THOMAS C. HORNE
Attorney General
Firm State Bar No. 14000

JAMES T. SKARDON
State Bar I.D. No. 006973
Assistant Attorney General
1275 West Washington
Phoenix, AZ   85007
Telephone: (602) 542-8500
Environmental@azag.gov

Attorneys for ADEQ

BEFORE THE OFFICE OF ADMINISTRATIVE HEARINGS

In the Matter of:

ADEQ
Air Quality Permit No. 55223
Rosemont Copper Project

Place ID: 135845

No. 13A-A006-DEQ
No. 13A-A007-DEQ
No. 13A-A010-DEQ

ADEQ’s POST-HEARING MEMORANDUM
(Assigned to the Honorable Thomas Shedden)

The Arizona Department of Environmental Quality (“ADEQ”) hereby submits its Post-
Hearing Memorandum for these consolidated appeals. For the reasons set forth below,
Rosemont Copper Company (“Rosemont” or “RCC”) was entitled to the Class II air quality
permit ADEQ issued on January 31, 2013 (“Permit”). The Permit was issued in accordance
with applicable law, and ADEQ requests that the Administrative Law Judge recommend that
ADEQ’s decision be upheld, and all appeals denied.
STANDARD OF REVIEW

ADEQ accepts the statements of SSSR and Dr. Fisher with respect to the standard of review of ADEQ’s decision to issue the Permit: Appellants have the burden of proof, by preponderance of the evidence, to show that ADEQ’s decision to issue the Permit should be overturned.

THE PERMIT WAS ISSUED IN COMPLIANCE WITH APPLICABLE LAW

As the Administrative Law Judge is aware, the crucial question governing this appeal is whether ADEQ issued the Permit in compliance with applicable law. Making this decision requires determining what law applies. In its prehearing filings, and in the testimony at the hearing, ADEQ and its staff made clear what laws were controlling, and that Rosemont’s application met the laws which applied to it, so that, under these laws, ADEQ properly and legally issued the Permit.

A.R.S. § 49-427 is the governing statute for permit decisions, and provides that the ADEQ Director shall deny an air quality permit unless the applicant can demonstrate that the source is designed, controlled, or equipped with such air pollution control equipment so that it may be expected to operate without emitting or causing to be emitted air contaminants in violation of the provisions of the air quality statutes (Article 2 of Chapter 3 of Title 49, A.R.S.) or the rules adopted by the Director pursuant thereto.
The primary laws applying to the Permit are the rule governing permit applications, A.A.C. R18-2-304, and the rule covering what must be included in a permit, A.A.C. R18-2-306. This latter rule requires any permit to contain all enforceable emission limitations and standards, including operational requirements and limitations that ensure compliance with all applicable requirements at the time of issuance of the permit, and all operational requirements and limitations that have been voluntarily accepted by the applicant under A.A.C. R18-2-306.01. Rosemont accepted operational limitations under this latter rule so as to qualify for a Class II permit and not be permitted as a Class I “major” source under the Clean Air Act. (ADEQ-22 at AZRP01468).

As ADEQ personnel testified at the hearing, the agency thoroughly reviewed the Rosemont application to ensure that its application was complete and contained all information required by A.A.C. R18-2-304, that the emissions information was accurate, that the Rosemont mine qualified for the Class II synthetic minor permit it sought, that all applicable emission limits could be complied with, and that all such limits and other required operational controls were contained in the Permit as issued.

ADEQ also testified to what could not be required of Rosemont with respect to its permit application: Air quality dispersion modeling, which is currently limited in Arizona to certain major sources; and compliance with National Ambient Air Quality Standards (“NAAQS”), which is an obligation of the State under the Clean Air Act, but not a requirement for individual facilities seeking permits. ADEQ staff also mentioned the limitations on its authority set forth in A.R.S. § 41-1030(B), which provides as follows:
An agency shall not base a licensing decision in whole or in part on a licensing requirement or condition that is not specifically authorized by statute, rule or state tribal gaming compact. A general grant of authority in statute does not constitute a basis for imposing a licensing requirement or condition unless a rule is made pursuant to that general grant of authority that specifically authorizes the requirement or condition.

As testified to at the hearing, there is a proposed ADEQ rule which would require air quality modeling for permitting of facilities like Rosemont. However, as noted by ADEQ’s Eric Massey, this rule has a delayed effective date and will not go into effect until it is approved by the United States Environmental Protection Agency (“EPA”) as part of Arizona’s State Implementation Plan. (Hearing Transcript (“TR.”) at 3013). The absence of this rule does not affect the State’s current SIP, and the current Arizona program is fully approved under the Clean Air Act. (TR. at 3035, 3038). But until the new rule goes into effect, there is no specific authorization for ADEQ to require air dispersion modeling for a Class II permit like Rosemont’s, and the above statute precludes ADEQ making such modeling a condition for granting the Permit.

SSSR attempts to claim that A.R.S. § 49-427 is a “specific” statute which trumps the “general” statute of A.R.S. § 41-1030. ADEQ disputes this, but the argument fails anyway, because this rule of interpretation only applies if two statutes are in conflict. UNUM Life Ins. Co v. Craig, 200 Ariz 327, 333, 26 P.3d 510, 516 (2001). These two statutes are not in conflict; Section 49-427 requires a determination of compliance with State air quality laws, and Section 41-1030 requires permit decisions to be based on specific legal authority. ADEQ further discusses this issue below, in the section more directly responding to SSSR’s brief (P

With respect to what could be required for the Permit, the evidence showed that ADEQ staff carefully reviewed the Rosemont application and properly determined that it could be issued in compliance with applicable law.

**Rosemont Submitted All Required Information for Its Application**

On November 23, 2011, ADEQ received the Class II air quality application (ADEQ-1) from Rosemont Copper Company (hereinafter sometimes “Rosemont” or “RCC”), to construct and operate a new open-pit copper mine to be located at 21900 South Sonoita Highway, Vail, Arizona, in Pima County (“Mine”). (ADEQ-10 at AZRP01680).

ADEQ’s requirements for air quality permit applications are set forth at A.A.C. R 18-2-304 and Appendix 1 of A.A.C. Title 18, Chapter 2. In accordance with the licensing time frames (“LTF”) statutes at A.R.S. §§ 41-1072 to 41-1079 and the LTF regulations at A.A.C. Title 18, Chapter 1, Article 5, ADEQ’s review of an application for compliance with these requirements consists of two phases, administrative review and substantive review. The administrative review phase involves an analysis of the application to ensure that all of the information necessary for the issuance of the permit has been included in the application. The substantive review phase involves a detailed analysis of whether the submitted information is sufficient for making a permitting decision, and the development of an air quality permit and supporting technical documentation. (TR. at 63-64).
Rosemont’s Application Was Determined by ADEQ to be Administratively Complete

Required components of an air quality permit application include identification of the following: information about the owner and operator of the facility; all sources of air pollution associated with the operation, along with an estimate of the emissions rate from each source, and the total emissions from the entire facility; all applicable and proposed air pollution requirements and controls; any additional voluntary emissions controls that the facility will employ to comply with applicable requirements; and a demonstration that the source is designed, controlled and equipped with the appropriate controls such that the facility can operate in accordance with all of the applicable requirements. A.A.C. R18-2-304.

ADEQ conducted an administrative review of the Rosemont application pursuant to the LTF statutes and regulations and confirmed that the Rosemont application contained all components required by A.A.C. R18-2-304 and Appendix 1. (TR. at 473-78). ADEQ permit engineer Latha Toopal spent over 500 hours reviewing Rosemont’s application (TR. at 540), including confirmation that the application conformed with A.A.C. R18-2-304, and her conclusion that the application was complete was confirmed by her Section Manager, Balaji Vaidyanathan (TR. at 554). The application was deemed administratively complete under LTF rules on January 24, 2012. (TR. at 504-05).

ADEQ Determined That Rosemont’s Submitted Emissions Information Was Accurate, and That Rosemont Was Entitled To a Class II Permit

Subsequent to its determination of administrative completeness, ADEQ commenced a substantive review of the application to verify the information submitted in the application.
The review of the emission information was an important part of the process to ensure that potential emissions from the Mine are truly at levels where the facility would qualify for a Class II permit.

Under State law, at A.A.C. R18-2-302, a Class II permit is necessary for any facility that has uncontrolled emission rates of regulated pollutants above “significant” levels as defined in A.A.C. R18-2-101(130) but is not a “major source” of air pollution as defined in A.A.C. R18-2-101(75). The thresholds for major source applicability are two-fold. First, a source is a major source if it emits over 100 tons per year of any criteria air pollutant. By definition, fugitive emissions\(^1\) from copper mining operations, a non-categorical source (categorical sources are listed at A.A.C. R18-2-101(23)) are not to be considered in this evaluation. (TR. at 451-53).

