BEFORE THE ALBUQUERQUE/BERNALILLO COUNTY AIR QUALITY CONTROL BOARD

Mountain View Neighborhood Association, South Valley Coalition of Neighborhood Associations, Joaquin Altamirano, Julio Dominguez, Patty Grice and Teresa Ortiz-Strogen, as individuals,

Appellants and Petitioners,

v.

City of Albuquerque, a New Mexico municipal corporation,

Appellee and Respondent,

Vulcan Materials Company, Intervenor.

Authority to Construct Permit No. 1758

No. AQCB 2006-1

FINDINGS OF FACT AND CONCLUSIONS OF LAW

FINDINGS OF FACT

I. Jurisdiction.

1. The site of the Vulcan Materials Company (Vulcan) concrete batch plant, which is the subject of air quality Authority-to-Construct Permit #1758 (Permit) and AQCB 2006-1, is 4519 Williams Street SE, Albuquerque, New Mexico, which is within Bernalillo County, New Mexico.

II. Procedural History.

2. On December 19, 2005, the City of Albuquerque's Air Quality Division (AQD) issued Authority-to-Construct Permit 1758 (Permit) to Vulcan Materials Company (Vulcan) authorizing the construction and operation of a concrete batch plant at 4519 Williams Street, Albuquerque, New Mexico (facility). Administrative Record (AR) 99 at EHD 580-592.

3. By letter dated December 28, 2005, AQD notified members of the public who participated in the Vulcan permitting process of its decision to issue Vulcan the Permit. The December 28, 2005 letter also notified members of the public of their right to appeal the decision to the Albuquerque/Bernalillo County Joint Air Quality Control Board (Board). AR 100 at EHD 593-95.
4. On January 18, 2006, Appellants Mountain View Neighborhood Association, South Valley Partners for Environmental Justice, South Valley Coalition of Neighborhood Associations, Joaquin Altamirano, Julio Dominguez, and Patty Grice filed their Appeal and Petition of Hearing before the Board challenging the AQD's decision to issue the Permit.
5. On January 20, 2006, Petitioner South Valley Partners for Environmental Justice filed a Notice of Withdrawal of Party. RP 2. On March 23, 2006, by email, Air Board Hearing Officer Orth filed Orders granting the withdrawal of Petitioner South Valley Partners for Environmental Justice. RP 25.
6. Any document filed subsequent to March 23, 2006 with a caption including the South Valley Partners reflects an erroneous caption.
7. On January 24, 2006 Teresa Ortiz-Strogen (Petitioner Ortiz-Strogen) filed a letter entry of appearance. RP 4. On January 25, 2006, Deputy City Attorney Adelia Kearny entered appearance on behalf of Appellee and Respondent the City. RP 5. On February 6, 2006, Vulcan, through its counsel Modrall, Sperling, Roehl, Harris & Sisk, P.A., filed a Motion to Intervene and an Entry of Appearance. RP 14; RP 3. On March 23, 2006, by email, Hearing Officer Orth granted Vulcan's Motion to Intervene. RP 25.

8. On January 30, 2006, the Air Board held a special meeting and adopted a Motion to Set Hearing that directed the scheduling of a public hearing on the merits, designated a hearing officer to take evidence in the hearing, directed the hearing officer to conduct the hearing pursuant to 20.11.41 NMAC and the New Mexico Air Act, and provided other instructions to the hearing officer. The Motion also required the Board to hear closing arguments, and deliberate and decide to adopt, modify or set aside the recommended decision of the hearing officer, and to provide reasons for the Board's decision. RP 6, 7, 8, 10.
9. On January 30, 2006, the Petitioners, except for Petitioner Ortiz-Strogen, filed a Notice of Submittal and Protest of Fee and Request for Waiver. RP 9. On February 6, 2006, the same Petitioners filed a Motion Concerning the One Thousand Dollar Filing Fee. RP 16. On February 8, 2006, the Motion was heard by the Air Board. The City and Vulcan did not object to the granting of the Motion, and the Air Board determined the fee imposed an undue economic burden and would be waived. RP 19.
10. On February 2, 2006, Petitioners emailed Air Board staff stating the Petitioners waive the 30 day hearing requirement of Subsection F of 20.11.41.15 NMAC. RP 11.
11. On February 7, 2006, the Air Board hearing clerk filed a Notice of Docketing and Hearing Officer Assignment, which stated the Petition had been assigned No. AQCB-2006-1 and the Air Board had appointed attorney Felicia Orth as the Air Board's Hearing Officer to conduct the hearing on the merits and make a report

and recommendation to the Chair of the Air Board, with the Air Board issuing the Final Order. RP 17.

12. On February 13, 2006, the City filed the Notice of Filing of Administrative Record, and on February 28, 2006, filed a Notice of Filing of First Amendment to Administrative Record. RP 21; RP 23.
13. On February 24, 2006, the City filed its Answer. RP 22.
14. On March 31, 2006, the Petitioners, except for Petitioner Ortiz-Strogen, filed a Motion to Prohibit the City Attorney from Acting as Attorney for the Air Board. Intervenor Vulcan did not take a position regarding the Motion. RP 27. On April 17, 2006, the City filed its Response, denying Deputy City Attorney Kearny had acted as lawyer for the Air Board in AQCB 2006-1, citing to tape recordings as proof, and agreeing the same lawyer cannot act as lawyer for the Air Board and a City department when a specific disputed matter is at issue before the Air Board. RP 30. On April 17, 2006, Vulcan filed a Response taking no position. RP 29. On April 27, 2006, the Petitioners, except for Petitioner Ortiz-Strogen, filed a Reply. RP 35. A May 19, 2006 teleconference was held by Hearing Officer Orth and included arguments regarding the March 31 Motion. On May 22, 2006, the Hearing Officer signed an Order on Pre-Hearing Motions denying Petitioner's Motion, except, consistent with the City's position, the Motion was granted solely to the extent the City's counsel was directed not to represent both the City and the Air Board in AQCB 2006-1. RP 60.
15. On March 31, 2006, Intervenor Vulcan filed a Request for Air Board Member Recusal or in the Alternative Motion to Disqualify regarding Air Board member

Dr. Johnnye Lewis. RP 28. The City did not take a position regarding Vulcan's Request and Motion. On April 17, 2006, the Petitioners, except for Petitioner Ortiz-Strogen, filed a Response opposing Vulcan's Request and Motion. RP 31. On April 27, 2006, Vulcan filed its Reply. RP 34. On May 10, 2006, a hearing on the Motion was held before the Air Board and Hearing Officer Orth. At the Air Board meeting on May 10, the Board denied Vulcan's Request. RP 50.1.

16. On March 23, 2006, by email, Hearing Officer Orth filed the Prehearing Order that stated the hearing before the Air Board Hearing Officer would be held May 23, 24 and 25, 2006, with the non-technical public comment being held on the evenings of May 23 and May 24, and provided the order of presentation; the burden of proof; proposed locations for the hearing; requirements regarding Document filings and copies; service of Documents; motion, response and reply deadlines; content and deadlines for notices of intent to present technical evidence or testimony (NOI) and rebuttal NOI deadlines; and additional requirements. RP 26.

17. On April 23, 2006, notice was published in the Albuquerque Journal regarding the Tuesday, May 23, 2006 8:00 AM to 5:00 PM technical testimony hearing at the Mountain View Community Center, the Wednesday, May 24 continuation of the technical testimony at the Albuquerque Convention Center, and the May 25 continuation of the technical testimony hearing at the Albuquerque Convention Center, potentially through the evening. The publication also provided information regarding the non-technical public comment phase of the hearing at

the Mountain View Community Center during the evenings on Tuesday, May 23, 2006, and Wednesday, May 24, 2006. RP 32.

18. On April 26, 2006, amended public notices that provided additional details and were emailed to a listserve list; the parties, which included the Mountain View Neighborhood Association and the South Valley Coalition of Neighborhood Associations; and to the participants in the June 23, 2005 Public Information Hearing. RP 33; RP 36. On May 4, 2006, the second amended public notice of hearing on the merits was emailed to listserve in English and in Spanish, and was mailed to the parties and the participants in the June 23, 2005 Public Information Hearing. RP 40; RP 41; RP 42. On May 5, 2006, the first amended notice of the hearing on the merits was published in Spanish in El Hispano, and on May 12, 2006, the second amended public notice of hearing on the merits was published in Spanish in El Hispano. RP 45; RP 51.
19. On May 1, 2006, the City, Vulcan and the Petitioners, except for Petitioner Ortiz-Strogen, each filed Notices of Intent to present technical evidence or testimony (NOI). RP 37; RP 38; RP 39. On May 15, 2006, the City, Vulcan and the Petitioners, except for Petitioner Ortiz-Strogen, each filed Rebuttal NOIs. RP 55; RP 53; RP 56.
20. On May 8, 2006, Petitioners, except for Petitioner Ortiz-Strogen, filed a Motion objecting to Vulcan's Notice of Intent. RP 47. On May 15, 2006, Vulcan filed a Response in opposition. RP 52. A May 19, 2006, teleconference was held by Hearing Officer Orth, who had reviewed the pleadings, and who listened to arguments regarding Petitioner's May 8 Motion. On May 22, 2006, the Hearing

Officer signed an Order on Pre-Hearing Motions, which denied Petitioners' Motion. RP 60.

21. On May 8, 2006 Vulcan filed a Motion to exclude the testimony of Richard Moore as an expert witness. RP 48. On May 15, 2006, the City filed a Response, supporting Vulcan's Motion to Exclude. RP 54. Also on May 15, 2006, the Petitioners, except for Petitioner Ortiz-Strogen, filed their Response to Vulcan's Motion. RP 57. On May 19, 2006, Vulcan filed its Reply. RP 59. A May 19, 2006 teleconference was held by Hearing Officer Orth, who had reviewed the pleadings, and who listened to arguments regarding Vulcan's May 8 Motion. On May 22, 2006, the Hearing Officer signed an Order on Pre-Hearing Motions, which denied Vulcan's Motion. RP 60.
22. On May 23, 24, and 25, 2006, Air Board Hearing Officer Orth held the hearing on the merits. May 23, 2005, technical testimony was taken at Mountain View Community Center during the day, followed by public comment at the Mountain View Community Center in the evening. May 24, 2006, Hearing Officer Orth heard technical testimony at the Albuquerque Convention Center during the day, and heard public comment at the Mountain View Community Center in the evening. Spanish-English translation was provided during both public comment hearings. On May 25, 2005, technical testimony was heard by Hearing Officer Orth at the Albuquerque Convention Center. RP 62.
23. By a June 12, 2006 email, Hearing Officer Orth set post hearing deadlines: July 21, 2006 for submitting proposed findings of fact and conclusions of law and any

written closing argument; August 11, 2006 for the Hearing Officer's Report; September 13, 2006 for deliberation by the Air Board. RP 60.1.

24. On July 21, 2006, Petitioners, except for Petitioner Teresa Ortiz-Strogen; the City; and Vulcan filed lengthy proposed findings of fact, conclusions of law and recommended decisions and delivered a copy to the Hearing Officer. RP 64, 65, 66.

25. On August 16, 2006, the Air Board's Hearing Officer filed the Hearing Officer's Report (RP 67), a Summary of Testimony and Exhibits (RP 67), and the Hearing Officer's Proposed Findings of Fact and Conclusions of Law (RP 71). In the Report, the Hearing Officer stated the "Appellants raised numerous issues in their challenge to the permit" (RP 67, Report, p. 1, 1st para), but stated that, although "none of the other issues raised by Appellants require reversal or remand of the permit issued" (RP 67, Report, p. 2, 1st full para), the Hearing Officer proposed "a reopening of the evidentiary record on the limited question of an appropriate background concentration for 24-hour total suspended particulate (TSP) in order to ascertain compliance with the state standard" for TSP (RP 67, Report, p. 1, 2d para).

26. At an August 16, 2006 Air Board hearing and meeting, the Air Board directed the parties to file a response to the Hearing Officer's recommendation to reopen the record (RP 70, TR p. 46), to limit the analyses "to TSP and criteria pollutants that were incorporated in the (Vulcan) model under consideration and that are monitored at the Mountain View Monitoring Station", and to file their responses by noon on September 5, 2006 (RP 70, TR pp. 49-50).

27. On September 5, 2006, the Appellants, except for Petitioner Teresa Ortiz-Strogen; the City; and Vulcan filed responses to the Hearing Officer's Recommendation to Reopen the Hearing. RP 72, RP 73, RP 74.

28. On September 13, 2006, the Air Board decided to reopen the record and hold a hearing (RP 77, TR 9/13/06, p. 37), posed a number of questions, and directed the Board's Hearing Officer to "meet with the parties to resolve the relevancy of those issues, to determine if, in fact, the record has already adequately addressed those issues -- and … (o)therwise take further evidence." RP 77, TR 9/13/06, p. 37, lines 16 – 26; p. 38, line 14.

29. On September 13, 2006, the Air Board also directed the Air Quality Division staff "to use the full breadth of the Appendix W in presenting … the reasons why they made the decision they did" (to issue a minor source authority-to-construct permit to Vulcan). RP 77, TR 9/13/07, p. 48, lines 20-25; p. 50, line 1. (Words in parenthesis added for clarification.)

30. On October 16, 2006, the Hearing Officer held a hearing to resolve the relevancy of the issues raised by the Air Board and to establish the scheduling of the reopened hearing and deadlines for additional pre-hearing submittals. RP 80.2.

31. The Hearing Officer's October 26, 2006 Prehearing Order for the Reopening established the four matters that the Hearing Officer had determined were to be heard during the reopened hearing:

    A. The use of (air pollutant) monitoring data from the Mountain View Community Center monitoring station in establishing background concentrations for particulate matter.

B. The use of meteorological data from that (Mountain View) monitoring station.

C. The use of Appendix W ("Guideline on Air Quality Models", an appendix to 40 CFR Part 51) by City staff in reviewing Vulcan's (air dispersion) modeling.

D. The modeling of the (Vulcan facility) paved haul roads at zero emissions. RP 80.1, p. 2. In A, B, C and D immediately above, the words in parenthesis have been added for clarification.

32. The October 26, 2006 Prehearing Order also set a date for the reopened hearing and deadlines for the parties to file Notices of Intent to present technical testimony RP 80.1, p. 1, § 1; p. 2, § 4. The dates later were extended without objection.

33. By an Order Extending Pre-hearing Deadlines and Rescheduling the Reopened Hearing, the Hearing Officer set a November 13, 2006 deadline for the City and Vulcan to file Notices of Intent to Present Technical Testimony ("NOI"), a December 4, 2006 deadline for the Petitioners to file a NOI; a December 18, 2006 deadline for the City to Vulcan to file a response or rebuttal NOI; and January 10, 2007 as the date for the Air Board's reopened hearing. RP 82, p. 1, §§ 1-4.

34. On November 13, 2006, the City filed its Second Notice of Intent to Present Technical Testimony, with related exhibits (RP 83), and Vulcan filed its Notice of Intent to Present Technical Testimony at Reopening, with related exhibits (RP 84).

35. On December 4, 2006, the Appellants filed their Notice of Intent to Present Technical Testimony at the Reopened Hearing. RP 86.
36. Notice of the reopened public hearing was published. RP 87 (newspaper); RP 90 (newspaper); RP 93 (certified mail to parties); RP 94 (electronic notice to listserve in English) RP 95 (to listserve in Spanish).
37. On December 20, 2006, the City filed its Reply to Petitioners' Notice of Intent to Present Technical Testimony at the Reopened Hearing (RP 91), and Vulcan filed its Reply to Notice of Intent to Present Technical Testimony (RP 92).
38. The reopened technical hearing began on January 10, 2007, and was continued on January 16, 2007, when the hearing closed.
39. Christopher Albrecht, George Dingman, Dario Rocha, Daniel Gates, and Jeffery Stonesifer testified on behalf of AQD. Howard Gebhart testified on behalf of Appellants. Dr. Julia Lester testified on behalf of Vulcan.
40. The transcripts of the January 2007 hearing were filed (RP 99), and the City submitted a list correcting typographical errors made in the transcript attached to its supplemental proposed findings and conclusions.
41. At the close of the reopened hearing on January 16, 2007, the parties were directed to submit supplemental findings of fact, conclusions of law and written closing arguments by February 16, 2007. RP 99, TR 1/16/07 hr, (Orth) p. 1473, lines 13 – 15. Supplemental proposed findings and conclusions and closing arguments were received on February 16 from Petitioners, except Ms. Ortiz-Strogen, the City and Vulcan.

III. Site of Facility and the Mountain View Neighborhood

A. Facility Site

42. The proposed site of Vulcan's facility is situated on the southwest corner of Williams Street and Prosperity adjacent to the Kinney Brick facility. Testimony of John Bell, TR at 240-41; Vulcan Exhibits 1, 2.

