted unless the hearing officer, in his discretion, requests it.

You may also file any exceptions you may have to this preliminary order, with a supporting brief, directly with BEQ within fourteen (14) days of the service date of this order, unless BEQ sets a different deadline.

If another party has filed exceptions to this preliminary order with BEQ, you must file any opposition brief within fourteen (14) days from the service date of the exceptions. No further briefing by any party will be permitted unless BEQ, in its discretion, requests it.

You may also file a petition for review regarding this preliminary order, with a supporting brief which sets forth the basis for review, directly with BEQ within fourteen (14) days of the service date of this order, unless BEQ sets a different deadline. BEQ may also notify the parties within fourteen (14) days of the service date of this order, that they, by their own choice, are reviewing this preliminary order, which notice will identify the issues BEQ will review. If a motion for reconsideration has been filed with the hearing officer, your petition for review, or BEQ's notice, does not have to be filed until fourteen (14) days after the motion for reconsideration process with the hearing officer is complete.


If another party has filed a petition for review of this preliminary order with BEQ, you

must file any opposition brief within fourteen (14) days from the service date of the petition for review. No further briefing by any party will be permitted unless BEQ, in its discretion, requests it.

If you would like to request oral argument regarding any motion for reconsideration, exceptions, or petition for review, you must state so in your filings. The decision whether to have oral argument is a decision for the hearing officer or BEQ to make, and they may decide to not have oral argument, even if you or any other party has requested it.

If BEQ reviews a preliminary order, it has the option of either issuing a final order, remanding the matter back to the hearing officer, or holding additional hearings. You will be notified of BEQ's choice if the preliminary order is reviewed.

Dated this 7th day of January 2025.

A handwritten signature in blue ink that reads "Dylan Lawrence". The signature is written in a cursive style with a long horizontal flourish at the end.

Dylan Lawrence
Hearing Officer

CERTIFICATE OF SERVICE

I hereby certify that on this 7th day of January 2025, I caused to be served a true and correct copy of the foregoing by the following method to:

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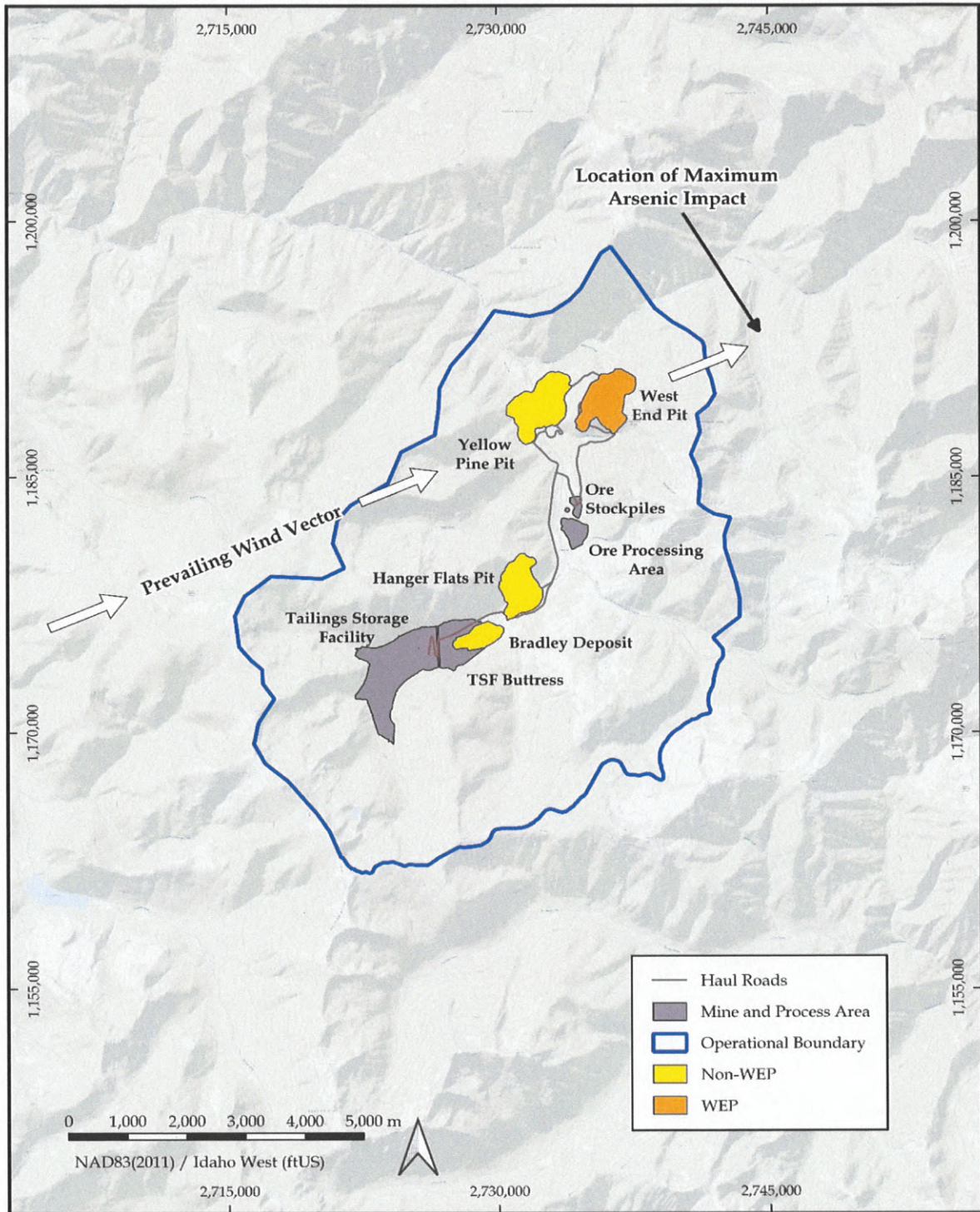
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Dylan B. Lawrence
Hearing Officer

Attachment A

EXHIBIT A
Figure 1. Location of Maximum Arsenic Impacts



Attachment B

assure that applicable emissions do not exceed the arsenic T-RACT AACC. Non-West End Pit production is limited to the facility-wide 788.4-million-ton limit for total hauling and excavation at the mine if there were no West End Pit production.

29. Production is effectively limited from non-West End Pit sources because of the following relationship:

$$\text{Production}_{\text{Non-WEP}} = \text{Production}_{\text{total}} - \text{Production}_{\text{WEP}}$$

Where:

$\text{Production}_{\text{Non-WEP}}$ = production from non-West End Pit Sources

$\text{Production}_{\text{total}}$ = Total allowable production.

$\text{Production}_{\text{WEP}}$ = production from West End Pit Sources (not to exceed 50% of $\text{Production}_{\text{total}}$)

30. The effect of a limit on total production and West End Pit production can be observed by showing how maximum arsenic impacts change with changes in the fraction of total allowable production that occurs from the West End Pit. This was done for the single receptor that had the highest overall exposure concentration. Figure 1 shows how the total adjusted impact is affected by changes in the West End Pit production. The Figure shows how total impacts increase as West End Pit production increases and non-West End Pit production decreases. Figure 1 also shows how impacts would increase above the adjusted combined impact of $0.00095 \mu\text{g}/\text{m}^3$ for West End Pit allowable production above 50% of the total allowable production from combined West End Pit and non-West End Pit sources.