For hazardous air pollutants, excluding radionuclides, a source is a major source if it emits 10 tons per year of any one hazardous air pollutant or 25 tons per year of a combination of hazardous air pollutants. A.A.C. R18-2-101(75)(b). By definition, fugitive emissions of hazardous air pollutants are to be considered in this evaluation. EPA has not yet promulgated a rule establishing major source thresholds for radionuclides, so they cannot be considered for calculating whether a facility is a major source of hazardous air pollutants (“HAPS”). (TR. at 450-51, 510-11). Rosemont presented evidence at the hearing that very little radionuclide emissions could be expected from the mine anyway, due to the very low percentage of uranium

\(^1\) “Fugitive emissions” means those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening. A.A.C. R18-2-101(59).
found in the mine ore body. (TR. at 2321-22).

With respect to hazardous air pollutants, ADEQ’s Eric Massey explained the legal obligations of Rosemont, and stated that, unless projected emissions of such pollutants exceeded the major source thresholds of 10 tons per year of a single hazardous air pollutant, or 25 tons per year aggregate emissions for these pollutants, copper mines, and Rosemont in particular, were not subject to Clean Air Act regulations governing such pollutants. (TR. at 55-56).

Rosemont’s application submittal “Volume 1: Calculation Methodology and Appendices A-G” (ADEQ-2) identified the methodology used by Rosemont to calculate potential emissions from its proposed mine, including the source of the emission factors it used in such calculations. The emission factors were determined using: (a) Compilation of Air Pollutant Emission Factors, Vol. 1: Stationary, Point, and Area Sources, Fifth Edition (AP-42); (b) emission limitations and standards; (c) material balances; (d) voluntarily accepted emissions limits; (e) Fugitive Dust Emission Factors for the Mining Industry from the American Mining Congress; (f) EPA Tanks Program 4.0; (g) emission rates from comparable equipment; and (h) manufacturer’s information. (ADEQ 2 at AZRP00564). The referenced documents are standard documents used by all regulatory agencies and EPA in determining air emissions from industrial processes.

Rosemont’s application (ADEQ-1) also summarized the emission calculations from each proposed process unit that has the potential to emit air emissions. The emissions were assessed for the following pollutants: particulate matter, particulate matter with an aerodynamic
diameter less than 10 microns (PM$_{10}$), particulate matter with an aerodynamic diameter less than 2.5 microns (PM$_{2.5}$), carbon monoxide, sulfur dioxide, nitrogen oxides, volatile organic compounds, sulfuric acid (H$_2$SO$_4$), hazardous air pollutants and greenhouse gases. (ADEQ-1 at AZRP00086-93).

The emission estimates were verified by ADEQ and recorded in an excel spreadsheet (ADEQ-5). Due to the nature of the mine operations, the potential emissions can vary from year to year. However, in order to determine the maximum potential emissions from the facility, ADEQ calculated the maximum emissions from each process irrespective of the year they might occur. (ADEQ-5 at AZRP01816-25; TR. at 2395-96). As noted above, ADEQ staff, notably Latha Toopal and Balaji Vaidyanathan, spent hundreds of hours reviewing Rosemont’s application and confirming the accuracy of the data it presented. ADEQ’s analysis confirmed that the facility was eligible for a Class II minor source permit based on its potential emissions. (Massey, TR. at 284; Vaidyanathan, TR. at 484, 636, 685-86; Toopal, TR. at 2148, 2157).

**Rosemont Was Entitled To Its Permit, and the Permit Contains All Required Components**

Upon completion of ADEQ’s review, ADEQ has the authority either to propose approval, or deny the application. A.R.S. § 49-427 requires ADEQ to deny an air quality permit application if the applicant does not demonstrate that the facility will be properly controlled and operated in compliance with provisions of the applicable statutes and rules. Otherwise ADEQ must proceed with the proposed and final issuance of the permit. ADEQ determined that the permit could be issued. (Massey, TR. at 81; SSSR-13 at SSSR 0927).
The Department subsequently drafted the proposed air quality permit (the final permit is ADEQ-9). ADEQ complied with A.A.C. R18-2-306 and incorporated the necessary permit provisions. (Vaidyanathan, TR. at 508-09). The applicable requirements from federal, state and county rules were incorporated. (ADEQ-22 at AZRP01471-73). The permit also incorporated applicable criteria that would effectively limit the facility’s emissions to minor source levels. (ADEQ-9 at AZRP01498, 01502-05). Examples are daily throughput restrictions, emission limits for cartridge filters, and so on. (Id.). Additionally, the permit included monitoring, recordkeeping and testing obligations to ensure that applicable emission and operational standards would be complied with. (ADEQ-9 at AZRP01505-08). Also, as required by A.A.C. R18-2-306, the permit referenced reporting requirements for the monitoring being conducted, ongoing compliance certifications, excess emissions and permit deviation reporting. (ADEQ-9 at AZRP01487-88).

**ADEQ Complied With Public Participation Requirements**

As required by A.A.C. R18-2-330, ADEQ published notice of the proposed permit for public review and comment for a 60-day period from August 6, 2012 through October 9, 2012. (SSSR-13 at SSSR0928). Upon request from the public, the comment period was extended until October 31, 2012. A public meeting was held on October 1, 2012, and the public hearing was held on October 9, 2012. (ADEQ-10 at AZRP01680). The extended public comment period and the public meeting were both measures beyond those legally required, and the Department also provided an extensive Responsiveness Summary (ADEQ-10) as required by rule R18-2-330.G.
As a result of the issues raised during public comments, the Permit was amended to include additional requirements, including a requirement to install and operate an ambient monitor for particulate matter to track real-world ambient air quality impacts, and a requirement to submit a significant permit revision to ADEQ to include the mine’s tailings management plan, thereby providing the public a separate opportunity to review and comment on the details of Rosemont’s tailings operations before they commence. (ADEQ-9 at AZRP01522).

**Air Quality Modeling**

Much of the testimony at the hearing, and many of the arguments of the Appellants, relate to claims that Rosemont failed to perform proper modeling of the effects of future emissions from the mine. As ADEQ staff repeatedly reminded everyone during the hearing, the modeling submitted by Rosemont was a submission that could not be required by ADEQ under current law, nor could ADEQ deny a permit to the mine if modeling predicted a potential violation of the NAAQS as a result of mine emissions. The modeling results, and protocols testified to, are thus irrelevant to any determination by the Administrative Law Judge as to whether the decision by ADEQ to issue the Permit should be upheld.

As explained by ADEQ Air Quality Division Director Eric Massey, to determine whether a permit must be issued under A.R.S. § 49-427(A), ADEQ looks at the specific requirements for the emitting facilities in the proposed permits, and looks at the control technologies proposed by the applicant to meet any emission control limits required by law for such equipment. Even if modeling shows a possible exceedance of a NAAQS, if an applicable
rule sets a specific emissions limitation standard for the emissions points of the proposed facility, and the applicant has made the demonstration that the controls it has proposed are designed to meet the applicable standard, and ADEQ’s experience or calculations show that the proposed facility can meet the limit, ADEQ cannot deny the permit based on the predicted NAAQS exceedance. (TR. at 106-07, 109, 125, 260) Nothing in any law says that the NAAQS is an applicable requirement for permitting a facility like the Rosemont mine. (TR. at 210).

ADEQ may, however, request modeling or perform modeling itself as part of the permit review process. ADEQ thoroughly reviewed the dispersion modeling protocol submitted by Rosemont (ADEQ-24). ADEQ’s review, under the supervision of Mr. Michael Sundblom, focused on assessing if the modeling conducted conformed with ADEQ’s air dispersion modeling guidance (ADEQ-7). Mr. Sundblom and his staff, notably Dr. Feng Mao, also referenced EPA guidance at 40 C.F.R. Part 51, Appendix W (November 2005) (SSSR-17) (Sundblom, TR. at 793-94) and EPA’s March 1, 2011, One-Hour NOx Classification Memorandum (SSSR-32). (Mao, TR. at 1198).

This review focused on, among other matters, the modeling program used, the validity of background concentrations, meteorological data, and anticipated source emissions data, and other assumptions necessary to run the model’s simulation of air quality impacts. Mr. Sundblom and Dr. Mao reviewed the revised, final modeling report submitted by Rosemont to ADEQ in July 2012 (ADEQ-8). Mr. Sundblom and Dr. Mao reached the conclusion that the program selected by Rosemont for modeling (AERMOD), and the conduct of the modeling, met all applicable regulatory rules and guidelines, and that the modeling showed that the
impacts from Rosemont mine’s expected emissions would be within National Ambient Air Quality Standards in ambient air. (TR. at 809). Mr. Sundblom and Dr. Mao based this on their review of the final report of the modeling results, and Dr. Mao’s analysis of the Rosemont modeling protocol, and its responses to his comments thereon. (TR. at 808-09).

The modeling program used by Rosemont, AERMOD, is an EPA-recommended program listed in 40 C.F.R. Part 51, Appendix W. Rosemont collected approximately three years of on-site meteorological data as well as three years of air quality data of particulate matter less than 10 microns, and ADEQ determined that the on-site ambient data collected by Rosemont met applicable quality assurance and quality control requirements. (TR. at 806).