43. The facility will be located on the southern half of the property and trucks will enter from Williams on the south end of the property and exit onto Prosperity at the north end of the property heading west to Second Street. Test. of J. Bell, TR at pp. 240-42; Vulcan Exhibit 1.

44. The criteria Vulcan uses to select sites for new ready-mix facilities include whether the site is at least 10 acres in size, available for purchase, within the market area to be served, zoned for industrial and manufacturing uses, and has rail access. Test. of J. Bell, TR at p. 236.

45. The Williams Street property met all of Vulcan's site-selection criteria. Test. of J. Bell, TR at pp. 236-37.

46. The market Vulcan aims to serve with its new facility is the south and southwest areas of Albuquerque. Test. of J. Bell, TR at p. 236.

47. The property on which the facility will be located is more than 10 acres in size, has been zoned continuously M-2 (heavy manufacturing) since 1973, and has rail access. Test. of J. Bell, TR at p. 237-38; Vulcan Ex. 2.

48. Mr. Bell is unaware of any other properties on the market at the time Vulcan was selecting a site that fit Vulcan's site-selection criteria. Test. of J. Bell, TR at p. 238.

B. Mountain View Neighborhood and Neighborhood Association

49. The Mountain View Neighborhood is bounded by Woodward Avenue on the north, the Rio Grande river to the west, I-25 to the east and Isleta Pueblo to the south. Patty Grice testimony Tr. 39.

50. The Mountain View Neighborhood Association has about 140 members. Grice testimony Tr. 20.

51. The Mountain View neighborhood has approximately 4,300 residents. Grice testimony Tr. 20.

52. The members of the Mountain View Neighborhood Association are from all the different areas of the neighborhood including the Kinney Brick area, the Caminos, the Poco Loco area and the Padre Points area. Grice testimony Tr. 20-21.

53. The Mountain View Neighborhood Association is involved in many activities around the neighborhood including assistance to children during the holidays. Grice testimony Tr. 21.

54. The Mountain View neighborhood is the site of five bulk storage petroleum facilities where gas companies store diesel fuel, unleaded fuel, jet aid fuel. Grice testimony Tr. 23.

55. The gas companies fill up big tanker trucks that then deliver gas to the gas stations in Albuquerque. Grice testimony Tr. 23.

56. There is a concrete plant, Duke City Redi-Mix, which is located at the south end of Broadway in Mountain View. Grice testimony Tr. 23.

57. There is a chicken farm at the south end of Broadway in Mountain View. Grice testimony Tr. 23.

58. There are several dairies/feedlots in Mountain View. Grice testimony Tr. 23.

59. There are many contractor yards in Mountain View. Grice testimony Tr. 23.

60. There are approximately 45 junkyards or auto recyclers that are currently registered with the County as operating in Mountain View. Grice testimony Tr. 23.

61. There are several large propane storage facilities in Mountain View. Grice testimony Tr. 23.

62. The City of Albuquerque's water/wastewater treatment facility is located in Mountain View. Grice testimony Tr. 23.

63. Mountain View has several businesses that handle septic systems by pumping out people's septic tanks, and dumping the contents at the sewer plant in Mountain View. Grice testimony Tr. 23.

64. Mountain View is a community facing environmental justice issues. Grice testimony Tr. 24.

65. There is a large underground nitrate plume in Mountain View, caused by a farmer who overfertilized his field. Grice testimony Tr. 24.

66. There have been studies on the polluting impact of industry on Mountain View and the whole South Valley starting in the late 1960s. Grice testimony Tr. 25.

67. Three years ago State Representative Kiki Saavedra and New Mexico Environment Department Secretary Ron Curry set up the New Mexico Environment Department Environmental Justice Task Force that worked with Mountain View. Grice testimony Tr. 25.

68. The Mountain View Neighborhood Association has always been opposed to any type of concrete plant across the street from the community center. Grice testimony Tr. 25.

69. One of the main concerns of the neighborhood residents about the Vulcan plant is its location, directly across the street from the community center. Grice testimony Tr. 26.

70. The neighborhood residents are concerned about the heavy truck traffic from the Vulcan plant because of the dust that will be caused by the trucks and the noise from the trucks. Grice testimony Tr. 26.

71. A few years ago, a truck turning into the Kinney Brick plant ran over a child on his bike, right next door to the proposed Vulcan plant. Grice testimony Tr. 26.

72. The possibility for similar accidents involving the Vulcan plant trucks concerns residents of the community, particularly since children in the neighborhood ride their bikes up and down Prosperity Street. Grice testimony Tr. 26.

73. Approximately one hundred children attend the before and after-school programs at the Mountain View community center. Grice testimony Tr. 27.

74. Approximately 200 children attend the all day summer program at the Mountain View community center. Grice testimony Tr. 27.

75. In the summer there is a free lunch program for children at the Mountain View community center. The children eat outside of the community center. Grice testimony Tr. 27.

76. Several church groups use the community center on weekends for church services. Grice testimony Tr. 28.

77. The County has youth and adult basketball leagues that practice in the community center. Grice testimony Tr. 28.

78. Youth and adult baseball teams use the outside baseball fields year-round. Grice testimony Tr. 28.

79. The Mountain View Neighborhood Association holds its meetings at the community center. Grice testimony Tr. 28.

80. All the air quality public information meetings are held at the community center. Grice testimony Tr. 28.

IV. Air Dispersion Modeling.

A. In General

81. Air dispersion modeling is a permitting tool widely used by federal, state, and local air agencies to estimate potential air impacts from new and modified facilities and to determine whether emissions for a source will meet relevant air quality standards and other applicable requirements. Testimony of Julia Lester, Ph.D., TR at p. 817; Testimony of Howard Gebhart, TR at p. 52.

82. The EPA-approved model used in connection with the evaluation of Vulcan's Application was the Industrial Source Complex 3 (ISC) dispersion model. The ISC is commonly used to assess the potential air impacts of industrial facilities. Test. of Dr. Lester, TR at p. 820; Test. of Gebhart, TR at p. 55; Vulcan Ex. 4, p. 1.

83. ISC is a computer model that requires the input of certain parameters and data to predict concentrations of pollutants emitted from a facility. Key model inputs include, among others, emission factors and rates, description of emission sources, meteorological data (including wind speed, wind direction and

temperature), terrain characteristics, and receptor points. Test. of Dr. Lester, TR at p. 818-20.

84. EPA, the New Mexico Environment Department (NMED), and AQD have each published their own modeling guidelines which provide recommendations regarding air quality modeling techniques and analysis. Gebhart Exhibit 4; Vulcan Exhibit 4.

85. The results of the ISC model, or the "model output," is expressed in terms of concentrations of pollutants from a source at certain receptor points. A modeled pollutant concentration is then added to the "background" concentration for such pollutant, and the sum of these concentrations are then compared to the applicable air quality standard to determine compliance. Test. of Dr. Lester, TR at p. 820.

86. A facility is in compliance with a particular air quality standard if the predicted pollutant concentration generated by the model added to the background pollutant concentration does not exceed the standard. This is a pass/fail test. Test. of Dr. Lester, TR at p. 820, 834; Test. of Gebhart, TR at p. 56. With respect to the TSP 24 hour average standard, for example, the model will generate a 24-hour average TSP concentration for each day of the year modeled - or a total of 365 readings. If only one of those 365 readings exceeds the TSP 24-hour average standard of 150 µg/m3, then the source being modeled will fail.

B. Applicable Air Quality Standards

87. The Albuquerque-Bernalillo County air quality standards applicable to the facility are:

TSP 24-hour average - 150 micrograms per cubic meter ("µg/m3")

TSP annual average - 60 µg/m3

PM10 24-hour average - 150 µg/m3

PM10 annual average - 50 µg/m3

PM2.5 24-hour average - 65 µg/m3

PM2.5 annual average - 15 µg/m3

AR 78 at EHD 411.

88. The standards for TSP are not health-based standards. Test. of Dr. Lester, TR at pp. 835-36; Test. of G. Dingman, TR at p. 471.

89. The standards for PM10 and PM2.5 are health-based standards. Test. of Dr. Lester, TR at p. 835.

90. No National Emission Standard for Hazardous Air Pollutants applies to the Vulcan facility. Test. of C. Albrecht, TR at p. 804; AR 99 at EHD 584.

C. Background Concentrations

C. 1 General

91. The establishment of background concentration for each pollutant requires the science and expertise of the permitting authority. Test. of Dr. Lester, TR at p. 832-33.

92. Monitoring data is actual physical measurements of pollutants that are made at a Division monitoring station. RP 99, TR 1/10/07 hr., (Dingman) p. 1054, lines 20-24.

93. Current Appendix W states, "Air quality data should be used to establish background concentrations." Gebhart Ex. 8 (current App. W), p. 68242, Sec. 8.2.1.b. "Use air quality data collected in the vicinity of the source to determine

the background concentrations." Gebhart Ex. 8 (current App. W), p. 68242, Sec. 8.2.2.b.

94. AQD established background concentrations based upon monitoring data from monitoring stations deployed throughout the City of Albuquerque and County of Bernalillo. Test. of D. Rocha, TR at p. 409; Test. of G. Dingman, TR at 476-478.

95. AQD established the following applicable background concentrations for TSP, PM10, and PM2.5 for use in all modeling for sources located or to be located within Bernalillo County:

    TSP 24-hour average - 36.0 µg/m3

    TSP annual average – 19.0 µg/m3

    PM10 24-hour average - 18.0 µg/m3

    PM10 annual average - 9.5 µg/m3

    PM2.5 24-hour average - 9.0 µg/m3

    PM2.5 annual average - 4.8 µg/m3

    Test. of D. Rocha, TR at p. 407; AR 78 at EHD 411.

96. These background concentrations were used in processing Vulcan's Application, and have been historically and consistently applied by AQD in processing other permit applications in Bernalillo County. Test. of Rocha, TR at p. 407, 440.

97. Typically, individual permit application files do not contain documents and materials which show how the permitting authority established background concentrations used in air dispersion modeling. Test. of Dr. Lester, TR at p. 833.

98. The background concentrations for TSP and PM10 that former AQD staff member, Raj Solomon, proposed Vulcan use in its modeling early in the

application review process were incorrect, and were not concentrations that AQD had historically or consistently used in processing permit applications. Test. of Rocha, TR at p. 440, 445. Mr. Solomon simply made a clerical error in his letter describing the background concentrations.

C. 2 TSP Background Concentrations

99. TSP, or total suspended particulates, is particulate matter larger than approximately 30 micrometers (microns) (RP 99.1, City Ex. 45, p. 1) and includes PM10 and smaller particulates, which, in turn, includes PM2.5 and smaller particulates.

100. TSP background cannot be determined from actual TSP data monitored in Bernalillo County (RP 99, TR 1/10/07 hr., (Dingman) p. 1035, p. 23-25) because TSP ceased being a federal criteria pollutant in 1987, the state of New Mexico has stopped monitoring for TSP, and the Division stopped monitoring TSP in May 1989 (RP 99.1, City Ex. 23, p. 5). TR 1/10/07, (Albrecht) p. 964, lines 6-9; p. 987, lines14-15.

101. Of the 8 to 10 monitoring stations in Bernalillo County, including the Mountain View monitoring station, none currently monitors for TSP. Dingman Test., TR at 1054-1055; Lester Test., TR at 1196. The Mountain View monitoring station has never monitored for TSP. Lester Memorandum ("Lester Memo."), dated November 13, 2006, attached to Vulcan's NOI as Exhibit A, at 1.

102. Monitoring of TSP ceased in New Mexico and throughout the Nation shortly after EPA revoked its TSP standards on the grounds that particles with sizes greater than 10 microns are not considered respirable and thus do not present

adverse health effects. City Exhibit. ("City Exh.") 23 at 5; City. Exh. 44 at 5; Lester Memo. at 1.

103. While EPA revoked federal TSP standards, the New Mexico Environment Department ("NMED') and Bernalillo County have retained their state and local TSP standards. These state and local TSP standards are not health-based but rather are secondary standards designed to promote the general welfare. Testimony of Chris Albrecht ("Albrecht Test."), Transcript ("TR") at 987.

104. The monitoring stations in Bernalillo County, including the Mountain View monitoring station, currently monitor for particles less than 10 microns (PM10) in diameter, which are a subset of TSP. Testimony of George Dingman ("Dingman Test."), TR at 1057.

105. During the Division's 2006 review of the Division's existing method for establishing a TSP background concentrations in Bernalillo County, the Division conducted extensive research regarding TSP. RP 99.1, City Exs. 15, 16, 44, 45, 46.

106. A lack of TSP monitoring has made it impossible for AQD to establish TSP background based upon actual monitored data. As a work around to the lack of TSP monitoring data, AQD recently devised a cumulative modeling methodology. This methodology was developed in response to the Board's September, 2006 call to reopen the evidentiary record in this case. The new methodology is included in AQD's revised modeling guidelines issued on November 7, 2006. Dingman Test., TR at 1036-1037; Testimony of Dr. Julia

Lester ("Lester Test."), TR at 1214-1217; Testimony of Jeffrey Stonesifer ("Stonesifer Test."), TR at 1403-1405; City Exh. 23 at 5; City Exh. 44 at 5.

107. Inherent in AQD's methodology is the concept that TSP background in the vicinity of a project consists of ambient concentrations of particles less than 10 microns—PM10—as well as ambient concentrations of particles greater than 10 microns. Ambient concentrations of PM10 can be directly determined by the averaging of actual monitoring data, whereas the ambient concentrations of the larger particles cannot. City Exh. 44 at 5.

108. The Division concluded that, because of the aerodynamic properties of particulates and gravitational settling, the part or "fraction" of TSP that is PM10 and smaller already is accounted for in the PM10 background concentration, which is based on actual monitored data, and that the part of TSP that is larger than PM10, and therefore is heavier than PM10, tends to fall out of the air much more rapidly than particulates that are PM10 and smaller. RP 99, TR 10/10/07 hr., (Dingman) p. 1036, lines 5-13; TR. 1/16/07, (Stonesifer) p. 1405, lines 23-25; RP 99.1, City Ex. 45, p. 1.

109. The TSP particulates that are larger and heavier than the PM10 particulates would drop out in the vicinity where they are emitted. RP 99, TR 1/16/07, (Stonesifer) p. 1432, lines 15-19; TR 1/10/07 hr., (Lester) p. 1216, lines 1-3.

110. Division expert witness Jeffrey Stonesifer testified that gravitational settling is a function of not only density, but the square of the diameter, so as particles get bigger, the settling rate doesn't increase linearly, it increases

parabolically, very rapidly because it is proportional to the square of the diameter. RP 99, TR. 1/16/07 hr., (Stonesifer) p. 1438, lines 19-25.

111. Only the project itself and "nearby sources" of TSP emissions are expected to contribute to ambient concentrations of particles greater than 10 microns in the vicinity of the project due to the rapid fall-out rate of the larger particles. Airborne concentrations of large particles (particles larger than 10 microns) are only significant in the vicinity of the source of such particles. Dingman Test. at 1032, 1036; Stonesifer Test., TR at 1432, 1438-1439, 1450-1451; City Exh. 44 at 5; City Exh. 45.

112. AQD's cumulative modeling methodology involves two steps. First, the concentration of the coarser fraction of TSP—particles greater than 10 microns—is determined by modeling the TSP emissions from the project at issue together with the TSP emissions from adjacent or "nearby" sources of TSP. Second, the maximum TSP impact found in the cumulative modeling is added to the background value for particles less than 10 microns (as established by actual PM10 monitoring data), to obtain the TSP "design concentration." That design concentration is then compared to the TSP air quality standard to determine compliance with the standard. Lester Test., TR at 1214-1217; Stonesifer Test., TR at 1413-1414, 1432; City Exh. 44 at 5; City Exh. 23 at 5.

113. Section 8.2.3.b of Appendix W to 40 C.F.R. § Part 51 ("Appendix W") provides that "identification of nearby sources calls for the exercise of professional judgment by the appropriate reviewing authority." Stonesifer Test., TR at 1435-1436; Gebhart Exh. 4 at 68,243.

114. AQD included the Kinney Brick facility as a "nearby source" of TSP emissions for purposes of the cumulative modeling concerning the proposed Vulcan facility. Dingman Test., TR at 1036-1037; Stonesifer Test., TR at 1432; Lester Test., TR at 1255.

115. Mr. Gebhart's criticism that AQD's cumulative modeling approach does not account for TSP from other sources such as diesel trucks and residential wood burning is incorrect because those sources do not generate TSP. Lester Test., TR at 1217; Stonesifer Test., TR at 1436-1437.

116. AQD's cumulative modeling approach to determining TSP background accounts for the variation in TSP/PM10 ratios found at different emission sources. Stonesifer Test., TR at 1431-1432.

117. The scientific basis for NMED's method of extrapolating TSP background (multiplying PM10 background by a constant factor of 1.33) is not apparent. Stonesifer Test., TR at 1430; Testimony of Howard Gebhart ("Gebhart Test."), TR at 1152; City Exh. 56 at 4.