ADEQ’s review of the Rosemont modeling was no “rubber stamp”. Dr. Mao specifically commented on several issues with the initial Rosemont modeling protocol submittal, including Rosemont’s proposed handling of the PM$_{10}$ “outlier”, the selection of the background monitoring data sits for NOx, PM$_{2.5}$ and Ozone, the Process Area Boundary, and the in-stack ratio for NO$_2$/NOx (SSSR-64; TR. at 1930). Dr. Mao consequently met with Rosemont’s consultants to discuss these modeling issues (SSSR-16; see, e.g., TR. at 1207). Mr. Sundblom and Dr. Mao further performed a comprehensive technical analysis to form their decisions (SSSR-64). Not until Dr. Mao and his supervisor, Mr. Sundblom, were satisfied that these matters were addressed appropriately could they conclude, as they ultimately did, that the Rosemont modeling results met ADEQ and EPA guidance. (TR. at 808, 1213). There is no evidence to show that “ADEQ simply accepted the selection of input data and procedures offered by Rosemont” as SSSR argues.
As ADEQ insisted, and as the Administrative Law Judge noted (TR. at 1030), the PM$_{10}$ sample “outlier” of 71.3 $\mu$g/m$^3$ was included in Rosemont’s final modeling report (TR. at 796-97), and even with its inclusion, the modeled result for PM$_{10}$ was within the NAAQS for this pollutant. The NO$_2$ background site, of Alamo Lake, was concluded to be acceptable because it was the best available site for such data which was not heavily influenced by urban traffic sources of this pollutant. (TR. at 800). The same consideration made the PM$_{2.5}$ and Ozone background data from the Chiricahua National Monument site more appropriate than the data proposed by Appellants, the Saguaro National Monument site very near Tucson. (TR. at 800).

**RESPONSE TO SSSR’s BRIEF**

**ADEQ Had No Authority to Require Rosemont to Perform Modeling or Demonstrate Compliance With the NAAQS**

SSSR’s arguments in its Post-Hearing Brief all share a major, fatal flaw: they rely on an assumption that ADEQ has authority to deny the Permit to Rosemont based on modeled NAAQS results. As was testified to repeatedly by ADEQ staff at the hearing, and particularly by Air Quality Division Director Eric Massey, ADEQ has no such right, so SSSR’s arguments are irrelevant to any determination by the Administrative Law Judge as to the legality of ADEQ’s Permit decision.

ADEQ does not have the authority to deny a permit based on a modeled NAAQS violation under A.R.S. § 49-427(A). That section provides that:

The director shall deny a permit or revision if the applicant does not show that every such source is so designed, controlled, or equipped with such air pollution control equipment that it may be expected to operate without emitting or without causing to be emitted air contaminants in violation of the provisions of this article.
and the rules adopted by the director.

Section 49-427(A) constitutes a general grant of authority. Under A.R.S. § 41-1030(B):

An agency shall not base a licensing decision in whole or in part on a licensing requirement or condition that is not specifically authorized by statute, rule or state tribal gaming compact. A general grant of authority in statute does not constitute a basis for imposing a licensing requirement or condition unless a rule is made pursuant to that general grant of authority that specifically authorizes the requirement or condition.

(Emphasis added.) There is no state statute or rule that would have specifically authorized ADEQ to deny or impose conditions on the Rosemont permit on the basis of potential violations of the NAAQS.2

The NAAQS regulations themselves do not apply directly to or require compliance by stationary sources. Rather, they are formulated as levels or standards for concentrations of pollutants in the ambient air without any reference to emission controls. For example, the PM$_{10}$ NAAQS in R18-2-201(A)(1) reads as follows:

The level of the primary and secondary ambient air quality standards for PM$_{10}$ is 150 micrograms per cubic meter of PM$_{10}$ - 24-hour average concentration.

In fact, with the exceptions discussed below, the Clean Air Act itself does not contemplate that stationary sources will be directly subject to the NAAQS. Rather, section 110 of the Act requires states to adopt state implementation plans (SIPs) that provide for attainment of the NAAQS. This is because NAAQS violations are typically attributable to a mix of mobile and stationary sources, so a comprehensive plan to achieve emission reductions from all

---

2 It should be noted that modeling can only show a potential violation. Compliance with the NAAQS is determined solely through ambient air monitoring. Moreover, since modeling analyses generally incorporate conservative assumptions, it is far from certain that a proposed facility with modeled NAAQS violations will
sources is usually needed to bring a nonattainment area into attainment. (Massey, TR. at 75-78, 309).

The exception to this general approach is in section 110(a)(2)(C) of the Clean Air Act, 42 U.S.C. § 7410(a)(2)(C), which stipulates that a SIP must include the:

regulation of the modification and construction of any stationary source within the areas covered by the plan as necessary to assure ambient air quality standards are achieved, including a permit program as required in parts C and D of [the Act].

Parts C and D of the Act establish, respectively, the prevention of significant deterioration (“PSD”) and nonattainment permitting programs for major stationary sources of air pollutants. (42 U.S.C. §§ 7470-7515). The PSD program specifically requires a modeling demonstration that emissions from a major source will not cause or contribute to a violation of the NAAQS. ADEQ’s rules, which are part of the SIP, include this requirement. See R18-2-406(A)(5). Rosemont, however, is not a major source and therefore not subject to PSD.

Section 110(a)(2)(C) and EPA’s implementing regulations require that certain minor sources also be subject to a preconstruction review process to ensure that they will not cause or contribute to a NAAQS violation. 40 C.F.R. § 51.160(a), (e) (Requiring States to determine if construction of facilities would interfere with NAAQS attainment, and to determine which facilities will be subject to preconstruction review.). The minor source permitting program in Arizona’s SIP, however, does not include this requirement.

produce actual monitored violations once it is constructed. (ADEQ-7 at AZRP06390).
To remedy this deficiency, ADEQ adopted new rule R18-2-334 in July 2012. See 18 A.A.R. 1542 (July 6, 2012). In the preamble for that rulemaking ADEQ acknowledged that the SIP-approved minor new source review program omits “explicit procedures designed ‘to assure that national ambient air quality standards are achieved.’” 18 A.A.R. at 1547.

If Appellants were correct and A.R.S. § 49-427(A) authorized the denial of a permit based on a NAAQS violation predicted by modeling, ADEQ never would have needed to undertake this rulemaking. In addition, R18-2-406(A)(5), the PSD provision discussed above, would be surplusage.

Once it goes into effect, A.A.C. R18-2-334 will give ADEQ the authority to require a demonstration of NAAQS compliance from all new sources requiring permits. However, A.A.C. R18-2-334 will not go into effect until it has been approved into the Arizona SIP by EPA. See A.A.C. R18-2-334(L) (SSSR-68 at SSSR 3109). It therefore did not apply to the Rosemont permit application.

Although ADEQ cannot deny a permit application based on a modeled NAAQS violation, the Department nevertheless often requests that permit applicants model for NAAQS compliance in order to avoid potential future NAAQS violations and the problems those violations would pose for both the public health and the permit applicant. As noted above, where NAAQS violations are monitored, the Clean Air Act requires the state to develop a plan, including enforceable emission limits for stationary sources, to remedy that violation and bring the subject area back into attainment. (Massey, TR. at 74-78, 3026-27). If a new source is the
primary cause of the violations, it will become the focus of those planning efforts and will likely be subjected to emission limits that require it to retrofit controls. (TR. at 78). Retrofitting an existing source with controls is often far more expensive than including those controls in a new source and can result in substantial downtime. It is therefore not in a company’s best interests to proceed with construction of a source that has the potential to cause or contribute to a NAAQS violation. (TR. at 79-80, 104).

When modeling predicts that a new source will cause or contribute to a NAAQS violation, ADEQ therefore seeks voluntary agreement from the permit applicant to install the controls necessary to bring the modeled concentrations below the NAAQS and to include permit conditions to make those controls enforceable. (TR. at 104). If a source refused to cooperate, however, ADEQ would not have the authority to deny the permit on the basis of the modeled concentrations for the reasons stated above. (TR. at 71). Fortunately, this has never occurred in the experience of current Air Quality Division staff. (TR. at 105-06).

**ADEQ’s Experienced Staff Thoroughly Reviewed Rosemont’s Application**

SSSR begins its brief by disparaging the expertise of the ADEQ staff who reviewed the permit. ADEQ finds this objectionable. There is no question that all staff who reviewed the permit were experienced and very knowledgeable in the areas for which they were responsible.

The primary review of the Rosemont application was performed by experienced ADEQ personnel, who devoted hundreds of hours to the task. Both the permit engineer, Latha Toopal, and her immediate supervisor, Balaji Vaidyanathan have engineering degrees from Arizona State University (TR. at 2145, 446), and together have considerable experience in evaluating
copper mines for compliance with State air quality laws. Mr. Vaidyanathan testified that he has
written at least six copper mining air quality permits at ADEQ, and that Ms. Toopal has written
at least four. Mr. Vaidyanathan has also extensively supervised the writing of such permits,
especially having overseen the issuance of every mining air quality permit in the State over the
previous 10 years. (TR. at 485).

Ms. Toopal spent hundreds of hours on the Rosemont application, including reviewing
the application for completeness, and the Rosemont emission figures for accuracy. Mr.
Vaidyanathan testified that he reviewed her work with her every step of the way, and also
reviewed the final permit line by line (TR. at 510, 580).

The modeling was reviewed by Michael Sundblom and Feng Mao. It is undisputed that
Mr. Sundblom has significant experience in air quality monitoring, having his degree in
atmospheric science, and having worked on and even designed air quality monitoring networks.
(TR. at 788). In his years of working in the area, Mr. Sundblom also actually wrote a number
of quality assurance plans for monitoring networks (TR. at 805-06), so his conclusion that
Rosemont’s plan contained the necessary components obviously carries weight. The main
modeling reviewer, Dr. Feng Mao, thoroughly established his credentials as such (TR. at 1124-
27), relating how he evaluated in detail the assumptions and data choices made in Rosemont’s
initial protocol submittal (TR. at 1140-62; 1194-1213). (SSSR in fact summarized Dr. Mao’s
critique, on pages 7-8 of its Brief.) Dr. Mao has run the AERMOD model countless times (TR.
at 1251), and is obviously familiar with it and with the applicable modeling guidance from
ADEQ and the EPA.
The Administrative Law Judge can make his own judgments as to the knowledge and credibility of all the witnesses at the hearing. ADEQ amply demonstrated that the permit review and decision was made by qualified, very experienced personnel.

Contrary to SSSR’s assertions (SSSR Brief, (“Br.”) at 5), ADEQ staff thoroughly reviewed the Rosemont application and confirmed to their satisfaction every material item of information submitted, including all information as to anticipated emissions from the Mine site. SSSR, moreover, has not disputed the accuracy of any of Rosemont’s submitted emissions information (other than NO₂/NOx ratio, discussed below), or ADEQ’s verification of the same, anywhere in its brief. Nowhere does SSSR dispute that Rosemont supplied all the information required for its application by A.A.C. R18-2-304, or that the Permit contains all the applicable operational and emissions controls required by State, local or Federal law.

SSSR’s only argument is that the State can require modeling and compliance with NAAQS, and that the modeling wasn’t done properly to show NAAQS compliance. As ADEQ pointed out repeatedly at the hearing, and as set forth above, this argument is incorrect, and the Administrative Law Judge should note that SSSR has effectively conceded that all other air quality laws were complied with. In its Post-Hearing Brief, SSSR is reduced to arguing that Rosemont and ADEQ did not comply with laws that do not apply to ADEQ’s permit decision. As can be seen below, SSSR cannot even show that Rosemont’s modeling was incorrect.
Rosemont’s Modeling Input Data and Procedures
Conformed to EPA and ADEQ’s Requirements

A. Rosemont’s Data Assumptions Were Representative and Appropriately Conservative.

SSSR (Br. at 9) claims that ADEQ failed to require “conservative assumptions” with respect to Rosemont’s modeling. In doing so, SSSR claims that “conservative assumptions” means “that the entity conducting the AERMOD analysis should select input that will result in the highest modeled and/or total concentrations,” and that when determining background concentration data, “the highest background concentration should be used.” While this is undoubtedly what SSSR wishes the rule to be, the argument is wrong. As established by Dr. Mao, and by the ADEQ and EPA guidance, the inputs and assumptions are required to be those which are most representative (ADEQ-7 at AZRP06405), and only when there is a range of representative possibilities should the more conservative figure be chosen. (TR. at 2949-50, 2937, 2124). The hearing record shows that this guidance was followed by Rosemont’s modeling.

B. Rosemont, with ADEQ Guidance, Chose the Most Representative Background Data Locations for Its Modeling.

In its opening argument against Rosemont’s background data location choices, SSSR betrays a serious misunderstanding of the subject. It argues that Alamo Lake was not a proper site for NO₂ background, and Chiricahua National Monument was inappropriate for ozone and PM₂.₅, because these sites are distant from the Rosemont site so “that any registered concentrations would significantly diffuse when and if the concentrations ever reached the Rosemont site.” (Br. at 10). SSSR thus seems to think that background concentration sites are
chosen because they are sources of pollution.

For the background concentration determination, Appendix W, Section 8.2.2.c clearly states that the monitors selected should have a similar source impact to the project site. (SSSR-17 at SSSR0956). As testified to repeatedly at the hearing, notably by Mr. Sundblom, the background concentration sites for modeling were chosen because their locations are similar to the conditions at the Rosemont site, and thus would most accurately represent the existing air quality in the vicinity of Rosemont before it is constructed. (TR. at 799-800). Background sites can be hundreds of miles away, like Alamo Lake, and still be the best choice for background data if, like Alamo Lake, the site is the one otherwise most similar to the Rosemont location. (TR. at 856-57, 2870).

SSSR persists in its misguided argument by claiming that the Saguaro National Park East (SNPE) and Children’s Park monitors would be “far more appropriate” for background data because they are closer and “data indicate the likelihood that pollutant concentrations would reach” the Rosemont site and “not be diffused by distance.” (Br. at 11). SSSR makes no citations to the record to bolster these false statements, which again seem to assume that background sites are chosen because they are actual sources of emissions.

Testimony at the hearing, from both Mr. Sundblom and Dr. Mao, indicated that SNPE and Children’s Park monitors were inappropriate because their urbanized locations were not comparable to the rural Rosemont site. The Children’s Park monitor is located in the Tucson urban area and significantly influenced by emissions from heavy vehicular traffic. (TR. at 1991-92). The SNPE monitor is located in close proximity to the Tucson metropolitan area,
and thus directly influenced by urban and industrial emissions from Tucson. (TR. at 866).

These “source impact” conditions do not exist in the Rosemont site. (TR. at 1989).

Relying on Dr. Betterton’s HYSPLIT analysis, SSSR claims that the SNPE monitor should be selected because “winds blow from SNPE, east of Tucson, towards the Rosemont site.” (Br. at 11). First of all, the HYSPLIT model only simulates the transport path of an air parcel released from a particular site at a particular time. (TR. at 2944, 2946). The “one day one time” HYSPLIT analysis from Dr. Betterton failed to provide a big picture evaluation of representative wind conditions in the area of concern. As Dr. Mao testified, the prevailing winds in the Tucson area were in the opposite direction from Rosemont (TR. at 1146), and even SSSR’s expert (Mr. Howard Gebhart) acknowledged it at the hearing. (TR. at 2835).

Secondly, the HYSPLIT model does not provide a magnitude of impact. (TR. at 860, 1034, 2946). Indeed, Dr. Betterton acknowledged that, even if the HYSPLIT model shows that two areas are meteorologically connected, the air quality data in the two areas will not be identical or comparable. (TR. at 2638-39).

SSSR and other appellants seem hung up on statements made that the Rosemont site was “rural” while the Saguaro site was considered “urban.” SSSR apparently did not notice that when Dr. Mao was indicating that the Rosemont site was “rural,” this was simply his evaluation of the Auer coefficient for the mine site itself, a data input into the model. (TR. at 1923). Background sites are not subject to Auer classification, they are reviewed for comparability under other criteria than the geographically-limited Auer analysis. The Saguaro monitor site might qualify as “rural” under the Auer index, as SSSR and others seem to be
arguing, but this is irrelevant—Saguaro was determined to be an inappropriate site because, even if low-density for a couple of miles around the monitor location, the station sits right on the edge of a major metropolitan area and is affected by its pollution. (TR. at 799).

ADEQ acknowledges that the Alamo Lake site does not have the same extent of data as most other background sites, but ADEQ reasonably concluded that it was still the best choice for NO$_2$ background data, because it is one of only two sites in Arizona not heavily influenced by urban traffic—the major source of NO$_2$ emissions. (TR. at 856). SSSR failed to make the case that the Rosemont site is significantly impacted by NO$_2$ emissions from Tucson so as to make the central Tucson Children’s Park site, with its much higher NO$_2$ readings, an appropriate choice for background data for the model. As it will be discussed later (p. 29 below), Mr. Sundblom, Dr. Mao and the Rosemont’s experts have testified that the Tucson/I-10 plume has an insignificant impact on the Rosemont site. SSSR’s witnesses provided no credible evidence to the contrary. There is no way SSSR’s choice of location for NO$_2$ background data could be representative.

C. The On-site Meteorological Station Was Adequate and Appropriately Sited

Even though it concedes that different professionals can reach different conclusions, (Br. at 12), SSSR claims the single Rosemont station to collect meteorological data is inadequate. Michael Sundblom testified that, based on his experience, the site's location is appropriate as it is in the middle of the proposed mine pit, and within a couple of miles of the other main facilities of the Mine. (TR. at 807). Rosemont’s emission sources are dominantly influenced by the density-driven up/down-slope flows as nearly all of them are ground sources
or near ground sources. (TR. at 1941-42, 1937). The meteorological data collected from the
Rosemont single monitoring station have adequately characterized the transport and dispersion
conditions of the Rosemont source emissions, which conforms to Appendix W Section 8.3
(SSSR-17 at SSSR 0956), and thus cannot possibly be argued to be arbitrary and capricious. In
contrast, Rosemont's expert, Dr. Betterton, opined that met stations should have been placed
every 2 or 300 yards, at a cost of millions of dollars. (TR. at 2590-91). Aside from revealing
this witness's bias against the Mine, there is no showing that such an opinion is remotely
reasonable.