118. Mr. Gebhart's selection of a 1.5 factor to extrapolate TSP background concentrations from PM10 background concentrations is, by his own admission, arbitrary, without precedence, and without any technical or regulatory basis. Gebhart Test., TR at 1151-1152; Lester Test., TR at 1214; Stonesifer Test., TR at 1430.

119. Mr. Gebhart's 1.5 factor and NMED's 1.33 factor both fail to account for site variation in the ratio of TSP to PM10. City Exh. 56 at 4.

120. A survey of various western states conducted by AQD regarding TSP monitoring and modeling revealed that (a) only one air agency surveyed outside of New Mexico (Washington State) has retained a TSP standard; (b) no air agency surveyed outside of New Mexico required modeling for TSP as part of an air permit application; and (c) Washington State assumes that compliance with the PM10 standard equates to compliance with TSP standards. Albrecht Test., TR at 991-1000, 1011; City Exh. 15-16. AQD's methodology is more conservative than Washington's in that AQD takes into account the modeled TSP impacts of nearby sources and Washington does not.

C. 3 PM10 Background Concentrations

1. AQD's New GIS Method

121. Following the Board's decision to reopen the record, AQD revisited its methodology for establishing PM10 background concentrations and set new 24-hour and annual PM10 background concentrations by averaging the monitoring data collected at each of the "Federal Reference Method" or "Federal Equivalent Method" monitoring stations in Bernalillo County and spatially interpolating the data using Geographical Information System ("GIS") to graphically plot the range of PM10 background concentrations throughout Bernalillo County. Stonesifer Test., TR at 1409-1413; Dingman Test., TR at 1055-1059; City Exh. 47-49.

122. AQD's new approach to establishing PM10 background concentrations, like its previous approach, is consistent with Section of 8.2.1.b of Appendix W which calls for the setting of background concentrations based upon a network of monitoring stations. Stonesifer Test., TR at 1410-1411; Gebhart Exh. 4 at 68242.

123. Because the Vulcan facility is near the Mountain View monitoring station, the GIS-generated PM10 24-hour and annual background concentrations for the Mountain View neighborhood weighted the data from the Mountain View monitoring station at 100%. RP 99, Dingman Test., TR at 1059; Stonesifer Test, TR at 1419.

2. Evaluation of Mountain View Monitoring Station Data

124. The monitoring data which AQD "averaged" to obtain annual and 24-hour PM10 background concentrations included data from the Mountain View monitoring station for the calendar years 2004 and 2005. Under applicable EPA regulations, monitoring data collected from the Mountain View Monitoring Station in the years 2002, 2003, and 2006 are invalid and thus cannot be, and were not, used in determining background. Testimony of Daniel Gates ("Gates Test."), TR at 1360-1361.

125. EPA requires that a full "calendar year" of air quality data be utilized when evaluating attainment of air quality standards or in evaluating modeling data. Gates Test., TR at 1357; Dingman Test., TR at 1057, 1125-1126; City Exh. 17 at 61224.

126. Data collection at the Mountain View monitoring station did not begin until August 2002. At the time of the reopened hearing, the third quarter of 2006 had not yet been completed. Gates Test., TR at 1360. Because the 2002 and 2006 data sets from the Mountain View Monitoring Station are incomplete, they are not valid for use in determining attainment and thus not fit for establishing

background concentrations. Gates Test., TR at 1360; Lester Test., TR at 1202-1203

127. Data from 2003 is invalid because the data capture rate for the first quarter of that year was 73.3%. EPA requires that the data capture rate per quarter must equal or exceed 75%. Gates Test., TR at 1357, 1361, 1364; City Exh. 56 at 2.

3. Siting of the Mountain View Monitoring Station

128. The original purpose of the Mountain View monitoring station, also known as the South Valley monitoring station, as approved by the EPA, was to determine ozone regional transport, which is the classification of the Mountain View monitoring station in the AIRES database. RP 99, TR 1/16/07 hr., (Gates) p. 1346, lines 2-6.

129. The original purpose of the Mountain View monitoring station was not to monitor particulate matter. RP 99, TR 1/16/07 hr., (Gates) p. 1346, lines 7-9.

130. The location of the Mountain View monitoring station does not satisfy all of EPA's siting criteria applicable to PM10 monitoring stations. Lester Test., TR at 1197.

131. EPA's siting criteria for ambient air quality monitors for PM10 and PM2.5 directs that monitoring stations "should not be located in an unpaved area unless there is vegetative ground cover year round, so that the impact of wind blown dust will be kept to a minimum." Lester Test., TR at 1199-1201; Lester Memo. at 2; Vulcan Exh. 9 at slide 5; 40 C.F.R. Part 58, App. E, § 8.4.

132. EPA's guidance document entitled "Network Design and Optimum Site Exposure Criteria for Particulate Matter" states: "A single, well-sited monitor,

located well away from any nearby sources or source areas, may be adequate for determining background concentrations." Lester Memo. at 2; EPA-450/4-87-009.

133. Further EPA guidance directs that "[i]f a monitoring site is to be used to determine air quality over a much larger area, such as a neighborhood or city, a monitoring agency should avoid placing a monitoring probe, path, or inlet near local, minor sources." Lester Test., TR at 1200-1201; Vulcan Exh. 9 at slide 6; 71 FR 61324.

134. The Mountain View monitoring station is located in an unvegetated field immediately adjacent to an unpaved shoulder and a pallet loading operation. Lester Test., TR at 1197-1202; Lester Memo. at 2; Vulcan Exh. 9 at slides 5-6.

135. The surfaces of the local sources of particulate matter—the unvegetated playing field, unpaved shoulder and pallet loading operation—can be disturbed in low and high wind conditions resulting in monitoring values significantly influenced by local emissions rather than accurately representing background ambient levels of the Mountain View area. Lester Test., TR at 1197-1202; Lester Memo. at 2.

136. Due to its location, the Mountain View monitoring station likely overstates the actual PM10 concentrations in the Mountain View neighborhood and thus the use of monitoring data from such station results in an over-conservative estimate of PM10 background concentrations. Lester Test., TR at 1198.

4. AQD's 24-Hour Average Is Conservative

137. No provision of Appendix W requires that the 24-hour average PM10 background concentration be higher than the annual average. Lester Memorandum, dated December 20, 2006, attached to Vulcan's Reply NOI ("Lester Reply Memo."), at 3.

138. Like AQD, NMED and the State of Nevada use the annual mean PM-10 concentration for their 24-hour PM10 background concentrations. City Exh. 44 at 4.

139. AQD's approach to calculating the PM10 24-hour average is based upon a conservative interpretation of Section 8.2.2.b of Appendix W which calls for the averaging of monitoring values for meteorological conditions that represent the "worst case modeling results," i.e., the days on which the modeling receptors are reading the highest concentrations of emissions from the source being modeled. Lester Test., TR at 1204-1206; Gebhart Exh. 4 at 68242.

140. Worst case modeling results generally occur in New Mexico under the same meteorological conditions that generate low monitoring values—light wind conditions. Conversely, high monitoring values generally coincide with high wind conditions. Lester Test., TR at 1205-1213; Stonesifer Test., TR at 1421-1426; Gebhart Test., TR at 1148-1149; City Exh. 56 at 2-3.

141. Averaging of monitoring values associated with the worst case modeling days, i.e., the averaging of low monitoring values, would result in the establishment of low background concentrations which may not be protective of public health. Stonesifer Test., TR at 1422-1423; City Exh. 56 at 2

142. Instead of averaging only those monitoring concentrations for meteorological conditions that represent the "worst modeling days," AQD averaged monitoring values for all meteorological conditions, except the natural events that are excluded when determining attainment status. AQD's approach results in background concentrations that are more protective of public health than if it had only averaged the worst modeling days. Lester Test., TR at 1206-1212; Stonesifer Test., TR at 1422-1423; City Exh. 56 at 2.

5. Gebhart's Determination of PM10 Background

143. Gebhart's calculation of PM10 background is based upon monitoring data from only the Mountain View monitoring station, which ignores the EPA requirement to establish background using a network of monitoring stations. Gebhart Test., TR at 1136; Gebhart Exh. 4 at 68242; Lester Reply Memo. at 3.

144. Gebhart's calculation of PM10 background includes data from the Mountain View monitoring station for the years 2002, 2003 and 2006, which are invalid. Gebhart Test., TR at 1139, 1142; Gates Test., TR at 1360-1361; Lester Test., TR at 1202-1203.

145. Gebhart's use of partial years of monitoring data is contrary to the EPA requirement that a full calendar year of monitoring data be used in determining background. Dingman Test., TR at 1066-1067; City Exh. 56 at 2.

146. Gebhart had no technical or regulatory basis for selecting the 80th percentile of monitoring values from the Mountain View monitoring station to represent the 24-hour average PM10 background concentration. Gebhart Test.,

TR at 1149-50; Lester Test., TR at 1204; Stonesifer Test., TR at 1428; City Exh. 56 at 3; Lester Reply Memo. at 3.

147. Neither Section 8.2.2 of Appendix W, nor any other provision of Appendix W, calls for the use of a percentile when determining background concentrations. Section 8.2.2 requires an averaging of monitoring values to obtain a background level. Lester Reply Memo. at 3; Stonesifer Test., TR at 1429.

148. Gebhart's selection of the 80th percentile to represent the 24-hour PM10 background is aphysical and is based upon an erroneous interpretation of Section 8.2.2 of Appendix W in that the meteorological conditions which give rise to high monitoring values (i.e., monitoring values in the 80th percentile) are the opposite meteorological conditions which give rise to worst case modeling. Lester Reply Memo. at 3; Lester Test., TR at 1205-1212; Stonesifer Test., TR at 1426.

149. Gebhart's suggestion that the "high sixth high" monitoring value should be used to determine the 24-hour average background or to evaluate how close the PM10 concentrations in the Mountain View area are to the air quality standards is incorrect because the "high sixth high" is a modeling concept that is not used in developing backgrounds or determining attainment. Stonesifer Test., TR at 1428-1429.

C. 4 PM2.5 Background Concentrations

150. PM2.5 is particulate matter with an aerodynamic diameter of 2.5 microns and less. RP 99, TR 1/16/07, (Gates) p. 1345, lines 21-22. PM2.5 particles are so small and light they are like a gas and stay suspended in the air (RP 99, TR

1/10/07 hr., (Dingman) p. 1036, lines 13-17; TR 1/16/07 hr., (Stonesifer) p. 1423, lines 2-4).

151. PM2.5 monitored data that is used to determine compliance with PM2.5 National Ambient Air Quality Standards (NAAQS) must be recorded by a federal reference method (FRM) or federal equivalency method (FEM) monitor, as required by 40 CFR 50, Appendix N, Interpretation of the NAAQS for PM2.5. RP 17, p. 61227, § 1(a).

152. Data from a special purpose monitor should not be used to determine attainment or non-attainment with PM2.5 NAAQS or in modeling to establish PM2.5 background concentrations. RP 17, 40 CFR 50, Appendix N, Interp. of the NAAQS for PM2.5, p. 61227, § 1(a); 40 CFR 50, Appendix K, p. 61224, § 1(c); RP 99, TR 1/16/07 hr., (Stonesifer) p. 1418, lines 23-25; p. 1419, lines 1-2.

153. The PM2.5 monitor at the Mountain View, also called South Valley, station, is a special purpose monitor not a FRM or FEM monitor (RP 99, TR 1/10/07 hr., (Dingman) p. 1059, lines 18-23; TR 1/16/07, (Gates) p 1366, lines 6-12; TR 1/16/07, (Stonesifer) p. 1418, lines 23-24), and is not used to evaluate against the NAAQS (TR 1/16/07 hr., (Gates) p. 1365, lines 6-15). Petitioners' witness Howard Gebhart also testified that a PM2.5 continuous monitor is a special purpose monitor, not a federal reference method (FRM) monitor. RP 99, TR 1/10/07 hr., (Gebhart) p. 1174, lines 7-12.

154. In determining PM2.5 background concentrations, AQD appropriately averaged the PM2.5 monitoring data from the two Bernalillo FRM monitors

located in the Southeast Heights and at Del Norte. Dingman Test., TR at 1059; City Exh. 44 at 6.

155. The Mountain View monitoring station is not a FRM. Rather, it is a "special purpose monitor" that, under applicable EPA regulations, is not suitable for use in determining PM2.5 attainment status or in setting PM2.5 background concentrations. Dingman Test., TR at 1060; Stonesifer Test, TR at 1418-1419; City Exh. 56 at 1; City Exh. 44 at 6.

156. Gebhart inappropriately relied upon monitoring data from the Mountain View monitoring station in calculating PM2.5 background concentrations. Gebhart Test, TR at 1139; Dingman Test., TR at 1060; Stonesifer Test, TR at 1418-1419; City Exh. 56 at 1.

157. Gebhart inappropriately used partial years of monitoring data in calculating PM2.5 background concentrations. Dingman Test., TR at 1067.

D. Vulcan's Air Dispersion Modeling

158. By email dated August 19, 2005, AQD accepted Vulcan's fourth modeling submittal. Test. of D. Rocha, TR at p. 286; AR 75 at EHD 404.

159. Upon receipt of Vulcan's fourth modeling submittal, AQD ran Vulcan's model twice, once to confirm the results that Vulcan reported, and the second time to allay concerns regarding bag house emissions. Testimony of Jeff Stonesifer, TR at p. 551.

160. AQD determined that Vulcan's fourth modeling submittal complied with AQD's air dispersion modeling requirements. Test. of J. Stonesifer, TR at p. 520.

E. Results of Vulcan's Modeling

161. Vulcan's fourth modeling results are as follows: a) the maximum modeled concentration for the 24-hour TSP average plus background was 147.1 µg/m3, less than the New Mexico standard of 150 µg/m3; b) the maximum modeled concentration for the annual TSP average plus background was 33.6 µg/m3, 56% of the New Mexico standard of 60 µg/m3; c) the maximum modeled concentration for the 24-hour PM10 average plus background was 67.6 µg/m3, 45% of the New Mexico standard of 150 µg/m3; d) the maximum modeled concentration for the annual PM10 average plus background was 16.3 µg/m3, 33% of the New Mexico standard of 50 µg/m3; e) the maximum modeled concentration for the 24-hour PM2.5 average plus background was 36.5 µg/m3, 56% of the New Mexico standard of 65 µg/m3; and f) the maximum modeled concentration for the annual PM2.5 average plus background was 8.6 µg/m3, 57% of the New Mexico standard of 15 µg/m3. Test. of Dr. Lester, TR at p. 834-35; AR 78 at EHD 411.

162. The Vulcan facility will not emit any air contaminant in excess of a New Source Performance Standard, a National Emission Standard for Hazardous Air Pollutants, or a regulation of the Board.

163. The Vulcan facility will not emit, in such quantity and duration as to cause imminent danger to public health, a hazardous air pollutant for which no National Emission Standard for Hazardous Air Pollutants exists.

164. The construction and operation of the Vulcan facility in accordance with the Permit will not cause or contribute to air contaminant levels in excess of any National Ambient Air Quality Standard.

165. The construction of the Vulcan facility can be completed within a reasonable time.

166. The construction and operation of the Vulcan facility in accordance with the Permit will not violate any provision of the New Mexico Air Quality Control Act.

167. The 2006 modeling exercises related to the Vulcan facility that were executed by Division Environmental Health Specialist George Dingman (RP 62, TR 5/24/06 hr., (Dingman) p. 461, lines 21-22) do not change the modeling executed and submitted by Vulcan to the Division in 2005. RP 99, TR 1/10/07 hr, (Dingman) p. 1042, lines 17-21.

F. Conservative Assumptions in the Modeling

168. The Vulcan Model incorporated a number of conservative assumptions which tended to over-predict the potential impact of the emissions from the Vulcan facility to ensure that actual emissions from the facility would not cause an exceedance of applicable air quality standards. Test. of Dr. Lester, TR at p. 823; Test. of J. Stonesifer, TR at pp. 523-29; Vulcan Exh. 4, p. 1-2.

169. The use of the rural dispersion coefficient in ISC air dispersion modeling tends to result in a higher particulate matter concentration compared to when an urban dispersion coefficient is used. Test. of Dr. Lester, TR at 826-27, 856; Vulcan Exhibit 4, p. 2.

170. Because the Vulcan site can be neither characterized as rural nor urban but shares characteristics of both, Vulcan's use of the rural dispersion coefficient as opposed to the urban dispersion coefficient in the modeling produced high conservative concentration estimates. Test. of Dr. Lester, TR at pp. 826-27; Test. of J. Stonesifer, TR at p. 526; AR 51 at EHD 295-96.

171. Lumping multiple emissions sources at a facility into a single source for purposes of modeling tends to generate a higher PM concentration estimate than if the sources were separated. Test. of Dr. Lester, TR at p. 828; Test. of J. Stonesifer, TR at p. 525; Vulcan Exhibit 4 at p. 3;

172. Mr. Gebhart's report states that the lumping of multiple emissions into a single source "appears to be extremely conservative and likely provides a significant overestimate of the plant impacts." Test. of H. Gebhart, TR at p. 146; Gebhart Exh. 3, p. 3.