Moreover, Dr. Betterton was obviously not clear as to whether AERMOD has the ability
to include multiple meteorological station data in its simple source Gaussian dispersion. (TR. at
2586). Indeed, as a steady-state model, AERMOD is unable to simultaneously process the
meteorological data collected from multiple on-site monitoring stations. (TR. at 2725).
AERMOD does have the capability to process multiple-level observations from a single station.
However, the multiple-level monitoring is not warranted because there is no planned Rosemont
source/plume that is significantly higher than the altitude of the Rosemont meteorological
monitoring station. (TR. at 1939).

D. ADEQ’s Approved NO₂/NOx Ratios Are Appropriate

SSSR takes issue with ADEQ's agreement that Rosemont could use a 5% NO₂/NOx in-
stack ratio for its calculations of haul truck emissions from the Mine. (Br. at 13). As Dr. Mao
testified, the in-stack NO₂/NOx must be representative of exhaust gases before leaving the tail
pipe and before any mixing or oxidation by ambient air has occurred. (TR. at 1156-57, 1973).
To determine representative NO₂/NOx estimates, the data must be sampled by either direct in-pipe measurement methods or by methods designed for mitigating oxidation from ambient ozone (such as measuring NO₂ and NOx inside of tunnels). (TR. at 2956). Based on the in-pipe measurements and data collected from the inside of tunnels as reported in the Montenegro report, ADEQ determined that the ratio of 5% was appropriate. (TR. at 1974, 1978).

The higher ratios pushed by SSSR have no such basis for adoption: the Caterpillar ratio of up to 15% has no data to back it up (ADEQ-24, Appendix F at AZRP06895); nor does the 10% ratio used by EPA for Atlanta and Philadelphia case studies (TR. at 1974). The 30% ratio was obtained by sampling and measuring ambient air samples so the ratio actually reflected the ratio in ambient air rather than in a tailpipe (it was not surprising that the ratio was high because the exhaust gases have already mixed with ambient air). (TR. at 1971, 1973). The 50% "conservative" assumption pushed by SSSR does not apply by EPA guidance, because there is more source-specific information on the in-stack ratio in this instance. (SSSR-32, p. 5 at SSSR 1844)

E. Rosemont, with ADEQ Guidance, Chose an Appropriate Process Area Boundary.

SSSR next argues that Rosemont's choice of its property fence line as its Process Area Boundary for modeling is incorrect, because the Permit does not contain an enforceable limitation to prohibit public access within the fence line. One problem with this argument: the Permit does contain such a limitation (ADEQ-9; Condition XIII under Attachment “B,” AZRP01530).
As EPA has explained, the term “general public” does not include mail carriers, equipment and product suppliers, maintenance and repair persons, as well as persons who are permitted to enter restricted land for the business benefit of the person who has the power to control access to the land. Such persons are not considered the general public, but instead are considered “business invitees.” See EPA, Interpretation of “Ambient Air” In Situations Involving Leased Land Under the Regulations for Prevention of Significant Deterioration (PSD) (Jun. 22, 2007). SSSR’s expert, Dr. Betterton, mistook business invitees as the general public, (TR. at 2511), and the other SSSR expert, Mr. Gebhart, relied on the flawed information Dr. Betterton provided to place receptors within the process area boundary in his alternative modeling analysis, thus leading to excessive modeled pollutant concentrations. (SSSR-36 at SSSR 3006).

F. Substitution for Missing Data Was Not Required, and Did Not Affect Modeling Results.

SSSR and other appellants repeatedly cite the 3 months of missing data from the Rosemont meteorological monitor. This is despite the fact that Rosemont provided 2 years and 9 months of actual on-site meteorological data when only one year is required by the guidance. (SSSR017, Appendix W Section 8.3.1.2.b, SSSR 0957; TR. at 1995, 2717, 2824, 2940). The meteorological data Rosemont collected were sufficient to represent the meteorological conditions in the Rosemont area. There has also been no evidence submitted that the data input substitution at issue affected the accuracy of the modeling results. When reviewing the

meteorological data Rosemont submitted, Dr. Mao found that the meteorological data were
very consistent year-by-year and season-by-season. (TR. at 2132). With and without
substituting data, the corresponding wind rose plots were identical. (TR. at 1997). Therefore,
Dr. Mao reasonably reached the conclusion that the data substitution did not change the nature
of measurements (representative wind conditions) for the modeling analysis. Instead, such
substitution allowed Rosemont to incorporate more meteorological data into the model
following Appendix W, Section 8.3.1.2.b. (SSSR-17 at SSSR 0957; 70 Fed. Reg. at 68244).
Otherwise, the valid data collected before the missing period would have been discarded from
the modeling analysis. (TR. at 1995).

There is no dispute that the Alamo Lake monitor provided less than three years' data for
NO₂. This site, however, as explained previously, is far more comparable to the Rosemont
Mine site for background purposes than the other available, and far more urban-traffic-impacte,
NO₂ monitoring sites in the State. (TR. at 856-57, 1987, 1989).

Moreover, according to EPA’s March 1, 2011, One-Hour NOₓ Classification
Memorandum (SSSR-32), the determination of the background concentration for 1-hour NO₂ is
based on the 98th percentile of the 1-hour readings monitored each year. This means of the
highest hourly readings in each of 365 calendar days each year, the eighth-highest result is
chosen (98% of 365 = 357.7).

Taking into account that the Alamo Lake monitor was a seasonal monitor, Rosemont
picked the absolute highest hourly reading for NO₂ from Alamo during the two-year period of
available data as its background concentration for modeling. Dr. Mao also reviewed the data
collected from Tonto National Monument and found that the monitoring concentrations for
Tonto and Alamo were nearly identical. (TR. at 1389). Therefore, ADEQ reached the
conclusion that the highest hourly concentration collected from the Alamo Lake provided a
reasonable and defensible estimate of the background concentration for Rosemont. (TR. at
1389-90).

ADEQ’s decision was made on the basis of the agency’s strong familiarity with its air
quality monitoring network as well as the data review the agency performed. ADEQ did not
act arbitrarily, capriciously, or without substantial evidence in the record in determining that
Rosemont provided representative background data for its modeling.

G. SSSR Could Not Demonstrate Rosemont Impacts from the Tucson Air Shed
and I-10 Corridor.

SSSR next claims that there is evidence that the Rosemont site is impacted by emissions
from the Tucson area. This "evidence" was their consultant's running of the HYSPLIT model,
finding a possible connection of airflow from Tucson to the Mine on the one day of data the
model was run on. As ADEQ established at the hearing, prevailing wind direction in the
Tucson metro area is in the opposite direction (TR. at 1146) --and SSSR's expert witnesses
were also aware of this fact (TR. at 2835). As ADEQ also established, the HYSPLIT model
provides no information as to relative concentrations of pollutants--it shows possible movement
only. (TR. at 1352).

Citing a one-day model run is suspect, since results can very greatly depending on which
day and time is selected for the model run (TR. at 1360), and this information is even less
useful when the program run tells nothing about dispersion of concentrations of contaminants.

(TR. at 1359). ADEQ and Rosemont witnesses demonstrated that Tucson monitors were not
appropriate for Rosemont modeling because pollutant concentrations would drop off rapidly
with distance from that area (TR. at 1990), because the prevailing data showed no consistent air
flow from Tucson to the Rosemont site (TR. at 1146, 2945), and because there is a substantial
mountain range between the two areas--the Santa Ritas. (TR. at 1365-66). The lack of
connection between Tucson and the Rosemont site is further supported by Rosemont testimony
as to the low ozone levels at the Green Valley monitor (Strohm, TR. at 2948) and Mr.
Sundblom’s testimony as to the low NO₂ concentrations at the Tonto National Monument
station despite strong air flows from Phoenix. (TR. at 1035).