173. Vulcan's modeling is conservative because it lumps multiple emission sources at the facility into a single source. Test. of Dr. Lester, TR at p. 828; Vulcan Exhibit 4 at p. 3.

174. Wind erosion emissions are typically not included in ISC air dispersion models because such models are not designed to recreate the physical reality that erosion emissions only occur when wind speeds exceed a threshold surface velocity. When windblown emissions are included in the ISC model, the model assumes, contrary to reality, that wind erosions will occur every hour of every day. Test. of Dr. Lester, TR at p. 829; Vulcan Exhibit 4 at p. 3.

175. Vulcan's inclusion of wind erosion of disturbed areas in the modeling is a highly conservative assumption. Test. of Dr. Lester, TR at p. 829; Test. of J. Stonesifer, TR at pp. 527-29; Vulcan Exhibit 4 at p. 3.

176. The modeling assumption that Vulcan's plant will operate 24 hours per day, 7 days per week, 365 days per year is conservative since it is too cold for concrete batch plants to operate on winter nights and, by definition, a concrete batch plant is a non-continuous operation. Test. of J. Stonesifer, TR at p. 523, 532.

177. Vulcan's use of 334 degrees Fahrenheit for the exit temperature of the facility's boiler is a conservative assumption in the modeling resulting in a higher than expected emission concentration estimate. Test. of J. Stonesifer, TR at p. 524.

G. Meteorological Data

178. EPA guidance states that meteorological data obtained from the National Weather Service may be used if the data is adequately representative for the particular modeling application. Gebhart Exhibit 4 at 8.3.2.1.

179. The 1991 meteorological data collected by the National Weather Service at the Albuquerque International Airport and used in the Vulcan Model is adequately representative of the meteorological conditions at the proposed site for the Vulcan facility. Test. of Dr. Lester, TR at p. 825; Test. of J. Stonesifer, TR at p. 549; Vulcan Exh. 4, p. 2.

180. The Albuquerque Airport and the proposed site are in close proximity to each other, both sites are exposed to similar wind patterns, and there are no major

terrain or topographical features between the two sites. Test. of Dr. Lester, TR at p. 825; Test. of J. Stonesifer, TR at pp. 549-50; Vulcan Exh. 4, p. 2.

181. It is the common practice of AQD to utilize only one year of meteorological data in modeling. Test. of J. Stonesifer, TR at pp. 535-36; Test. of C. Albrecht, TR at pp. 796-97.

182. In Dr. Lester's 14 years of experience with the South Coast Air Quality Management District, the regulatory agency for the management district covering the greater Los Angeles District - an area with the most severe particulate matter problems in the nation - and her 2 years as a private consultant, it is customary for permitting authorities to utilize only one year of meteorological data in modeling. Test. of Dr. Lester, TR at 814, 825, 855.

183. During Chris Albrecht's nine-and-a-half years of experience as a private consultant prior to joining AQD, which involved the preparation and submission of air permit applications and modeling to NMED and AQD, his company never provided five years of meteorological data in support of a permit application. Test. of C. Albrecht, TR at pp. 796-97.

184. During the seven-and-a-half years Mr. Albrecht has worked at AQD, he has personally processed and written over 260 permits and, as a supervisor, reviewed over 800 permits. None of those Applicants were required to submit five years of meteorological data. Test. of C. Albrecht, TR at 797.

185. At the Mountain View station, also called the South Valley station, both meteorological data and monitored pollutant data are recorded. RP 99, TR 1/16/07 hr., (Gates) p. 1345, lines 9-11.

186. Federal regulations and guidelines do not require meteorological equipment to be installed or sited with the kind of air pollution monitoring equipment that is located at the Mountain View station. RP 99, TR 1/16/07 hr., (Gates) p. 1346, lines 10-25.

187. **T**he meteorological equipment operated by the Division does not follow the same data capture, data recovery and data validation requirements as the Division's monitoring equipment. RP 99, TR 1/16/07 hr., (Gates) p. 1347, lines 6-13.

188. Daniel Gates is the Data Manager/Senior Engineer of the Quality Assurance Section of the Division (City Ex. 35) and evaluated the Division's meteorological stations in Bernalillo County to determine whether the data from the meteorological sites could be used in air dispersion modeling. Mr. Gates used the EPA document Meteorological Monitoring Guidance for Regulatory Modeling Applications (RP 99.1, City Ex. 37) during the Division's evaluation process (RP 99, TR 1/16/07 hr., (Gates) p.1352, lines 19-25; p. 1353, lines 1-8).

189. The Division determined the meteorological data from the Mountain View monitoring station lacks quality assurance as outlined in current Appendix W and is not appropriate for use in air dispersion modeling that is submitted with a permit application. RP 99, TR 1/16/07 hr., (Stonesifer) p. 1386, lines 1-10. The Division's analysis and conclusions are documented in an October 23, 2006 memorandum regarding "Quality of AQD meteorological data". RP 99.1, City Ex. 39.

190. Specific issues regarding the meteorological data compiled at the Division meteorological stations include the fact that the Division's meteorological monitors do not record cloud cover, are not subject to quality assurance regarding solar radiation, temperature sensors are not calibrated frequently, and the Division's stations have recorded inaccurate wind speeds and wind directions. RP 99.1, City Ex. 39.

191. As a result of the Division's review, the Division determined that none of the meteorological sites in the Division's network in Bernalillo County met the EPA requirements for meteorological data to use in air dispersion modeling. RP 99, TR 1/16/07 hr., (Gates) p. 1353, lines 8-9.

192. The meteorological data collected by the Mountain View monitoring station, while suitable for use "as a first cut" in evaluating high wind events for purposes of data flagging, is not fit for use in modeling because the monitoring station and datasets are not subject to requisite quality control/quality assurance procedures to ensure the reliability and accuracy of the monitoring data. Gates Test., TR at 1352-1355; Stonesifer Test., TR at 1390, Gebhart Test., TR at 1173-1174; Lester Test., TR at 1218-1219; City Exh. 39 at 1-2.

193. Section 8.3.2.1.a of Appendix W states that "[s]ite specific measured data are…preferred as model input, provided that appropriate instrumentation and quality assurance procedures are followed and that the data collected are adequately representative…." RP 62.1, Gebhart Exh. 4 at 68,244, Section 8.3.2.1.a.

194. EPA guidance requires that quality assurance/quality control procedures are implemented to ensure that monitoring data collected meet standards of reliability and accuracy. City Exh. 37 at 8-1 to 8-26.

195. No quality assurance is applied to measurements taken at the Mountain View monitoring station relating to solar radiation, 10-meter temperature, relative humidity, and sigma theta, and only minimal quality assurance is applied to 2-meter temperature measurements. No torque checks are performed on the wind speed and wind direction instruments, and the frequency of calibration of the barometric pressure equipment is insufficient. City Exh. 39 at 1-2.

196. AQD's review of the 2004 through 2006 meteorological data from the Mountain View monitoring station revealed a host of data flaws including, but not limited to, missing sigma-theta measurements and numerous misreadings of wind direction and wind speeds. Stonesifer Test., TR at 1396, 1441-1443; City Exh. 39 at 3; City Exh. 40.

197. The City, Vulcan, and Appellants agree that the appropriate meteorological data for use in the Vulcan modeling is the data collected by the National Weather Service ("NWS") at the Albuquerque International Airport. Stonesifer Test., TR at 1434, 1458-1458; Lester Test., TR at 1219; Gebhart Test., TR at 1157; Gebhart Exh. 8 at 12.

198. The meteorological data collected by NWS at the Albuquerque International Airport is adequately representative of the meteorological conditions at the proposed site for the Vulcan facility because the airport and the proposed site for the Vulcan facility are in close proximity to each other, both sites are

exposed to similar wind patterns, and there are no major terrain or topographical features between the two sites. Lester Test., TR at 1219; Stonesifer Test., TR at 1434, 1458-1459; City Exh. 39 at 3-4.

199. It is common in modeling applications to utilize meteorological data collected at a NWS meteorological station that is not at the site of the proposed facility but is in the vicinity of the proposed facility. Lester Test., TR at 1219-1220; Stonesifer Test., TR at 1452.

200. Section 8.3.1.2.a of Appendix W states that, when using five years of meteorological data, "[c]onsecutive years from the most recent readily available five-year period are preferred." Gebhart Exh. 4 at 68244 (emphasis added).

201. The most recent, readily available, one-year, NWS meteorological data set for use in ISC modeling is 1991 and the most recent, readily available, five-year, NWS meteorological data set for use in ISC modeling is 1986 through 1990. NWS meteorological data post-dating 1991 cannot be formatted for use in ISC as a result of changes NWS made in the early 1990s to its method of handling and archiving meteorological data. Dingman Test., TR at 1103-1104.

H. Minor Source Baseline Date

202. The Minor Source Baseline Date for PM10 in Air Quality Control Region 152, which includes Bernalillo County, has not been triggered. Test. of Dr. Lester, TR at p. 823; Vulcan Exhibit 4.

203. Because the Minor Source Baseline Date has not been triggered, Vulcan's predicted PM10 impacts are not required to meet Class II Prevention of

Significant Deterioration increments. Test. of Gebhart, TR at pp. 143-44; Test. of Dr. Lester, TR at pp. 823-24; Vulcan Exhibit 4.

I. Verification of Modeling

204. At the June 23, 2005 public hearing on Vulcan's Application, AQD staff understood the public to be concerned about the methodology used in modeling the potential emissions from the facility. Specifically, AQD understood that some members of the public thought that a cumulative modeling of sources in the Mountain View area should have been performed. Test. of G. Dingman, TR at pp. 464-65; Test. of C. Albrecht, TR at pp. 632-34, 799-800.

205. In direct response to public concerns expressed at the June 23, 2005 public hearing, AQD undertook a comparative modeling study to test the adequacy and conservativeness of two methods of air modeling: a cumulative method commonly used by NMED and the source specific method plus background customarily used by AQD. Test. of D. Rocha, TR at 279; Test. of C. Albrecht, TR at pp. 629-36; City Exhibit 1.

206. NMED cumulative modeling involves summing and inputting into the model all of the identified permitted emission sources in the vicinity of the new source. Test. of G. Dingman, TR at pp. 464-465; City Exhibit 1.

207. As part of the study, Mr. Dingman performed a cumulative modeling analysis by inputting emissions from 135 permitted stationary air sources within the Mountain View community or within 1 kilometer of the neighborhood into the ISC model. In selecting parameters for the model, a number of conservative assumptions were made including the use of TSP emissions, as opposed to PM10

or PM2.5 emissions, assuming that all particulates, regardless of size, remain in the air, and moving emission sources as close to the receptor field as possible. Test. of G. Dingman, TR at pp 466-69; City Exhibit 1, p. 59-61.

208. The highest predicted 24-hour average TSP concentration for emissions from the facility generated by the cumulative modeling was 76.42 µg/m3. Test. of G. Dingman, TR at pp. 473-74; City Ex. 1, p. 58.

209. For purposes of comparison, Mr. Dingman also ran the ISC model using the City's technique. That technique uses only the emissions from the specific facility subject to an application (in this case the Vulcan facility) and adds a background concentration to the highest TSP concentration generated by the model. All other data parameters were the same as those used in the cumulative model. Test. of G. Dingman, TR at pp. 469-70; City Ex. 1, p. 58.

210. The predicted 24-hour average TSP concentration (including background) generated by the City's modeling technique was 112 µg/m3 - 35.58 µg/m3 higher than the highest concentration using the cumulative modeling technique. Test. of G. Dingman, TR at pp. 473-75.

211. The results of Mr. Dingman's comparative modeling study indicate that the AQD's modeling technique (which was used for the Vulcan application) produces more conservative concentration estimates, results in less "headroom" for new air quality permits, and is more protective of public health than the cumulative modeling technique employed by NMED. Test. of G. Dingman, TR at pp. 474-79; City Ex. 1, p. 61-2.

J. Haul Roads

212. AQD's revised modeling guidelines, which adopt the approach AQD consistently employed prior to the September, 2006 reopening of the record in this case, provide that modeling of paved hauled roads is not required if the applicant is willing to implement reasonably available control measures. City Exh. 23 at 8-9.

213. The Division does not allow haul road emissions to be excluded from air dispersion modeling submitted in support of a permit application unless the haul roads will be paved and reasonably available control measures will be employed on the paved haul roads. RP 99, TR 1/16/07 hr., (Rocha) p. 1301, lines 19-22.

214. Similar to AQD's treatment of paved haul roads, Texas, Nebraska and Oklahoma also have no-modeling-of-paved-haul-road policies. Testimony of Dario Rocha ("Rocha Test."), TR at 1289-1294; Lester Test., TR at 1222; Gebhart Test., TR at 1169; City Exh. 31-33.

215. The policy of not modeling paved haul roads is based upon the control effectiveness of paving the road and the implementation of control measures to keep the paved road clean. Lester Test., TR at 1222. The Western Regional Air Partnership, a group of state and local air districts throughout the west including NMED, sponsored the development of a "Fugitive Dust Handbook." That handbook is a comprehensive reference concerning fugitive dust emissions and control methodologies. That handbook establishes that paving haul roads provides a greater than 90% control efficiency of dust emissions. The handbook further establishes that removing deposits from paved roads provides an

additional control efficiency of greater than 90%. The combination of paving and removal of deposits results in a combined control efficiency of 99%. Dingman Test., TR at 1063-1064; Lester Test., TR at 1224-1125; Stonesifer Test., TR at 1415-1417; Rocha Test., TR at 1310-1312; City Exh. 51.

216. The South Coast Air Quality Management District in Southern Los Angeles assigns a 99% control efficiency to the paving of haul roads. Lester Test., TR at 1220-1221.

217. Permit Condition I.1.f.vii requires Vulcan to pave all haul roads. Paving is considered the best and most expensive available control measure to mitigate fugitive dust emissions from haul roads. AR 99 at EHD 583; Rocha Test., TR at 1279.

218. Permit Condition I.1.f.vii requires Vulcan, in addition to paving all haul roads, to use reasonably available control measures set forth at 20.11.20.23.B NMAC to mitigate fugitive dust emissions from all paved haul roads. These measures include cleaning up of spillage and track out to prevent pulverized particulates from being entrained, installation of paved or gravel entry/exit aprons with track-out control devices, and on-site wheel washes, or regularly scheduled vacuum street cleaning or wet sweeping with a certified PM10-efficient sweeper. Lester Test., TR at 1225-1226; AR 99 at EHD 583.

219. Permit Condition I.1.f.viii requires Vulcan to comply with fugitive dust regulations contained in 20.11.20.12.A NMAC. These regulations prohibit fugitive dust emissions from being carried beyond the facility property line if the fugitive dust will: (a) adversely affect the health, public welfare or safety of the

residents of Bernalillo County; or (b) impair visibility or the reasonable use of property; or (c) be visible longer than a total of 15 minutes in any one hour observation period using the visible fugitive dust detection method in 20.11.20.26 NMAC or an equivalent method approved in writing by the AQD. These regulations are enforceable and provide AQD a basis to regulate fugitive dust emissions from the proposed Vulcan facility. Rocha Test., TR at 1280-1282; AR 99 at EHD 583.

220. Considering the concerns expressed by the Petitioners regarding the resources available for enforcement of the fugitive dust control requirements in the Permit, and considering the importance of controlling fugitive dust at the north boundary where the trucks egress onto Prosperity Street, it is reasonable to impose an additional condition that Vulcan use on-site wheel washes regardless of any other action necessary to comply with the Permit and 20.11.20.23 NMAC.

221. The regulatory tools employed in the Permit to control fugitive dust from haul roads, and the additional on-site wheel washes, are effective and enforceable permit conditions, will minimize actual emissions such that the amount of dust being emitted from the paved roads will be negligible or close to zero, and obviated the need to model the haul road emissions. Rocha Test., TR at 1279; Lester Test., TR at 1227-1228; Stonesifer Test., TR at 1415-1417.

222. "Fugitive dust carried beyond the property line" of Vulcan "impairs visibility" and therefore is a violation of 20.11.20.12.A NMAC and Permit #1758. 20.11.20.12.A.2) NMAC; AR 99, p. EHD, § I.1.f) viii; RP 99, TR 1/16/07 hr., (Rocha) p. 1328, lines 22.

223. Fugitive dust from haul roads typically is composed of more coarse particulates, which are TSP, and which are not subject to federal primary (health based) or secondary (welfare based) standards. RP 99, TR 1/16/07 hr., (Rocha) p. 1340, lines 11-17. Coarse particulates would be visible when carried beyond the Vulcan property line and could be observed by Division staff.