SSSR also cannot demonstrate any effect from I-10 traffic on Rosemont background
NO₂ levels. As EPA noted when adopting the 1-hour NO₂ NAAQS, “on average, peak NO₂
concentrations on or immediately adjacent to roads may typically be between 30 and 100
percent greater than concentrations monitored in the same area but farther away.” 75 Fed. Reg.
6474, 6479 (Feb. 9, 2010). NO₂ concentrations decrease rapidly with distance from a highway.
(Id.; Tr. at 1367-71). Because the Rosemont site is approximately 12 miles from the nearest
highway, the I-10 corridor (Tr. at 1371), there was no reason to believe that background
concentrations would be any higher than at other rural sites. Thus, even if ADEQ had had the
authority to require Rosemont to conduct on-site monitoring for NO₂, there was no technical
basis for doing so.
SSSR also argued that Rosemont failed to model “wind speeds and directions, and therefore the impact of off-site pollutant concentrations, blowing from the east or northeast, from the Tucson air shed and the I-10 corridor.” (Br. at 17). First of all, if the winds blow from the east or northeast in the Tucson area, there is no way for the emissions from Tucson to reach the Rosemont area. Secondly, the Rosemont meteorological station did collect eastern or northern winds (see the Rosemont wind rose, ADEQ-8 at AZRP06688-90). However, the eastern or northeastern winds recorded were not strong and significant. There is no basis to conclude that Rosemont failed to model winds blowing from the east or northeast.

SSSR’S “Expert Findings” Were Based On Distorted Data

It is no surprise that SSSR’s consultant “found” NAAQS violations in his modeling runs, given the assumptions he put into his models. Using 30% and 50% for in-stack NO₂/NOx rations is not “conservative,” it is a choice to deliberately try to get the highest possible result. As previously clarified, the 30% ratio was obtained by sampling and measuring ambient air samples so the ratio actually reflected the ratio in ambient air rather than in-stack (in-tailpipe). (TR. at 1971, 1973). The 50% figure is, per the guidance, only to be used if no specific data is available. (SSSR-32 at SSSR 1844). As noted above, such specific data is available, and reasonably points to the 5% in-stack ratio utilized by Rosemont.

Choosing the heavily urban Children's Park site for NO₂ background is also not remotely representative. Claiming a connection between the Tucson airshed and the Rosemont site because of a one-time run of a model is simply ridiculous, and ignores the data cited by ADEQ witnesses as to the prevailing winds going the other way.
Regarding the process area boundary, Dr. Betterton’s testimony about business visitors clearly showed that he did not understand the definition of “general public”. If the “general public” includes business visitors, there is no way to specify the process area boundary because business visitors such as contractors can potentially go anywhere within the facility. Relying on the wrong information Dr. Betterton provided, SSSR’s consultant Gebhart placed additional “ambient” receptors in the active area of the Mine for his modeling analysis. (See p. 26 above.) It is clear that these receptors were within the process area boundary and should be excluded from any accurate modeling analysis.

Based on Dr. Betterton’s testimony, SSSR also claims that “the results of short term modeling tend to be almost 100% accurate when compared to the actual concentrations resulting once a new source begins operation.” (Br. at 18). During his testimony, Dr. Betterton extensively testified that the dispersion model performs much better when modeling short-term impacts in comparison with long-term impacts. (TR. at 2667). Dr. Betterton is flatly contradicted on this point by Appendix W Section 2.1. b (SSSR-17 at SSSR 0943): “The air quality models have been applied with the most accuracy, or the least degree of uncertainty, to simulations of long term averages…” (Emphasis added). SSSR’s arguments based on this flawed testimony are completely unfounded. ADEQ’s modeling guidance clearly states that the regulatory models “are designed to over-predict ambient impacts that might occur in real-world situations” (ADEQ-7, AZRP06390). (Emphasis added.)
Dr. Mao and Mr. Sundblom explained in detail, over many hours of testimony, why they found Rosemont's modeling results to be reasonable and to have been obtained in compliance with the applicable guidance. SSSR's argument on this issue is very far from showing, by a preponderance of the evidence, that ADEQ's conclusion was wrong in any way.

**Dr. Mao’s Modeling Review Was Lengthy and Thorough**

On page 9 of its Brief, SSSR argues that ADEQ wrongly “required no modifications to the (Rosemont) modeling procedures, including….background monitors, or input data used.” This is in fact a false statement, as was well established at the hearing. Dr. Mao testified how he required Rosemont to input the .5 default NO₂/NOx ratio for blasting, and required the PM$_{10}$ outlier figure to be included in Rosemont’s final calculations. SSSR’s own brief, on its previous two pages (7 and 8), describes Dr. Mao’s and ADEQ’s review of the Rosemont modeling, and the answers they demanded to justify the same.

Rosemont attacks the review by Dr. Mao of the final AERMOD analysis, claiming he spent only 10 hours on the task, ignoring the fact that the final report results from substantially the same protocol that Dr. Mao had been reviewing for several months (ADEQ-8 at AZRP06677; see also ADEQ-21 at AZRP06832, TR. at 541). It should be obvious from his testimony how familiar Dr. Mao is with every aspect of the Rosemont protocol and modeling.

**SSSR Cannot Credibly Show NAAQS Violations**

Finally, SSSR alleges that "a proper" AERMOD analysis would show violations of NAAQS standards for one-hour NO₂ and 24-hour PM$_{10}$. Their NO₂ claim, as shown above, is based on excessive assumptions by their consultant as to in-stack ratio, and the choice of a
heavily-trafficked urban site as their "background" monitor for this pollutant. Neither choice
comports with the applicable guidance. SSSR also placed receptors within the process area
boundary to show the model violation for PM$_{10}$. As discussed above, these receptors should be
excluded, as they falsely exaggerate modeled PM$_{10}$ levels.

**RESPONSE TO MR. ZEAGLER’S BRIEF**

It is difficult to respond to Mr. Zeagler’s brief because he does not lay out his arguments
clearly. To the extent ADEQ can understand them, Mr. Zeagler’s arguments, and ADEQ’s
responses, are as follows.

Mr. Zeagler appears to claim (Zeagler Brief (“Br.”) at 4) that there will be high wind
gusts affecting the tailings piles at the mine which have not been accounted for by the
Rosemont modeling. This argument is irrelevant to whether the Permit was legally issued
because, as stated repeatedly at the hearing, modeling could not be legally required as a
condition of issuance of the Rosemont permit. In addition, as also stated at the hearing, in
response to public comments, ADEQ required in the Permit that Rosemont submit another
application, for a significant permit revision, for its proposed dry-stack tailings management
system, where the application will be subject to further review and public comment, and which
requires separate approval by ADEQ before the tailings pile is created. (Vaidyanathan, TR. at
544, 547).

Mr. Zeagler then attempts to add new “evidence” over the next several pages of his brief
(Br. at 4-9), apparently for the purpose of claiming that Rosemont’s potential to emit
particulates (PM$_{10}$) would be above major source levels if fugitive emissions were included.
This attempt to add to the record is objectionable and was expressly prohibited by the Administrative Law Judge at the close of the hearing. (TR. at 3063) Under the law, and as testified to at the hearing, potential fugitive emissions for criteria pollutants from non-categorical sources such as copper mines are not included in potential-to-emit calculations to determine major source applicability. (TR. at 451-52).

Mr. Zeagler next (Br. at 10) claims that the Tucson city limits are within 10 miles of the Rosemont mine site. He cites no evidence to prove this. ADEQ notes that an actual “city limit” is also distinguishable from the urbanized area of a city, which the testimony established as approximately 30 miles. Mr. Zeagler’s claims of “large” residential areas close by, and “100 residences within 3 miles” of the Mine site, are similarly unsupported by evidence.

In any event, Mr. Zeagler may be confused as to the import of the “rural” determination for inputting into the AERMOD model, which was explained by Dr. Mao; this determination is distinct from the determination as to whether a background monitoring site is influenced by urban sources of pollution. Dr. Mao and Mr. Sundblom both explained how the Saguaro site was much closer to sources of urban pollution than the Rosemont site, making the Chiricahua and Alamo Lake background sites more comparable for inputting the pollutant background values at issue. (See pp. 21-24 above).

The last page of Mr. Zeagler’s brief (p. 11) amounts to little more than unsupported insults, and so should be disregarded by the Administrative Law Judge. Mr. Zeagler of course does not explain, with respect to radionuclides, how ADEQ is to evaluate the issue with respect to granting or denying the Permit; nor does he have any response to the testimony as to the...
minimal presence of radioactive material in the ore body of the Mine. (TR. at 2321).

ADEQ will object to any attempt by Mr. Zeagler to make new arguments in any reply brief, and will seek additional response opportunity if he is somehow permitted to do so.

**RESPONSE TO DR. FISHER’S BRIEF**

To the extent his brief attacks Rosemont's dispersion modeling, or claims that the Permit can't be issued because the modeling shows NAAQS violations, Dr. Fisher's appeal shares the same fatal flaws as SSSR's: neither modeling nor compliance with the NAAQS could be required by ADEQ as a condition of issuing the Permit. (See pp. 14-18 above). For various reasons, Dr. Fisher's other arguments also fail.

**ADEQ Had Jurisdiction to Issue the Permit**

Dr. Fisher's first argument is with ADEQ's jurisdiction. This argument is baseless, in part because Fisher incorrectly claims that "there was an ongoing permit for the same project pending before Pima County" when ADEQ was processing Rosemont's application. (Fisher Br. at 8). Dr. Fisher admits this error on the very next page of his brief, when he acknowledges that Pima County had already denied Rosemont's application on September 29, 2011. (Fisher Br. at 9). ADEQ, of course, did not receive Rosemont's application until two months later, on November 23, 2011 (ADEQ-1). Thus there was no "impermissible dual permitting process," and there was no law precluding ADEQ from processing the Permit application pending its obtaining jurisdiction to issue the Permit.