224. Permit #1758 provides: "any credible evidence may be used to establish whether the Facility has violated or is in violation of any regulation of the Board, or any other provision of law." AR 99, p. EHD 591, Sec. 8.f).

225. If Vulcan does not comply with the requirements of Permit #1758, which include the provisions of 20.11.20 NMAC that are incorporated in Permit #1758, Vulcan would be in violation of both Permit #1758 and 20.11.20 NMAC. RP 99, TR 1/16/07 hr., (Rocha) p. 1286, lines 12-18.

226. The Western Regional Air Partnership ("WRAP") Fugitive Dust Handbook provides a 90% credit (reduction in particulate emissions) for paving haul roads and an additional 90% credit for cleaning and sweeping the paved haul roads (RP 99.1, City Ex. 51, p. 3.), which results in a 99% credit for paving and keeping paved haul roads clean.

227. The South Coast Air Quality Management District in southern California, which includes desert areas like Palm Springs and the Coachella Valley (RP 99, TR 1/10/07 hr.; (Lester) p. 1192, lines 14-22), determined the "very best control for an unpaved road is to pave it", and allocates a 99 percent control for paving an unpaved road, without additional cleaning ((Lester) p. 1220, lines 20-25; p. 1221, lines 1-2).

228. In air dispersion modeling exercises, fugitive dust emissions from paved and cleaned haul roads do not have a significant impact on the final receptor concentrations in modeling, which is one reason the Division allows modeling of haul road fugitive dust emissions at zero. RP 99, TR 1/1/07 hr., (Dingman) p. 1114, lines 8-21.

229. Dr. Julia Lester testified that many of the fugitive dust control conditions that are imposed in Vulcan Permit #1758 are considered best available control measures in the South Coast Air Quality Management District (RP 99, TR 1/1/07 hr., (Lester) p. 1223, lines 12-20), and, in particular, use of PM10-efficient street sweepers ((Lester) p. 1223, lines 21-25; 20.11.20.23.B.4 NMAC).

230. Dr. Julia Lester testified the 90% plus 90% credits the Division assigned for the paved haul road fugitive dust control measures imposed by Permit #1758 are very consistent with the most recent compilations on control effectiveness. RP 99, TR 1/10/07 hr., (Lester) p. 1224, lines 12-25; p. 1225, lines 1-5.

231. Dr. Julia Lester testified the fugitive dust control requirements for haul roads that are imposed by Permit #1758 will "minimize" fugitive dust emissions from the haul roads to the point of insignificance". RP 99, TR 1/10/07 hr., (Lester) p. 1228, lines 2-3.

232. The ISC model significantly overstates haul road emissions because the model treats haul roads as steady state (continuous) emissions when in reality they are not. Rocha Test., TR at 1297-1300.

233. Mr. Gebhart's modeling of haul roads generates an inflated design concentration because the emission factor he used in the model is based upon

potential emissions rates listed in the Permit for emissions inventory purposes only, and not on actual emissions. Dingman Test., TR at 1083-1084; Gebhart Exh. 8 at 11-12; Rocha Test., TR at 1277-1278.

234. Mr. Gebhart's modeling of haul roads is also incorrect in that he extends the haul roads to the boundaries of the Vulcan property. NMED modeling guidelines recommend that a 50-meter setback be used between the last volume source and the property boundary. Dingman Test., TR at 1087-1088; Lester Test., TR at 1226-1227.

K. Use of 40 CFR Part 51, Appendix W, "Guideline on Air Quality Models," by City staff in Reviewing Vulcan's Air Dispersion Modeling

235. In September 2006, the only version of Appendix W that was a part of the record in AQCB 2006-1 was Petitioners' Ex. Gebhart #4, Fed. Register, Vol. 70, No. 216, 11/9/05, effective 12/9/05. RP 62.1, Gebhart #4, p. 68218, 1st col., p. 68229, DATES.

236. When the Division was reviewing Vulcan's permit applications and modeling in 2004 and 2005, the applicable version of Appendix W was the version of Appendix W that preceded the Gebhart Ex. 4 version of Appendix W. The version of Appendix W that was in effect during the Division's 2004, 2005 review was published in the Federal Register in Vol. 68, No. 72, 4/15/03, effective 5/15/03. RP 99.1, City Ex. 18, 1st col., p.18440, DATES.

237. At the reopened hearing in January 2007, City expert witnesses testified that in 2006 when the Division was performing its review pursuant to the Air Board's request, the Division used in its work both the version of Appendix W that was effective 12/9/05 (RP 62.1, Gebhart Ex. 4) ("current Appendix W") and

the version of Appendix W that became effective 5/15/03 (RP 99.1, City Ex. 18) ("prior Appendix W"). TR 1/10/07 hr., (Dingman) p. 1023, lines 14-17; RP 99, TR 1/16/07 hr, (Rocha) p. 1324, lines 19-21.

238. At the reopened hearing in January 2007, Division staff testified when the Division reviewed the Vulcan permit applications in 2005, the Division's review was consistent with prior Appendix W. RP 99, TR 1/10/07 hr., (Dingman) p. 1022, lines 7-11.

239. Current Appendix W and prior Appendix W acknowledge the importance of consulting with highly competent specialists and the appropriate reviewing authority when making determinations regarding modeling:

1. As modeling efforts become more complex, it is increasingly important that they be directed by highly competent individuals with a broad range of experience and knowledge in air quality meteorology. Further, they should be coordinated closely with specialists in emissions characteristics, air monitoring and data processing. The judgment of experienced meteorologists and analysts is essential. RP 62.1, Gebhart Ex.4 (current App. W), p. 68230, Sec. 1.0.c.
2. Models are highly specialized tools. Competent and experienced personnel are an essential prerequisite to the successful application of simulation models. … A model applied improperly, or with inappropriate data, can lead to serious misjudgments regarding the source impact or the effectiveness of a control strategy. RP 62.1, Gebhart Ex. 4 (current App. W), p. 68230, Sec. 2.1.c.

3. …(I)dentification of nearby sources calls for the exercise of professional judgment by the appropriate reviewing authority. This guidance (Appendix W) is not intended to alter the exercise of that judgment or to comprehensively define which sources are nearby sources. RP 62.1, Gebhart Ex. 4 (current App. W), p. 68243, Sec. 8.2.3.b, p. 68231, Sec. 3.b. (Words above in parenthesis added for clarification.)

4. In this guidance (Appendix W), when approval is required for a particular modeling technique or analytical procedure, we often refer to the "appropriate reviewing authority". In some EPA regions, authority for NSR (new source review) and PSD (prevention of significant deterioration) permitting and related activities has been delegated to State and even local agencies. RP 62.1, Gebhart Ex. 4 (current App. W), p. 68231, Sec. 3.b. (Words above in parenthesis added for clarification)

240. The appropriate reviewing authority should be consulted to determine appropriate source determination of emissions from and techniques for modeling the various source types. RP 62.1, Gebhart Ex. 4 (current App. W), p. 68240, Sec. 8.1.1.b.

241. The appropriate reviewing authority within Bernalillo County is the City of Albuquerque Air Quality Division. RP 99 TR 1/10/07 hr., (Albrecht) p. 978, lines 2-4; See also TR 1/16/07 hr., (Stonesifer) p. 1383, lines 2-6. The Division has been the designated reviewing authority since 1972 (RP 99, TR 1/10/07 hr. (Albrecht) p. 984, lines 1516.

242. Division staff were acknowledged as experts and testified at the January 2007 hearing. Each has education, training and extensive experience directly related to the functions they perform as staff to the reviewing authority. Chris Albrecht is Environmental Health Manager of the Divisions' Stationary Source Programs, was acknowledged as an expert in air dispersion modeling and air permit writing, and has 17 years of related experience. RP 62, TR 5/25/06 hr., (Orth) p. 594, lines 20-25; RP 62.1, City Ex. 12. Division Environmental Health Specialist George Dingman was acknowledged as an expert in air dispersion modeling and permit writing and has 23 years of related experience. RP 62, TR 5/24/06 hr., (Orth) p. 463, lines 11-13; RP 62.1, City Ex. 9. The Supervisor of the Divisions' Permitting and Technical Analysis Section is Dario Rocha, who was acknowledged as an expert in air quality permit writing and has 14 years of related experience. RP 62, TR 5/23/06 hr., (Orth) p. 255, lines 18-23; RP 62.1, City Ex. 8. Daniel Gates is the Data Manager and Senior Engineer of the Quality Assurance Section of the Division, was acknowledged as an expert in air quality monitoring data and quality assurance, and has 10 years of related experience. RP 99, TR 1/16/07, (Orth) p. 1344, lines 20-24; RP 99.1, City Ex. 35. Jeffrey Stonesifer is an Environmental Health Scientist in the Division's Permitting and Technical Analysis Section, was acknowledged as an expert in meteorology and air dispersion modeling analysis and has 12 years of related experience. RP 62, TR 5/24/06 hr., (Kearny) p. 496, lines 20-23, (Orth) p. 498, lines 7-9 ; RP 62.1, City Ex. 10.

243. Dr. Julia Lester testified at the January 2007 reopened hearing that the exercise of professional judgment involves relying on federal and state guidance, years of experience in implementing federal and state guidance, and consistent application of the guidance when making professional judgments. RP 99, TR 1/10/07 hr., (Lester) p. 1233, lines 1-7.

244. Mr. Gebhart developed and proposed a new method of calculating background concentrations and determining proximity to the ambient air quality standards, but did not cite precedent, guidance, or any regulatory citation in support of his new methodology, which is not consistent with the procedures in current Appendix W. Gebhart Ex. 7, RP 99, TR 1/10/07, (Lester) p. 1204, lines 7-15.

245. Both prior Appendix W and current Appendix W, Guideline on Air Quality Models, can be used to project potential compliance with PM10 criteria pollutant standards (RP 99, TR 1/10/07 hr., (Dingman) p. 1022, lines 25; p. 1023, lines 1-5) and compliance with PM2.5 criteria pollutant standards ((Dingman) p. 1023, line 4-7).

246. Current Appendix W is a guideline (RP 99, TR 1/16/07 hr., (Stonesifer) p. 1382, lines 23-25, lines 5-12) regarding how air dispersion modeling can be used to predict potential exceedances of criteria air pollutant standards. RP 99, TR 1/16/07, (Stonesifer) p. 1383, lines 23-25; p. 1384, lines 1-2.

247. Mr. Stonesifer, who is an Environmental Health Scientist with the Permitting and Technical Analysis Section of the Division (RP 99, TR 1/16/07 hr., (Stonesifer) p. 1370, lines 1-5), was recognized as a technical expert in

meteorology and air dispersion modeling analysis at the May 2006 hearing (RP 62, TR 5/24/06 hr., (Kearny) p. 496, lines 20-23, (Orth) p. 498, lines 7-9), and confirmed at the January 16, 2007 reopened hearing that there are several steps or building blocks that are required to make a technically supportable decision regarding whether air dispersion modeling correctly predicts a potential exceedance of national ambient air quality standards ("NAAQS") (RP 99, TR 1/16/07 hr., (Stonesifer) p. 1384, lines 3-8).

248. Mr. Stonesifer testified that a technically supportable decision regarding whether air dispersion modeling correctly predicts a potential exceedance of a NAAQS requires: 1.) the appropriate air dispersion model (RP 99, TR 1/16/07 hr., (Stonesifer) p. 1384, lines 11-13); 2.) valid meteorological data (p. 1384, lines 17-19); and valid emissions data (p. 1384, line 19) as inputs to the model before the model is run (p. 1384, lines 20-22).

249. The background concentration for the applicable air pollutant is added (RP 99, TR 1/16/07 hr., (Stonesifer) p. 1384, lines 23-25) to the "modeling results", which also is known as the "model output", and the total of the model output and the background concentration is compared to the applicable national ambient air quality standard ("NAAQS") and New Mexico ambient air quality standard for the pollutant being reviewed ((Stonesifer) p. 1385, lines 1-5).

250. When the air dispersion model output is added to the background concentration and compared to the applicable ambient air quality standard, the comparison is a pass or fail test. RP 99, TR 1/16/07 hr., (Stonesifer) p. 1385, lines 6-7; p. 1438, line 9-11. As an example, if the maximum model output

concentration for a pollutant, plus the background concentration for that pollutant is 149, and the air quality standard for the pollutant is 150, the modeling for that pollutant passes. RP 99, TR 1/16/07 hr., (Stonesifer) p. 1438, lines 22-25; (Stonesifer) p. 1437, line 1.

251. Mr. Gebhart agreed that modeling culminates in a pass/fail test when he testified: "Modeling is really a pass/fail kind of system. You either pass or you don't pass. So if it's 149, you pass; it it's 151, you fail." RP 62, TR 5/23/06 hr., (Gebhart) p. 56, lines 7-10; p. 57, line 3, p. 58, line 5. Mr. Gebhart agreed a permit application decision is not based on how close the results of the model results are to the ambient air quality standard if the results are below the standard.

252. After the May 2006 hearing, in response to the Hearing Officer's October 26, 2006 Prehearing Order for the Reopening regarding the four matters that were to be heard during the reopened hearing, the Division researched particulate background concentrations, evaluated results, developed meteorological data sets to be used in ISC (industrial source complex) modeling, reran air dispersion modeling, prepared to implement use of AERMOD, which became the EPA-preferred model November 9, 2006, and prepared meteorological data sets that are compatible with AERMOD. RP 99, TR 1/1007 hr., (Albrecht) p. 985, lines 15 – 24; p. 990, lines 11-13.

253. In response to the Hearing Officer's October 26, 2006 Prehearing Order for the Reopening, and because AERMOD was to become the EPA-preferred model November 9, 2006 (RP62.1, Gebhart 4 (current App. W), p. 68218, 1st col., DATES), the Division decided to compare the AERMOD Vulcan modeling

results to the ISC Vulcan modeling results before the City's Supplemental Notice of Intent was due in November 2006. RP 99, TR 1/10/07 hr., (Albrecht) p. 986, lines 1-5.

254. After the May 2006 hearing, Division staff performed additional air dispersion modeling related to the Vulcan case (RP 99, TR 1/10/07 hr., (Dingman) p. 1023, lines 10-13) and consulted with prior and current Appendix W during the process (TR 1/10/07 hr., (Dingman) p. 1023, lines 14-17.

255. The December 2006 modeling executed by City Environmental Health Specialist and expert witness George Dingman did not predict exceedances of national, state or local annual or 24-hour ambient air quality standards for TSP, PM10, or PM2.5. RP 99, TR 1/10/07 hr., (Dingman) p. 1077, lines 20-25; (Dingman) p. 1078, lines 1-25; (Dingman) p. 1079, lines 1-12.

256. Division expert witness Dario Rocha, who is the Supervisor of the Permitting and Technical Analysis Section of the Division, testified that the modeling in 2006 that was performed by the Division was performed consistent with the requirements of prior Appendix W and current Appendix W. RP 99, TR 1/16/07 hr, (Rocha) p. 1324, lines 19-21.

V. City Review of Vulcan Permit Applications and Modeling Runs; Background

257. By a Document dated November 11, 2004, which was received November 12, 2004, Vulcan delivered to the Air Quality Division of the City Environmental Health Department an "Application for Air Permit – New Ready Mix Batch Plant" ("First Application"). Administrative Record (AR) Document 2 (Doc.), pg. EHD 0003.

258. The First Application included air dispersion modeling files ("First Modeling Run"). AR Doc. 2, pg. EHD 0005; AR Doc. 11, pg. EHD 0094.

259. After an initial review of the First Application, on December 10, 2004, the Department ruled the First Application incomplete for the reasons stated in the December 10, 2004 letter. AR Doc. 4, pg. EHD 0037.

260. By a December 16, 2004 letter, Vulcan submitted revised air dispersion modeling files to the Department ("Revised First Modeling Run") to address deficiencies described in the Department's December 10, 2004 incompleteness letter. AR Doc. 5, pg. EHD 0038; AR Doc. 7, pg. EHD 0044.

261. By a December 16, 2004 letter, Vulcan submitted a Malfunction Abatement Plan for the proposed facility to the Department to address deficiencies described in the Department's December 10, 2004 letter that deemed the First Application incomplete. AR Doc. 6, pg. EHD 0041.

262. By January 6, 2005 email, the Department confirmed the First Application continued to be incomplete for the reasons stated in AR Doc. 9, pg. EHD 0046.

263. By a document dated January 24, 2005, received January 25, 2005, Vulcan submitted to the Department a "Revised Application for Air Permit – New Ready Mix Batch Plant" ("Second Application"). AR Doc. 10, pg. EHD 0047.

264. The Second Application included air dispersion modeling files on CD ("Revised First Modeling Run"). AR Doc. 10, pg. EHD 0049; AR Doc. 11, pg. EHD 0095

265. On February 25, 2005, the Department deemed the Second Application administratively complete. AR Doc. 17, pg. EHD 0101.

266. In April 2005, Department Environmental Health Specialist II George Dingman (Dingman) and Department Environmental Health Scientist and meteorologist Jeffrey Stonesifer (Stonesifer) were directed by Director Environmental Health Supervisor Dario Rocha (Rocha) to execute and evaluate Vulcan's Revised First Modeling Run to determine compliance with the National Ambient Air Quality Standards (NAAQS), the New Mexico Ambient Air Quality Standards (NMAAQS) for total suspended particulates (TSP), particulate matter with an aerodynamic diameter of 10 micrometers or less (PM10), and particulate matter with an aerodynamic diameter of 2.5 micrometers or less (PM2.5). AR Doc. 30, pg. EHD 0123; AR Doc. 81, pg EHD 0416.

267. Stonesifer reviewed the Revised First Modeling Run, the EPA-issued "Emission Factor Documentation for AP-42 Section 11.12, Concrete Batching (AR Doc. 47, pg. EHD 0156), the PC-RAMMET User's Guide, from the EPA web site; and BEEST software HELP files in his review, made notes on his review. AR Doc. 31, pg. EHD 0124 -0129; AR Doc. 31, pg. EHD 0132.

268. Stonesifer concluded the Revised First Modeling Run was incomplete, unacceptable and should be rejected by the Department for the reasons stated in AR Doc. 32, pg. EHD 0135.

269. By a May 4, 2005 letter, the Department rejected Vulcan's Revised First Modeling Run for the reasons stated in the letter. AR Doc. 37, pg. EHD 0140.

270. By a May 24, 2005 letter, and as a result of the Environment Health Department Director's approval of a public information meeting/hearing, the Department notified Vulcan that the Department had requested a 90-day extension

to the initial May 26, 2005 90-day deadline in order to process the permit application and make a decision to issue or deny the permit. AR Doc. 38, pg. EHD 0142.

271. By a June 7, 2005 letter, Vulcan's consultant responded to the Department's comments regarding the prior air dispersion modeling run and attached a CD containing Vulcan's "Second Modeling Run". AR Doc. 46, pg. EHD 0151; EHD 0155

272. By June 8, 2005 email, Rocha directed Stonesifer to re-execute Vulcan's Second Modeling Run, which was attached to the email. AR Doc. 48, pg. EHD 0273.

273. Stonesifer reviewed Vulcan's Second Modeling Run, used the EPA-issued "Emission Factor Documentation for AP-42 Section 11.12, Concrete Batching (AR Doc. 47, pg. EHD 0156), the PC-RAMMET User's Guide, from the EPA web site; and BEEST software HELP files in his review, made notes on his review and modeling runs (AR Doc. 49, pg. EHD 0274); and concluded the Second Modeling Run was incomplete and did not include information sufficient for the Department to determine whether the proposed Vulcan concrete batch plant facility complied with applicable air quality regulatory requirements and, therefore, the modeling run did not meet applicable regulatory requirements for the reasons stated in AR Doc. 51, pg. EHD 0295.

274. By June 22, 2005 email, the Department notified the Vulcan consultant about the Department's additional concerns regarding Vulcan's Second Modeling Run. AR Doc. 62, pg. 0342.

275. After the Second Modeling Run was rejected, Stonesifer created a meteorological file and performed an additional test to test the appropriateness of Vulcan's modeling methodology, which resulted in Stonesifer concluding that Vulcan's modeling methodology resulted in artificially low modeled ambient air impacts and Vulcan must model maximum hourly, not just annual or daily emission rates and the Department's rejection of the methodology was justified. AR Doc. 68, pg. EHD 0382, AR Doc. 103, pg. EHD 0598 (CDs); (RP #62, 5/24/06 hr., Vol. 2, pg. 511, Ln. 14-25, pg. 512, Ln. 1-25, pg. 513, Ln. 1-25.

276. By a May 2, 2005 memo, the Department requested an additional 90 days within which to make a final decision regarding the Vulcan permit application and modeling run because Mountain View NA, other organizations and community individuals requested a public information meeting regarding Vulcan's pending permit application and the Department director had granted the public information meeting. AR Doc. 36, pg. EHD 0139.

277. By August 5, 2005 email, Vulcan's consultant submitted to the Department a revised format for an air quality modeling run with attached model input file. AR Doc. 66, pg. EHD 0379.

278. By August 8, 2005 email, Vulcan's consultant submitted to the Department a zipped file which contained Vulcan's proposed final emissions inventory showing revised hourly and daily production rates, revised mobile equipment fugitive emissions calculations, ISCST model summary, input and output files for the modeling runs, and information on building heights and

locations for the air and emissions downwash program, which constituted Vulcan's "Third Modeling Run". AR Doc. 67, pg. EHD 0381.

279. By August 10, 2005 email, Rocha forwarded Vulcan's Third Modeling Run for re-evaluation by Stonesifer and Dingman, following which Stonesifer reviewed the third modeling run, compiled notes, reviewed Vulcan's responses to the Department's rejection of the Second Modeling Run, reviewed computer printouts, and concluded that Vulcan's Third Modeling Run did not demonstrate compliance with applicable air quality requirements for the reasons stated in the August 16, 2005 email to Vulcan's consultant from Mr. Rocha. AR Doc. 81, pg. EHD 0419; AR Doc. 68, pgs. EHD 0383–0385; AR Doc. 68, pgs. EHD 0386-0387; AR Doc. 81, pg. EHD 0424.

280. By an August 15, 2006 letter to the Director of the Department, Ms. Grice for Mountain View NA asked for a 30-day deferral regarding issuance of the Permit to provide enough time to have the new modeling data reviewed. AR Doc. 71, pg. EHD 0392.

281. By August 16, 2005 email, the Department rejected Vulcan Third Modeling Run for the reasons described in the email. AR Doc. 81, pg. EHD 0424.

282. By two August 18, 2005 emails, Vulcan's consultant submitted to the Department a zipped file containing Vulcan's "Final Modeling Run", the summary of results and the ready mix site figure. AR Doc. 72, pg. EHD 0394; AR Doc. 73, pg. EHD 0395.

283. By August 18, 2005 and August 19, 2005 emails, Rocha transmitted Vulcan's Final Modeling Run to Dingman and Stonesifer for re-execution and evaluation. AR Doc. 81, pg. EHD 0420; AR Doc. 81, pg. EHD 0421.

284. Stonesifer reviewed Vulcan's Fourth Modeling Run, made notes regarding the review, reviewed Vulcan's response to the Department's comments regarding the reasons for rejecting the Third Modeling Run, reviewed information regarding building downwash and other information, verified modeled ambient impacts, preformed tests during review, compiled the modeling submittals on a CD; and concluded Vulcan's Final Modeling Run, with clarifications provided by Vulcan, demonstrated compliance with applicable air quality requirements for the reasons stated in August 16 and August 22, 2005 memos to Mr. Rocha. AR Doc. 74, pg. EHD 0396; AR Doc. 74, pgs. EHD 0398–0400; AR Doc. 74, pgs. EHD 0401-0403; AR Doc. 81, pg. 0419; AR Doc. 90, pg. EHD 0491; AR Doc. 76, pg. EHD 0405; AR Doc. 78, pg EHD 0409.

285. Stonesifer reviewed Vulcan's Final Modeling Run and confirmed: the modeling run included information and modeling methods that corrected and clarified earlier permit applications and modeling run submittals; the assumptions used in Vulcan's modeling analysis; Vulcan's modeling parameters; Vulcan's proposed particulate emission rates; characteristics of modeled volume sources; characteristics of modeled point sources; the receptor grid results from modeling; particle size distribution; and specific ambient impact from emissions at maximum hourly emissions rates. As a result, Stonesifer concluded that Vulcan's facility, if constructed and operated as submitted in Vulcan's Final Modeling Run,

will not cause exceedance of the NAAQS or the NMAAQS. AR Doc. 78, pg. EHD 0409.

286. When the Department executed the Final Modeling Run, the Run calculated the maximum modeled concentration figures for TSP, PM10 and PM 2.5. AR Doc. 78, pg. EHD 411, Table IV.

287. After the Department obtained maximum modeled concentration figures for TSP, PM10 and PM 2.5, the Department added background concentrations for TSP, PM10 and PM2.5 and compared the total to the 24-hour and annual ambient air quality standards. AR Doc. 78, pg. EHD 411, Table IV.

288. The Final Modeling Run input emission factors from "Emission Factor Documentation for AP-42, Section 11.12-Concrete Batching" (AP-47) (AR Doc. 47, pg. EHD 156; pg. EHD 158), which is published by the United States Environmental Protection Agency (EPA). AP-42 emission factors tend to be conservative. RP #62, 5/25/06 hr., Vol. 3, pg. 818, Ln. 113-14.

289. By August 19, 2005 email to Vulcan from Rocha, the Department confirmed it had evaluated Vulcan's Final Modeling Run and found it technically acceptable and sufficient for Department staff to evaluate because the Department had determined Vulcan's Final Modeling Run had addressed and corrected technical concerns Department modeling staff had regarding Vulcan's Third Modeling Run. AR Doc. 75, pg. EHD 0404.

290. By August 24, 2005 email to the Department, Vulcan's consultant submitted to the Department additional information regarding paved roads and weigh hopper calculations. AR Doc. 80, pg. EHD 0413.

291. By August 24, 2005 inter-Department email, Rocha requested additional time for Department staff to conduct a thorough technical review of Vulcan's permit applications and additional information submitted by Vulcan so staff could evaluate permit conditions and ensure effectiveness of Vulcan's proposed methods of controlling emissions, evaluate Vulcan's additional information and proposals, and review Vulcan expected third application to reflect Vulcan's revised requested allowable emission rates after remaining issues were resolved. AR Doc. 81, pg. EHD 0424.1.

292. By an August 24, 2005 letter, the Department notified Vulcan the Department would be unable to take final action on Vulcan's Permit application by the August 24, 2006 deadline and that an extension of time was necessary to process the information most recently submitted by Vulcan and conduct a thorough technical review, and evaluate permit conditions and evaluate additional information provided by Vulcan, after which Vulcan would be required to submit a third permit application that reflected Vulcan's requested allowable emission rates based on the requested cubic-yard-per-hour throughputs. AR Doc. 82, pg. EHD 0425.

293. By an August 25, 2005 letter, the Department Director responded to the August 15, 2006 letter from Ms. Grice/Mountain View NA, informing Ms. Grice that the Department was unable to take final action on the Vulcan permit application, and that Vulcan has been notified an extension of time is necessary to process the most recent information submitted by Vulcan. AR Doc. 83, pg. EHD 0427.

294. By October 11, 2005 email to Vulcan's consultant, the Department demanded explanations to the Department's remaining technical concerns regarding the Fourth Modeling Run, which were listed in the email, and also requested a signed replacement application that reflected Vulcan's current uncontrolled and controlled emission rates and a revised air dispersion model run that incorporated any revised calculations AR Doc. 85, pg. EHD 0429.

295. By October 19, 2005 email to the Department, Vulcan's consultant provided responses to the Department request for explanations regarding the remaining technical concerns and stated Vulcan would be submitting an updated permit application. AR Doc. 87, pg. EHD 0431.

296. By November 3, 2005 email and November 3, 2005 hard copy, Vulcan submitted its revised third permit application (Final Application) with updated Final Modeling Run, which included a CD of the Final Application and revised Final Modeling Run. AR Doc. 88, pg. EHD 0433; AR Doc. 89, pg. EHD 0434; AR Doc. 89, pg. 0490.

297. By November 7, 2005 and November 15, 2005 emails to the Department, Vulcan's consultant submitted a revised emission table to correct errors identified by the Department during re-evaluation of Vulcan's Final Modeling Run, and submitted a wind erosion spread sheet with an approximate 20% safety factor. AR Doc. 91 pg. EHD 0492; AR Doc. 92, pg. EHD 0493.

298. In a December 12, 2005 memo addressed to both the Department's Vulcan permit file and the Department's Vulcan enforcement file, regarding the air quality Authority-to-Construct Permit issued to Vulcan, Department

Environmental Health Supervisor Rocha summarized Vulcan's first permit application for a plant designed to produce up to 300 cubic yards per hour of ready mix concrete, and the Permit that was issued, which limited production to 18 cubic yards per hour of transit mix loading and 12 cubic yards per hour of central mix loading, for a maximum total production rate of 30 cubic yards per hour. AR Doc. 97, pg. EHD 0545.

299. The December 12, 2005 memo also provided a chronology of the actions taken by the Department, including: the Department's decision to rule Vulcan's First Application for a permit incomplete in December 2004 and the Department's January 2005 decision to rule Vulcan's Second Application for a permit incomplete; the Department's May 4, 2005 decision to reject Vulcan's First Revised Modeling Run, June 22, 2005 decision to reject Vulcan's Second Modeling Run, and August 16, 2005 decision to reject Vulcan's Third Modeling Run; requests to inspect public records; multiple requests for a public hearing and the resulting public information hearing that was held June 23, 2005; request for and approval of an additional 90 days for the Department to review the permit application and air dispersion modeling run; Vulcan's submittal of a Final Modeling Run in August 2005, and the Department's acceptance of the Final Modeling Run; the Department's request for and approval of an additional 90 days, beyond the August 24, 2005 decision deadline in order to review Vulcan's Final Application, which included Vulcan's revised Final Model. AR Doc. 97, pg. EHD 0545-0576.

300. The December 12, 2005 memo also included a summary of the Permit operational requirements, including permitted hours of operation, the maximum concrete production rate per hour and based on a 12-month rolling total; malfunction requirements, water spray requirements and control efficiencies; paving of the haul road to mitigate emissions of particulate matter, including the requirement that the facility comply with the fugitive dust control regulation 20.11.20 NMAC and specified particulate matter limitations and requirements; opacity limitations on specified units; recordkeeping requirements; monitoring requirements, reporting requirements; fee requirements; public notice publication; process equipment table; list of emission units and description; control efficiency calculations used to estimate controlled emissions from specified activities; and tables stating controlled and uncontrolled emissions. AR Doc. 97. pg. EHD 0545 at 0547.

301. On December 19, 2005, the Department issued air quality authority-to-construct Permit 1758 to Vulcan for a concrete batch plant to be located at 4519 Williams Street SE, in Albuquerque, New Mexico, and operated pursuant to the terms of Permit #1758. AR Doc. 99, pg. EHD 0580.

302. By a December 19, 2005 letter, the Department sent the Permit to Vulcan. AR Doc. 98, pg. EHD 0579.

VI. Additional Review and Consideration by the Department.

A. Additional Review Described in May 2006 Hearing

303. Following the June 23, 2005 public information hearing, and in response to citizen comments regarding whether the Department's air dispersion modeling

technique was as protective as the cumulative modeling technique used by the New Mexico Environment Department (NMED), Albrecht directed Dingman to conduct a special project that compared the cumulative modeling technique to the air dispersion modeling technique utilized by the Department. RP #62, 5/24/06 hr., Vol. 2, pg. 634, Ln. 20-25.

304. Dingman tested the NMED cumulative modeling technique by calculating the sum of total suspended particulate emission impacts from nearby stationary sources that had been issued air quality permits in and around the Mountain View area and added the resulting value to the modeled impacts from the proposed Vulcan Facility, then used the sum to determine maximum off-site receptor impacts from the proposed Vulcan facility. Dingman also applied the Department air dispersion modeling technique by adding the modeled particulate impacts from the proposed Vulcan facility to a conservatively high background particulate value, developed from actual ambient monitoring throughout Bernalillo County, then used the sum to determine maximum off-site receptor impacts from the proposed Vulcan facility. When Dingman compared the results of the two techniques, Dingman observed that the NMED cumulative modeling technique resulted in a lower number, which left more "headroom" or growth potential before the Vulcan facility would exceed particulate standards. Mr. Dingman concluded the Department modeling techniques leaves less headroom, so is more restrictive, conservative, and protective of the public. City Ex. 1, "Summary of Cumulative Modeling of Particulates in Mountain View Area

Compared to Air Dispersion Modeling Conducted According to AQD Technique"; AR Doc. 95, pg EHD 0540; AR Doc. 96, pg. EHD 0543.

305. In response to citizen comments at the June 23, 2005 public information hearing and prior forums, and before deciding whether to issue the Permit, Department staff compiled a "Summary of Air Quality Division South Valley Activities"; "Permitted Allowable Ton per Year Emissions by Zip Code"; Zip code Ranking by Permitted "% of Permitted Allowable Ton per Year Emissions by Zip Code"; "Zip Code Ranking by Permitted Allowable Ton per Year Emissions"; and data by zip code. The Department also prepared a power point presentation that summarized basic concepts related to review of air quality permits, year 2000 US census data, the special air dispersion modeling project that compared the Department air dispersion modeling technique with the cumulative air dispersion modeling technique, with assumptions used in the comparison. AR Doc. 93, pgs. EHD 0495 through 0538.