ADEQ, of course, did in fact assert jurisdiction under A.R.S. § 49-402(B) by its letter to
Pima County on August 3, 2012. The cited statute allows ADEQ's director to assert jurisdiction over a permit by submitting such notice, describing his reason for asserting jurisdiction and providing an opportunity to confer. Dr. Fisher, tellingly, does not assert that these requirements were violated by ADEQ.

Dr. Fisher's only legal argument is that ADEQ asserted jurisdiction before the appeal time had expired for the Pima County Superior Court decision overturning the County's permit denial. As noted by Dr. Fisher, the Superior Court held that the County's denial of Rosemont's permit application was arbitrary and capricious, and issued its decision on July 5, 2012. ADEQ's jurisdiction letter to Pima County was dated August 3, 2012--one day too early, according to Dr. Fisher.

To support this argument, Dr. Fisher cites A.R.S. § 49-443. (Fisher Br. at 11). This statute provides no support for Dr. Fisher's assertions. It does not state that the agency issuing the appealed decision retains sole jurisdiction over the subject matter thereof throughout all court appeals. It states only that the "final administrative decision" being appealed "shall remain in effect pending final determination of the matter." In this case, that "final determination" obviously occurred on July 5, 2012, when the Pima County Superior Court overturned the County's permit determination as arbitrary and capricious. At that point, the Superior Court's decision was the operative decision, and any entity upset with it would have to appeal to the Court of Appeals and seek to stay the Superior Court's decision, since the agency's

---

4 ADEQ notes that this letter (RVZ-11) states that the agency “requires” modeling. This was an error, as explained above (pp. 14-18) and by Director Massey at the hearing (TR. at 3023).
decision had already been overturned by the Superior Court.

Even if ADEQ's assertion of jurisdiction was a day too early, by Dr. Fisher's argument, he states no reason why its jurisdiction did not become effective August 4, 2012. Since no one appealed the Superior Court's decision that the County had acted arbitrarily and capriciously in denying Rosemont's permit application, and no one, least of all Pima County, challenged his assertion of jurisdiction, ADEQ's director clearly had jurisdiction to issue the Permit when he did so on January 31, 2013.

When a person applies to ADEQ for an air quality permit, the agency has the authority to process the application, and the agency made sure it had legally asserted jurisdiction over the Rosemont Mine before making the decision to issue the Permit. Dr. Fisher has not shown otherwise.

Dr. Fisher Provides No Substantial Evidence Backing His Emissions Claims

The middle section of Dr. Fisher's brief is devoted to a lengthy argument claiming that ADEQ ignored his theories about what pollutants could be generated by the Rosemont mine. Dr. Fisher persisted in this line of argument at the hearing and in his brief, claiming that because he testified that it was theoretically possible for hazardous air pollutants to be generated during the various processes at the mine, ADEQ was obligated to measure and account for all pollutants he mentioned in order to determine the Mine's "potential to emit." While it may be theoretically possible for hazardous pollutants to take the form of gases and aerosols, as he claims, Dr. Fisher appears to believe that theorizing is sufficient for the purposes of his appeal.
Dr. Fisher did in two instances attempt to provide evidence regarding emissions levels, but these only serve to show how misguided his contentions are. In his comments on the Permit, he attempted to claim that the Mine would emit hazardous metals in excess of major source HAPs levels. In its response to public comments for the Permit, ADEQ staff showed that Dr. Fisher was in large part basing his claims on the percentage of the entire mined ore body that could be composed of hazardous constituents. (Responsiveness Summary, ADEQ-10 at AZRP01684-85). Since it would be ridiculous to assume that the entire ore body would be emitted into the atmosphere during the course of the Mine's operations, ADEQ, in response to Dr. Fisher's comment, focused on actual emissions from the Mine, the majority of which would take the form of particulate matter. Calculating the percentage of PM$_{10}$ emissions that could be hazardous, ADEQ staff showed that potential HAPs emissions from the Mine would be far less than the major source triggers in the law.

Dr. Fisher also complains that ADEQ’s estimates of HAP emissions failed to account for gaseous HAPs that might be emitted as a result of chemical reactions that occur during the blasting process. There are two problems with this contention.

First, although he now denies it (Fisher Br. at 19, n.5), many of the hypothetical reactions on which Dr. Fisher’s contention is based constitute the secondary formation of HAPs in the atmosphere. For example, at page 4 of his brief, Dr. Fisher misleadingly claims that “carbon monoxide can react with other constituents of the ores in the blast process” to create HAPs (emphasis added). In the testimony on which this assertion is based, however, Dr. Fisher stated that the reaction in question depends on “photochemical activation” and “will not occur
in the bore hole because it’s dark.” (Tr. 1635, lines 4-7; see also Tr. 1637-39, 1644-45, 1754, 1842-43). The HAPs major source thresholds apply to a source that “emits or has the potential to emit” a HAP. A.A.C. R18-2-101(75)(b)(i). They do not apply to HAPs formed in the atmosphere at some indeterminate time after the emissions occur.

Second, as Dr. Fisher himself recognizes, any gaseous emissions from blasting would be fugitive. (Fisher Br. at 15). Fugitive emissions are considered in determining whether a source is major for HAPs only “to the extent quantifiable.” Memorandum from Lydia Wegman, Deputy Director, EPA OAQPS to EPA Regional Directors, “Consideration of Fugitive Emissions in Major Source Determinations” at 6 (EPA March 8, 1994) (http://www.epa.gov/ttn/oarpg/t5/memoranda/fugit.pdf); see also 40 C.F.R. § 51.165(a)(4) (fugitive emissions in nonattainment NSR applicability determinations).

At best, Dr. Fisher’s testimony could be charitably construed to support the proposition that some additional HAPs might be emitted in gaseous form as a result of chemical reactions during the blasting process. Dr. Fisher provided no substantial evidence that any additional emissions of any hazardous air pollutant would take place beyond those emissions calculated and accounted for by Rosemont or ADEQ, and he certainly provided no basis for quantifying those emissions.

Further, Dr. Fisher notes that the Mine plan of operations calls for 80 bore holes, one blast per bore hole per day, or 29,200 blasts per year and processing 75,000 pounds per hour of ore. This is a gross misrepresentation of the facts. Rosemont’s application (ADEQ-2 at AZRP00568) states that RCP is capable of performing 365 blasts/year with an assumed rate of
one blast per day. Rosemont’s emissions estimates (ADEQ-4, at AZRP00192) and ADEQ’s estimates (ADEQ-5, at AZRP1816) clearly identify the use of 80 holes per blast. Dr. Fisher overestimates the number of blasts by a factor of 80, and thus concludes that the gaseous emissions could exceed the major source thresholds for HAPs. He also does not explain or provide any other evidence of how he arrived at his numbers.

Dr. Fisher provided no substantial evidence that any additional emissions of any pollutant could take place beyond those emissions calculated and accounted for by Rosemont or ADEQ. He provided no evidence as to the existence of any substantial gaseous or aerosol emissions of any pollutant. Since, as he acknowledges in this brief, Dr. Fisher has the burden of proof by the preponderance of the evidence to show that ADEQ's permit decision was wrong, his failure to produce any evidence of substantial emissions of the pollutants he professes so much concern about, is fatal to his case.

As ADEQ staff testified during the hearing, their reasonable assumption is that if a facility like the Rosemont copper mine could be a substantial source of a particular pollutant, EPA or other authorities would have developed emissions factors so that the pollutant emissions could be calculated and controlled. AP 42 is the primary guidance for many emissions calculations (Vaidyanathan, TR. at 458), and if there is no accounting for emissions of a pollutant in AP 42, an alternative, authoritative source for calculating such emissions must be located. (TR. at 593-95). That this has not occurred for the gases and aerosols Dr. Fisher testified about is a major indication that Dr. Fisher's concerns are theoretical rather than real.
Appellants cannot dream up speculative problems and then claim an agency has to investigate them before issuing a permit decision; they have to come up with actual evidence that substantial emissions would occur from a facility that the agency is not accounting for. Dr. Fisher utterly failed to do so, and accordingly all his arguments regarding additional emissions from the Rosemont Mine must be discounted by the Administrative Law Judge.

Dr. Fisher’s Arguments Regarding Particulates Also Fail

Dr. Fisher's more specific arguments in this section of his brief (pp. 12-28) are also easily dealt with. He quickly reveals confusion over what air quality standards exist (Fisher Br. at 13) when he claims that EPA "changed" the particulate matter standard in December 2012 from PM$_{10}$ to PM$_{2.5}$. In fact, EPA first adopted PM$_{2.5}$ as an additional indicator for particulate matter pollution in 1997, 62 Fed. Reg. 38652 (July 18, 1997), revised the PM$_{2.5}$ NAAQS in 2006 to strengthen the 24-hour standard, 71 Fed. Reg. 61144 (Oct. 17, 2006), and revised it again in 2013 to increase the stringency of the annual standard, 78 Fed. Reg. 3086 (January 15, 2013). The 24-hour PM$_{10}$ NAAQS remains in place. 78 Fed. Reg. at 3086. Although the revisions to the annual PM$_{2.5}$ NAAQS did not take effect until March 18, 2013, ADEQ actually looked at it and concluded that Rosemont's mine would not exceed this standard. (ADEQ-22 at AZRP01478).