B. Additional Review Described at January 2007 Hearing.

1. Air Quality Standards

306. The federal primary TSP standards of 75 µg/m3 annual geometric mean and 260 µg/m3 24-hour were revoked in July 1987. Those standards were replaced by the PM10 standards of 50 µg/m3 annual arithmetic mean and 260 µg/m3 24-hour. The PM10 standards were revoked on October 17, 2006 on the grounds that "available evidence does not suggest an association between long-term exposure to coarse particles at current ambient levels and health effects."

Albrecht Test., TR at 1000-1006; City Exh. 58 at 29-30; Vulcan Exh. 9 at slide 14.

307. The federal TSP 24-hour standard, before revocation, allowed one exceedance of the standard each year. The current 24-hour state TSP standards in Washington and New Jersey allow for one exceedance of the standard each year. NMED and Bernalillo County's 24-hour standards are silent as to how many exceedances are allowed in a calendar year. The NMED and Bernalillo County's 24-hour standards are based upon the revoked federal standards. Lester Test., TR at 1232, 1240; Vulcan Exh. 9 at slides 13-14. If the NMED and Bernalillo County standards are interpreted like their federal counterparts they should allow for one exceedance per year.

308. If an exceedance of a standard is allowed for a calendar year, the appropriate modeling result to use for purposes of determining compliance with air quality standards is the high second high if one-year of meteorological data is used in the modeling or the high sixth high if five-years of meteorological data is used. Dingman Test., TR at 1044-1045, 1047, 1049, 1051; Lester Test., TR at 1231-1232; Gebhart Exh. 4 at 68238.

309. The annual TSP standard is based upon a geometric average as opposed to an arithmetic average and thus it is appropriate to take the annual geometric average of modeled data when determining compliance with the air quality standards. Lester Test., TR at 1229-1231.

2. AQD's Modeling for Reopened Hearing

310. At the time of submission of the Vulcan application in November, 2004, the preferred air dispersion model under Appendix W was the Industrial Source Complex 3 ("ISC") dispersion model. Albrecht Test., TR at 978, 980, 990; Dingman Test., TR at 1075-1076, 1129; Stonesifer Test., TR at 1383.

311. AQD issued the Permit to Vulcan in December of 2005 based upon the results of Vulcan's fourth ISC modeling submittal. That model indicated that emissions from the Vulcan facility would comply with all applicable local, state, and federal air quality standards. A full description of the modeling submittal process and the results of the fourth modeling submittal is set forth at the July 2006 FOF, ¶¶ 11-36 and 72-77.

312. In response to the Board's September, 2006 reopening of the record in this case, AQD performed additional modeling runs in November, 2006 using both ISC and AERMOD. AERMOD took the place of ISC as EPA's preferred model in November, 2006 and, like ISC, is used to predict pollutant concentrations emitted from a proposed facility. AQD used AERMOD in some of these runs for the purpose of verifying the results generated by the ISC model. Albrecht Test., TR at 990; Dingman Test., TR at 1094-1096, 1127; City Exh. 19-22, 24-27; Gebhart Exh. 4 at 68218-68219.

313. Each of the November, 2006 ISC and AERMOD modeling runs confirms the results of Vulcan fourth modeling submittal that the emissions for the Vulcan facility will result in no exceedances of TSP, PM10 or PM2.5 air quality

standards. Dingman Test., TR at 1033, 1034, 1038, 1040-1041, 1045, 1046, 1049; City Exh. 19-22, 24-28.

314. In response to Gebhart's criticism of AQD's November 2006 modeling in his report, dated November 30, 2006 (submitted with Appellant's NOI as Gebhart Exhibit 8), namely regarding AQD's use of a nighttime factor and an inappropriate emission particle size fraction in the modeling, AQD performed further modeling in December, 2006 using ISC exclusively (the preferred model at the time of Vulcan's November, 2004 application submittal), eliminating the nighttime factor, and correcting the particle size fraction. AQD had inadvertently used the nighttime factor and the wrong particle size fraction in the November, 2006 modeling using AERMOD. Dingman Test., TR at 1030-31, 1074-76; Lester Test., TR at 1237; City Exh. 53.

315. The December, 2006 ISC modeling runs used a one-year NWS meteorological data set—1991—and a five-year NWS meteorological data set—1986 to 1990. The modeling did not include paved haul roads. Dingman Test., TR at 1077; City Exh. 53.

316. The December, 2006 ISC modeling runs included a fugitive dust correction factor of 0.6. Dingman Test., TR at 1077. Developed by Texas and approved by EPA Region 6, the fugitive dust correction factor is appropriate for use in the ISC model to overcome the model's propensity to overstate pollutant concentrations under light wind conditions. Dingman Test., TR at 1026-1028, 1071-1073.

317. Each of the December, 2006 ISC modeling runs further confirms that the emissions from the Vulcan facility, when added to AQD's background concentrations, will not result in any exceedance of TSP, PM10 or PM2.5 air quality standards. Dingman Test., TR at 1077-1079, 1091; Lester Test., TR at 1237; City Exh. 53, Vulcan Exh. 9 at slide 16. The results of the December, 2006 ISC modeling, the appropriate background concentrations, and the design concentrations are listed in the table on slide 16 of Dr. Lester's PowerPoint presentation. Vulcan Exh. 9.

318. Even if added to a TSP background concentration established by use of NMED's 1.33 factor (the factor upon which Gebhart relied at hearing), the modeled emissions from the Vulcan facility will not result in any exceedance of the TSP air quality standards. Lester Test., TR at 1243-1244; Gebhart Test., TR at 1152.

319. The December, 2006 ISC modeling was conservative because, among other things, the high first high modeling result for TSP was used to determine compliance with the TSP standard when the high second high should have been used for the modeling run including the one-year meteorological data set and the high sixth high should have been used for the modeling run including the five-year meteorological data set, and because an arithmetic average of the TSP modeling data was used instead of the geometric average. Lester Test., TR at 1240.

VII. Permit Conditions.

320. Authority-to-Construct Permit #1758 cites the authorities pursuant to which the Permit is issued, a brief history of the Department's review of the application and subsequent information received, and states that the Permit is issued based on the National Ambient Air Quality Standards ("NAAQS"), the New Mexico Ambient Air Quality Standards ("NMAAQS"), and the Air Quality Regulations for Albuquerque and Bernalillo County. AR Doc. 99, pg. EHD 0580.

321. The Permit states the permit conditions have been imposed to assure continued compliance, and establishes the means by which the Department will determine compliance with the Permit. AR Doc. 99, pg. EHD 0581; Permit condition I.1.

322. The Permit states it authorizes construction and operation of the listed and described process equipment, and the listed, described, and required air pollution control equipment. AR Doc. 99, pgs. EHD 0581 and EHD 0582, Permit condition I.1.a).

323. The Permit states the Vulcan facility and the listed equipment are restricted to operate under the conditions described in the Permit, based on air dispersion modeling to demonstrate compliance with the NAAQS and the NMAAQS for PM10, PM 2.5 and total suspended particulates (TSP). AR Doc. 99, pg. EHD 0583; Permit condition I.1.f.). i).

324. The Permit states the concrete batch plant shall not exceed a maximum concrete production rate of 18 cubic yards per hour for transit mix loading and 12 cubic years per hour for central mix loading, and states the maximum concrete

production rate for concrete production based on a 12-month rolling total average. AR Doc. 99, pg. EHD 0583; Permit condition I.1.f). i and ii.

325. The Permit states requirements for malfunction shutdown and for installation, operation and maintenance of water sprays required to maintain the stated minimum control efficiency. AR Doc. 99, pg. EHD 0583; Permit condition I.1.f).v and vi.

326. The Permit requires haul roads within the property boundary to be paved to mitigate particulate matter emissions and states the permittee also shall use reasonably available control measures found in regulation 20.11.20 NMAC, Fugitive Dust Control ("Part 20") to mitigate fugitive dust emissions from all paved roads. AR Doc. 99, pg. EHD 0583; Permit condition I.1.f).vii.

327. The Permit states Vulcan shall not allow fugitive dust, track out, or transported material to be carried beyond the property line or any other area under the control of Vulcan if the fugitive dust will: 1.) adversely affect the health, public welfare or safety of the residents of Bernalillo County; or 2.) or impair visibility or the reasonable use of property; or 3.) be visible longer than a total of 15 minutes in anyone hour using the Part 20 dust detection method. AR Doc. 99, pg. EHD 0583; Permit condition I.1.f).viii.

328. The Permit also states all inactive disturbed surface areas must be stabilized and maintained in stable condition to mitigate fugitive dust. AR Doc. 99, pg. EHD 0584; Permit condition I.1.f).viii.

329. The Permit includes requirements for submitting modifications to the Permit, before beginning the modification, if the proposed change would increase

the potential to emit or cause a change in the method of control of emissions or the character of emissions. AR Doc. 99, pg. EHD 0584; Permit condition I.1.g).

330. The Permit states no National Emissions Standard for Hazardous Air Pollutants applies to the Vulcan facility. AR Doc. 99, pg. EHD 0584; Permit condition I.1.i.

331. For each emission unit listed and described, the Permit imposes control methods and efficiency and the permitted process rate. AR Doc. 99, pg. EHD 0585; Permit condition I.2.a).

332. The Permit includes a Facility Emissions Table, and specifies the Facility and emission units 1, 2, 3, 4, 5, 6, 7, 8, and 10 shall not exceed the tons per year ("tpy") emission limits for the pollutants listed, based on a 12-month rolling total. AR Doc. 99, pg. EHD 0586; Permit condition I.2.b).

333. The Permit states the pound per hour ("lb/hr") emission rates for all the units listed in the Facility Emissions Table are for informational purposes only and shall be used to determine tons per year emissions for each emission unit. AR Doc. 99, pg. EHD 0586; Permit condition I.2.c).

334. In the Permit at the Facility Emissions Table at Permit condition I.2.b), the lb/hr. emissions rates are for informational purposes only, as stated in Permit condition I.2.c). The maximum emissions allowed for the units are stated in Permit condition I.2.a). AR Doc. 99, pg. EHD 0586, pg. EHD 0585.

335. The 20% opacity limits listed in the Facility Emissions Table apply to emission units 3, 6, 7, 8, 9, 10, 11, 14 and 15, are general stationary sources, and do not apply to Unit 12, haul road traffic. AR Doc. 99, pgs. EHD 0586, 0585;

Permit condition I.2.g), h), and i); I.2.b), Facility Emissions Table and Permit condition I.2.a), List of Emission Units and Description.

336. The Permit states which Permit conditions shall be used to determine compliance for each emission unit, including maximum visible air emissions for specified emission units and other material transfer points not otherwise specified in the Permit, and the method for determining violations. AR Doc. 99, page EHD 0586, 0587; Permit conditions I.2.d), e), f), g), h), i), and j).

337. The Permit states recordkeeping, monitoring and reporting requirements. AR Doc. 99, pg. EHD 0588, Permit conditions I.3, I.4 and I.5.

338. The Permit states Vulcan shall submit an annual emissions inventory for all 15 emissions units by March 15 every year. AR Doc. 99, pg. EHD 0589, Permit condition I.5.f).

339. The Permit states it requires Vulcan to report breakdown of both equipment and air pollution control devices or apparatus that cause emissions of air contaminants in excess of Permit limits within two hours of occurrence, and to fax notice to the Department, in addition to stating the malfunction shutdown requirement stated in Permit condition I.1.f), iv. AR Doc. 99, pg. EHD 0589, Permit condition I.5.g).

340. The Permit states the circumstances under which the Department may require compliance tests, and the conditions under which the tests must occur. AR Doc. 99, pg. EHD 0589, Permit condition I.6.

341. The Permit describes provisions for Permit modifications, and specifies compliance assurance and enforcement provisions, including the applicability of

the Air Board Regulations, and the New Mexico Air Quality Control Act, and describes issuance of compliance orders, scheduled and unscheduled inspections, and sampling of emissions by the Department to insure compliance with the Air Quality Control Act and applicable laws and regulations. AR Doc. 99, pgs. EHD 0590 and 0591, Permit conditions I.7 and I.8.

342. The Permit also states a copy of the Permit must be posted in a visible location at the facility, provides the method for determining annual calculation and payment of fees, and the conditions under which the Department may cancel the Permit. AR Doc. 99, pg. EHD 0591, Permit Conditions I.9, I.10, and II.1.

A. Construction and Operational Conditions

343. The Permit contains numerous construction and operational conditions that are enforceable and achievable and that will ensure compliance with the New Mexico Air Quality Control Act (AQCA), the Albuquerque/Bernalillo County Joint Air Quality Control Ordinance (Joint Ordinance), and the Board's implementing regulations. Test. of Dr. Lester, TR at pp. 837-88; AR 99 at EHD 581-84.

344. Permit Condition I.1.f.ii significantly limits the potential emissions from the Vulcan facility by limiting the throughput of the facility to 18 cubic yards per hour for transit mix loading and 12 cubic yards per hour of central mix loading. This condition also significantly limits the amount of time the facility will actually be operating during the day and reduces the number of trucks passing through the facility to a maximum of about one to one-and-a-half trucks per hour.

Test. of Dr. Lester, TR at p. 839; Test. of D. Rocha, TR at p. 422; AR 99 at EHD 583.

345. Permit Condition I.1.b requires installation and operation of a bag house to control emissions from the facility's feed hopper, belt conveyors, and weigh hopper. Bag houses are deemed the Best Available Control Technology, and are the commonly used technologies for controlling emissions from these types of fugitive dust sources. Test. of Dr. Lester, TR at p. 837; AR 98 at EHD 582.

346. Permit Condition I.1.f.v requires the installation and operation of water sprays to control emissions from transfer points and other fugitive dust sources. This condition is enforceable and is stricter than the condition proposed by Mr. Gebhart, which would require the measurement of the moisture content, because Permit Condition I.1.f.v requires that the facility maintain control levels regardless of moisture content levels. Test. of Dr. Lester, TR at pp. 841-42; Vulcan Exhibit 4 at p. 4; AR 98 at EHD 583.

347. Permit Condition I.1.f.vii requires Vulcan to pave all haul roads. Paving is considered the best and most expensive available control measure to mitigate fugitive dust emissions from haul roads. Test. of Dr. Lester, TR at p. 846; AR 99 at EHD 583.

348. Permit Condition I.1.f.vii requires Vulcan, in addition to paving all haul roads, to use reasonably available control measures set forth at 20.11.20.23.B NMAC to mitigate fugitive dust emissions from all paved haul roads. These measures are designed to control fugitive dust emissions by reducing silt loading levels on paved haul roads such that entrained dust from vehicular traffic is

negligible. These measures are practically enforceable. Test. of Dr. Lester, TR at pp. 846-48; Test. of D. Rocha, p. 422-23; AR 99 at EHD 583; Vulcan's Exhibit 4, p. 4.

349. Permit Condition I.1.f.vii requires Vulcan to comply with fugitive dust regulations contained in 20.11.20.12.A NMAC. These regulations prohibit fugitive dust emissions from being carried beyond the facility property line if the fugitive dust will: (a) adversely affect the health, public welfare or safety of the residents of Bernalillo County; or (b) impair visibility or the reasonable use of property; or (c) be visible longer than a total of 15 minutes in any one hour observation period using the visible fugitive dust detection method in 20.11.20.26 NMAC or an equivalent method approved in writing by the AQD. These regulations allow AQD to issue Vulcan a violation whenever visible emissions cross the property boundary. Test. of D. Rocha, TR at pp. 396-99, 443; Test. of C. Albrecht, TR at p. 661; Test of Dr. Lester, TR at pp. 848-50; AR 99 at EHD 583-84; Vulcan Exh. 4, p. 5.

350. The regulatory tools employed in the Permit to control fugitive dust from haul roads are effective and enforceable permit conditions, will minimize actual emissions such that the amount of dust being emitted from the roads will be negligible, and obviated the need to model the haul road emissions. Test. of Dr. Rocha, TR at p. 442-43; Test. of Dr. Lester, TR at pp. 845-50; Vulcan Ex. 4, p. 5.

B. Facility Emission Rates and Limits

351. The Permit contains 20% opacity limitations for a number of emission sources at the facility including the bag house stack, aggregate transfer to elevated

storage, sand transfer to elevated storage, cement uploading to storage silo, fly ash unloading to storage silo, weigh hopper loading, transit mix loading, and hot water boiler. Test. of D. Rocha, TR at pp 393-94; AR 99 at 586.

352. While Vulcan's consultant had at one time offered to include a 5% opacity limit for haul roads during the application process, AQD properly rejected the use of an opacity limit, and such requirement was not included in the final permit. AQD rejected the 5% opacity limit for haul roads because it was not a practically enforceable condition. Test. of Dr. Lester, TR at p. 838; Test. of D. Rocha, TR at p. 290-91, 416, 446; Vulcan Exhibit 4 at p. 4.