Dr. Fisher's assertions regarding the proposed dry stack tailings disposal (Fisher Br. at 21-24) ignore the fact that ADEQ required that the system be the subject of a separate permit process before going into effect (ADEQ-9 at AZRP01522), and also ignore (Br. at 22) that Rosemont actually did model emissions dispersion from the proposed final stack height, and
their result was verified by Dr. Mao. (TR. at 2019-20). Fisher also ignores the fact that "extreme value" wind speeds cannot be factored into the recommended AERMOD model, which inputs a one-hour average (TR. at 904-05), and also, again, ignores the fact that modeling and NAAQS compliance could not be required as a condition for issuing the Permit. Fisher's assertions regarding "aerosol" and "methyl lead" emissions from the tailings, or other such HAPs emissions, again amount to little more than speculation and cite no evidence that such emissions could be substantial.

Indeed, checking some of Dr. Fisher's citations to the record on this point (Br. at 23), namely to JLF-30 (not admitted), and transcript pages 1811 and 1867-68, reveals that these citations provide no support for the argument asserted. No citations are even provided for Dr. Fisher's following arguments in this paragraph. Needless to say, incorrect cites are not evidence meeting Dr. Fisher's burden of proof, and every citation by Dr. Fisher is therefore suspect. Farther down this page, Dr. Fisher's general citations to his voluminous comments on the draft Permit, without page references, should similarly be disregarded.

**Dr. Fisher Has Shown No Threat From Asbestos**

While Dr. Fisher acknowledges (Br. at 24) that Rosemont provided testimony that only negligible quantities of asbestos are in the proposed ore body, he does not mention how tiny the quantity found is: Rosemont found only a half-inch seam in one drill interval out of 65 miles of core samples. (TR. at 2320). Dr. Fisher went on and on about the dangers of asbestos, but again, his stated fears are only speculation; he provided no evidence that substantial quantities of asbestos are even present at the Mine site, as it is his burden to do. He cannot raise
hypothetical problems and then try to shift the burden of proof away from himself, as he attempts repeatedly in his brief. Without any citation to substantial evidence of asbestos at the Mine, this portion of Dr. Fisher's brief can be dismissed.

**A Class II Permit Was Appropriately Issued**

Dr. Fisher next argues (Br. at 26-28) that the Permit should have been a Class I permit, not a Class II synthetic minor. This section of his brief contains more of Dr. Fisher's unsubstantiated assertions regarding gaseous and aerosol HAPS emissions, addressed above. It also reveals a fundamental misunderstanding by Dr. Fisher of the import of the "voluntary" controls Rosemont agreed to in order to obtain its Class II permit. Unlike Dr. Fisher's stated belief (Br. at 28), such controls are binding, once they are incorporated into the permit.

(ADEQ-9 at AZRP01484, 01502-05).

**Dr. Fisher’s Modeling Arguments Also Fail**

The next section of Dr. Fisher's brief contains a lengthy (Br. at 28-40) series of complaints regarding the Rosemont modeling and its results. As such, Dr. Fisher's arguments here contain the same fatal flaw as SSSR's on the same issue: neither modeling nor modeling demonstrations of compliance with NAAQS standards could be required as a condition of Permit issuance. Dr. Fisher begins by complaining about ADEQ's requiring him to come up with actual evidence of substantial emissions, a topic addressed above.

Dr. Fisher first claims (Br. at 30) that the meteorological monitoring site was "unreasonably" sited. Appendix W, the official guidance (Section 8.3.c) suggests that in siting such a station, that the emphasis be given to "adequate characterization of transport and
dispersion between the source(s) of concern and areas where maximum design concentrations are anticipated to occur." (SSSR-17; 70 Fed. Reg. at 68243, SSSR 0956). As all of Rosemont's emission sources are ground sources or near ground sources, maximum design concentrations under AERMOD are anticipated to occur at or near the process area boundary. The monitor itself was located at the major source of concern, the pit location, and the whole facility boundary was within 3 miles of this location (ADEQ-10; Response to Comment 169, AZRP01729). The proposed top of the tailings facility is near the same elevation as the station location (TR. at 1939), so Dr. Fisher's complaint (Br. at 30-31) about emissions occurring "at altitudes considerably above the ground" is also addressed.

ADEQ reviewed three years of wind data at nearby sites, such as the Empire RAWS site, and found wind conditions to be similar to those indicated by Rosemont's monitor. (TR. at 2045). While Dr. Fisher claims that there are "unique differences" between the Rosemont site and nearby sites on Federal lands, he again provides no evidence to support his claim. Dr. Fisher's arguments regarding multiple monitoring stations ignore the fact that AERMOD cannot process data from multiple meteorological sites. (TR. at 2725, 2865). But again, since the modeling was not a legally-required element of the Permit decision, Dr. Fisher's arguments here are beside the point.

In response to comments, including presumably Dr. Fisher's, Dr. Mao modeled lead emissions even though the Clean Air Act only requires such monitoring for lead sources that are expected to contribute to a maximum lead concentration in ambient air in excess of the NAAQS. 40 C.F.R. Part 58, Appendix D, paragraph 4.5(a). Per Dr. Mao's analysis,
Rosemont's modeled emissions were only one percent of the standard. (ADEQ-10; Response to Comment 17, AZRP01686). Dr. Fisher has provided no substantial evidence that emissions could be greater than those estimated by Dr. Mao, and so once again, on this issue, fails to meet his burden of proof.

Precipitation data are not required for AERMOD, and including such data is done for the purpose of measuring washout of pollutants from the atmosphere by precipitation. Not including such data thus made the Rosemont modeling even more conservative. Dr. Fisher claims that Rosemont’s consultants did not use the appropriate cloud cover data from nearby Class I federal weather monitoring sites. Indeed, the nearby monitoring sites such as RAWS stations do not collect any cloud cover data. ADEQ has determined that cloud cover observations obtained from the Tucson NWS are representative of the Rosemont site. (ADEQ-10; Response to Comment 212, AZRP01741-42). ADEQ also responded to comments on the albedo issue during the public participation process (ADEQ-10; Response to Comment 219-220, AZRP01743-44).

Dr. Fisher repeats SSSR's complaint about the “incomplete” meteorological data, and like SSSR, ignored the fact that only one year of on-site data was required. (SSSR-17 at SSSR 0957; TR. at 1995, 2717, 2824). There has also been no evidence submitted that the data input substitution changed the nature of measurements (representative wind conditions) for the modeling analysis. (TR. at 2132, 1997). ADEQ determined that the on-site ambient data collected by Rosemont met applicable quality assurance and quality control requirements. (TR. at 806). Regarding the QAPP implementation, ADEQ defers to Rosemont for purposes of this
briefing, and again emphasizes that criticisms of the modeling are irrelevant to determining this appeal.

Dr. Fisher also claims that Rosemont should have modeled high wind gusts, but AERMOD, the EPA-recommended model, only uses hourly average wind data and does not model a very short-term period such as a few seconds. (TR. at 904). While Dr. Fisher insists that such modeling should have occurred, he provides no information as to what model to use. This does not mean that ADEQ ignored the possibility of wind gusts affecting emissions from the Mine. The Permit requires Rosemont to develop a comprehensive tailings management plan to ensure that fugitive dust emissions from the tailings are minimized, and also calls for increased inspections and possible corrective measures during potential high-wind events. (ADEQ-9 at AZRP01522-24). The Permit's requirement for Rosemont to install a downwind PM$_{10}$ monitor also addresses this issue. (ADEQ-9 at AZRP01532-35).

Dr. Fisher closes his brief with unsupported accusations against ADEQ's integrity. He cites no evidence to support them. Dr. Fisher never even bothered to offer into evidence the emails he goes on about. Presumably he read them, and knows the information they contain, and would have moved to admit them in the record if he actually thought they would be helpful. Apparently they are not. This final section of Dr. Fisher's brief (Br. at 40-44) should be disregarded by the Administrative Law Judge.
The Permit Was Lawfully Issued.

As outlined above and, based on the information that was provided to it, ADEQ properly and lawfully issued the Class II Permit to Rosemont.

DATED this 12th day of November, 2013.

THOMAS C. HORNE
Attorney General

/s/ James T. Skardon
James T. Skardon
Assistant Attorney General
Environmental Enforcement Section

ORIGINAL e-filed this 12th day of November, 2013, with:

Office of Administrative Hearings
1400 W. Washington Street, Suite 101
Phoenix, Arizona 85007

By: /s/James T. Skardon