353. Fugitive dust control measures adopted in the Permit are a more effective regulatory tool, are more protective, and provide greater latitude of enforcement than a 5% opacity requirement. EPA's test for measuring opacity and determining compliance with a 5% opacity requirement - EPA Method 9 - is ineffective for use in measuring haul road emissions because the test cannot be taken during the night hours, and because haul road emissions are not steady-state, point source emissions - the category of emissions EPA Method 9 is specifically designed to test. Test. of H. Gebhart, TR at pp. 87-88; Test. of D. Rocha, TR at p. 416, 419, 421, 423-25, 443, 446-47; Test. of C. Albrecht, TR at pp. 658-61.

354. The 5% opacity requirement is also ineffective to the extent that there would not be sufficient time to take an opacity measurement using EPA Method 9 since no truck moving through the facility would be in motion for six minutes, the period of time the certified enforcement personnel must observe the emissions as

required by EPA Method 9. Test of D. Rocha, TR at p. 440-42; Test. of C. Albrecht, TR at pp. 659-61

355. The Facility Emissions Table contained in the Permit provides a list of quantified emission rates from each source at the facility, including haul roads, and is incorporated into the Permit for purposes of reporting emissions inventory to EPA. The rates in the Table are conservative estimates since it is better to overestimate emissions when reporting to EPA. Test. of D. Rocha, TR at pp. 394-95, 428-30.

356. Emission rates set forth in the Facility Emissions Table are based upon emissions factors established in AP-42, an EPA-approved guidance document relating to emission factors for concrete batching. Test. of J. Stonesifer, TR at pp. 498-99, 548; AR 47 at EHD 156-272.

357. The rates set forth in the Facility Emissions Table represent each source's potential emissions, not actual emissions. Test. of D. Rocha, TR at p. 442.

358. Vulcan's compliance with fugitive dust emission regulations at 20.11.20.12.A NMAC and with the reasonably available control measures set forth in 20.11.20.23.B NMAC, which are enforceable through conditions I.1.f.vii and viii of the Permit, will result in negligible emissions and thus preclude actual haul road emissions from reaching the potential emission rate of 16.64 tons per year listed in the Permit's Facility Emissions Table. Test. of D. Rocha, TR at p. 427, 442-43.

C. Monitoring, Recordkeeping, and Reporting Conditions

359. The Permit contains myriad recordkeeping, monitoring, and reporting requirements which are included for purposes of enabling AQD to determine whether Vulcan is complying with the terms and conditions of the Permit, including the construction and operational conditions and emission limits. Test. of D. Rocha, TR at p. 391; AR 99 at EHD 588-89.

360. Recordkeeping, monitoring, and reporting conditions are enforceable requirements and ensure that Vulcan is operating the facility within the terms and conditions of the Permit. Test. of D. Rocha, TR at 438; Test. of C. Albrecht, TR at p. 775-77.

D. Compliance Testing

361. The Permit allows AQD to perform compliance tests if inspections of the facility indicate noncompliance with permit conditions or a previous compliance test showed noncompliance or was technically unsatisfactory. Test. of D. Rocha, TR at pp. 399-400.

362. AQD may also conduct a compliance test at the facility for any reason pursuant to its authority under 20.11.90 NMAC. Test. of D. Rocha, TR at pp. 399-400.

VIII. Public Health Concerns.

363. Tom Scharmen's 2004 report entitled "Hospitalization and Mortality Associated with Environmental Hazards and Toxins in Albuquerque" (the "Scharmen Report") is a "tentative and preliminary report" prepared for the purpose of informing community members regarding hospitalization and death

rates in certain neighborhoods in the South Valley. The report has not been updated since its preparation in July 2004. Test. of T. Scharmen, TR at p. 196, 232-33, Scharmen Exhibit 2, p. 3.

364. The Scharmen Report was prepared in less than 20 days in July 2004, and the author acknowledged that a detailed and careful study was not possible at the time. Test. of T. Scharmen, TR at p. 225; Scharmen Exhibit 2, p. 3.

365. The Scharmen Report utilized ZIP code areas to define geographical areas for purpose of the study. Mr. Scharmen acknowledged that the use of ZIP code areas was ultimately inadequate to his task of evaluating health impacts on the Mountain View neighborhood. Test. of T. Scharmen, TR at p. 226.

366. The Scharmen Report utilized the 87105 ZIP code area to define impacts to the Mountain View community. The 87105 ZIP Code area, however, covers an area significantly greater than the Mountain View neighborhood. The population of the Mountain View neighborhood is 8% of the total population of the 87105 ZIP code. Test. of T. Scharmen, TR at p. 227.

367. Mr. Scharmen concluded that there is a higher burden of death and sickness of the South Valley ZIP code than there is upon other neighborhoods in the City of Albuquerque. Scharmen testimony, Tr. p. 204.

368. The deaths and hospitalizations reflected in the study have a relationship not just to environmental hazards, air quality and water quality, but also to lifestyles and poverty. Scharmen testimony, Tr. p. 207.

369. The Scharmen Report does not purport to draw any causal connections between the exposure to environmental contaminant sources or air pollutants in

any of the ZIP codes examined and mortality or morbidity rates in those ZIP codes. Test. of T. Scharmen, TR at pp. 196, 212-13, 232; Scharmen Exhibit 2, p. 5.

370. The Scharmen Report does not demonstrate that the Vulcan facility or emissions from the facility will cause any adverse impact on the health or welfare of the residents of the Mountain View neighborhood.

IX. Public Concerns Regarding Alleged Disparate Treatment

371. In response to public concerns that AQD had been neglecting the South Valley in general and the Mountain View community in particular, AQD compiled information regarding outreach and education activities and regarding monitoring, emissions inventory, permitting control strategies, and other technical assistance. Test. of C. Albrecht, TR at pp. 637-639; AR 93 at EHD 496-502.

372. The compiled information demonstrates that the southwest quadrant of the City, which includes the South Valley and the Mountain View community, was the beneficiary of the largest proportion of outreach activities, technical assistance and special projects in the City. Test. of C. Albrecht, TR at 639; AR 93 at EHD 496-502.

373. In response to comments and concerns expressed by members of the public at the June 23, 2005 hearing regarding the alleged presence of a disproportionate amount of air impacts in the Mountain View community, including the testimony of Tom Scharmen and the presentation of his report, AQD performed a comparative study of air impacts on different ZIP codes in the

City of Albuquerque and County of Bernalillo. Test. of C. Albrecht, TR at pp. 640-652; AR 93 at EHD 503-538.

374. As part of the study, AQD created profiles of every ZIP code in the City of Albuquerque and County of Bernalillo by collecting data relating to allowable emissions from every permitted stationary source in each ZIP code. The information collected during the study has been available at AQD's website for public review. Test. of C. Albrecht, TR at pp 643-48; AR 93 at EHD 503-538.

375. Based upon the compiled information, AQD determined that the 87105 ZIP code did not bear a disproportionate amount of air impacts and ascertained no air impact distribution trend based upon race, ethnicity, or national origin. Test. of C. Albrecht, TR at pp. 649-51; AR 93 at EHD 503-538.

376. Title VI of the Civil Rights Act provides that: "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

377. The City of Albuquerque Air Quality Division is the recipient of federal funding.

378. The City of Albuquerque Air Quality Division must comply with Title VI.

379. The City of Albuquerque Air Quality Division must comply with EPA regulations promulgated pursuant to Title VI.

380. The City of Albuquerque Air Quality Division must follow EPA guidance regarding Title VI.

X. Public Participation, Notice, Additional Consideration.

381. By a February 25, 2005 letter addressed to Petitioner Mountain View Neighborhood Association ("Mtn. View NA") and Petitioner Ms. Patty Grice ("Grice"), the Department provided notice regarding the proposed concrete batch plant; the review process performed by the Department; the proposed location of the Vulcan facility; proposed concrete throughput per hour, day and year; dates of publication of public notice in a locally-circulated newspaper; opportunity and deadline for public comment; the possible public hearing. The letter also enclosed an 8 ½ "x 11" copy of the public notice regarding proposed air quality permit, and provided telephone and email contact information at the Department regarding any questions about the permit or additional information. AR Doc. 18, pg. EHD 0104.

382. On March 6, 2005, the Department published notice in the Albuquerque Journal regarding Vulcan's application for an authority-to-construct air quality permit. The notice included a description of the application's proposal regarding: the ready mix concrete batch plant; the location; the owner and corporate address; the proposed permit identification number; the proposal to operate 24 hours a day, 7 days a week, and 52 weeks a year; the proposed hourly, daily and yearly production rates; the statement that "final estimates may change based on the final technical review of the application"; the estimated maximum air pollution emissions by pollutant; public comment period, deadlines, and how and where interested persons may submit written comments or request a public hearing; the deadline for final decision by the Department regarding the permit; where the

application can be inspected; the telephone and Email address of a Department contact regarding the permit; and additional information. AR Doc. 22, pg. EHD 0112.1.

383. The Director of the Environmental Health Department received five undated letters from individuals requesting a public hearing regarding proposed air quality Permit #1758. AR Doc. 12, pg. EHD 0096; AR Doc. 13, pg. EHD 0097; AR Doc. 14, pg. EHD 0098; AR Doc. 15; pg. EHD 0099; AR Doc. 16, pg. EHD 0100.

384. The Director of the Environmental Health Department received letters from the Mountain View Neighborhood Association, the South Valley Coalition of Neighborhood Association and the Rio Grande Community Development Corporation requesting a public hearing regarding proposed air quality Permit #1758. AR Doc. 23, pg. EHD 0113; AR Doc. 26, pg. EHD 0117; AR Doc. 28, pg. EHD 0119.

385. By May 2, 2005 letters, the Director of the Environmental Health Department, informed the Mountain View Neighborhood Association, South Valley Coalition of Neighborhoods, and Rio Grande Community Development Corp. that their requests for a public meeting or hearing regarding proposed Vulcan air quality Permit #1758 had been approved in order to provide an opportunity for questions, clarifications and information distribution, and either notification of the public meeting/hearing would be sent by the Department to interested parties, or the Department would send mailing labels to the

organizations, as determined by the requesting organization. AR Doc. 35, pg. EHD 0138; AR Doc. 34, pg. EHD 0137; AR Doc. 33, pg. EHD 0136.

386. The Department sent a May 26, 2005 letter in English and in Spanish to the Mountain View NA, the South Valley Coalition of Neighborhood Association, and the Rio Grande Community Development Corporation. The letters were written to the members of those organizations from the Department, and notified members about Vulcan's application for an authority-to- construct permit for a ready-mix concrete batch plant, the June 23, 2005 public information meeting at the Mountain View Community Center, and the purpose of the meeting. AR Doc. 44, pg. EHD 0149 and AR Doc. 45, pg. EHD 0150; AR Doc. 40, pg. EHD 145 and AR Doc. 41, pg. EHD 0146; AR Doc. 42, pg. EHD 0147 and AR Doc. 43, pg. EHD 0148.

387. The May 26, 2005 letters to the Mountain View NA, the South Valley Coalition of Neighborhood Association, and the Rio Grande Community Development Corporation, enclosed 8 12/" x 11" English-language and Spanish-language flyers that provided date, time and location information regarding the June 23, 2006 public information meeting at the Mountain View Community Center concerning the proposed Vulcan authority-to-construct Permit, and providing telephone numbers where additional information could be obtained. AR Doc. 52, pg. EHD 0298; AR Doc. 53, pg. EHD 299.

388. Department Environmental Engineering Manager Isreal Tavarez, Albrecht, Environmental Health Manager Fabian Macias, and Rocha attended the public information hearing, listened to public comment, was available to answer

questions, and made handwritten notes. AR Doc. 58, pg. EHD 0331; AR Doc. 59, pg. EHD 0336; AR Doc. 60 pg. EHD 0339; AR Doc. 61 pg. EHD 0341; RP #62, 5/24/06 hr., Vol. 2, pg. 554, Ln. 5, 15; RP #62, 5/24/06 hr., Vol. 2, pg. 622, Ln. 14-22, pg. 623, Ln. 2, Ln. 6, 7, Ln. 12.

389. Dingman and Stonesifer, the meteorologist for the Department, attended the public information hearing, listened to public comment, and were available to answer questions. RP #62, 5/24/06 hr., Vol. 2, pg. 620, Ln. 8-11.

390. At the June 23, 2005 public information meeting or hearing, individuals signed a registry at the Mountain View Community Center documenting their attendance and indicating whether they wanted to give spoken or written testimony regarding the proposed Permit. AR Doc. 54, pg. EHD 0300.

391. The June 23, 2005 public information hearing was tape recorded, translated into Spanish at the hearing, and was overseen by a hearing officer who was a lawyer who stated at the beginning of the hearing information regarding Vulcan's pending permit application, including Vulcan's proposal to produce ready mix concrete at a maximum production rate of 300 cubic yards per hour maximum air pollution emissions; and that final estimates of pollutants may change based on the final technical review of the application. AR Doc. 55, pg. EHD 0317, 0318; AR Doc. 105, pg. EHD 0602.

392. At the June 23, 2005 public information hearing, the Hearing Officer announced the Department had not yet reached a final decision regarding Vulcan's application for an air quality permit. AR Doc. 105, pg. EHD 0602 at EHD 607, Ln. 10-13.

393. At the June 23, 2005 public information hearing, a copy of the documents that were involved in the Vulcan application and a copy of the regulations were available at the entrance to the hearing room. AR Doc. 105, pg. EHD 0602 at EHD 606, Ln. 20-23.

394. At the June 23, 2005 public information hearing, Vulcan made a presentation and answered questions, and the public testified about the proposed air quality permit and other matters of community concern. AR Doc. 105, pg. EHD 0602.

395. At the June 23 public information hearing, an opportunity to speak was provided for everyone who wanted to speak. AR Doc. 105 , pg. EHD 602.

396. By a letter dated December 28, 2005 to persons who either submitted written or comments or evidence regarding the Vulcan air quality permit application or participated in the June 23, 2005 public information hearing (Participant Notification Letter), the Manager of the Department's Stationary Sources Program stated the Vulcan air quality permit application was a request for authority to construct a new transit-mix and central-mix concrete batch plant at 4519 Williams Street SE. AR Doc. 100, pg. EHD 0593.

397. The Participant Notification Letter stated the permit application decision was based on the requirements of the New Mexico Air Quality Control Act, the City and County Joint Air Quality Control Board Ordinances and the Air Board Authority-to-Construct regulation. AR Doc. 100, pg. EHD 0593.

398. The Participant Notification Letter stated the Department members who attended the June 23, 2005 public information hearing included permit writers,

computer modeling specialists, a meteorologist and supervisory and management personnel. AR Doc. 100, pg. EHD 0593.

399. The Participant Notification Letter stated the Department had considered, within the context of the requirements (of the) Act, the Ordinances and Part 41: all written comments and evidence, testimony, exhibits and questions supporting and opposing the permit application; whether the application complied with the technical requirements of the Act, the Ordinances and Part 41; public opinion regarding air quality issues, wider public health and environmental issues; and additional public safety and welfare issues. AR Doc. 100, pg. EHD 0593.

400. The Participant Notification Letter listed the contents of the Department's administrative record regarding the permit application: the application, evidence submitted by the applicant, written comments and evidence, and all written and oral questions, testimony and exhibits submitted at the Public Information Hearing. AR Doc. 100, pg. EHD 0593.

401. The Participant Notification Letter described the three different decisions the Department can made could make regarding the permit application and stated the permit applicant had met the requirements of the Act, the Ordinances and Part 41. AR Doc. 100, pg. EHD 0593.

402. The Participant Notification Letter stated the Department members who attended the June 23, 2005 public information hearing included permit writers, computer modeling specialists, a meteorologist and supervisory and management personnel, and stated the Department considered all written comments and

evidence, testimony, exhibits and questions supporting and opposing the permit application. AR Doc. 100, pg. EHD 0593.

403. The Participant Notification Letter stated the Department had imposed conditions in addition to the conditions requested in the permit application. AR Doc. 100, pg. EHD 0594.

404. The Participant Notification Letter stated the Department had granted the Permit subject to eight conditions that were described in the Letter, which included: a maximum concrete production rate of 18 cubic yards per hour for transit mix loading and 12 cubic yards per hour for central mix loading; maximum concrete production for transit mix loading and central mix loading based on a 12-month rolling total; shut down, repair and start-up requirements if malfunction caused excessive emissions of the baghouse; and water spray requirements regarding installation, operation, maintenance and minimum control efficiency for the weigh hopper, disturbed surfaces/active aggregate storage piles during stockpiling/surface disturbance operations. AR Doc. 100, pg. EHD 0594.

405. The Participant Notification Letter described Permit haul road requirements: 1.) all haul roads supporting the concrete batch plan located within the Vulcan property boundary shall be paved to mitigate emissions of particulate matter from haul roads; and 2.) Vulcan shall use reasonably available control measures found in 20.11.20.23.B NMAC to mitigate fugitive dust emissions from all paved haul roads. AR Doc. 100, pg. EHD 0594.

406. The Participant Notification Letter stated that the Permit prohibits Vulcan allowing fugitive dust, track out, or transported material from any active

operation, open storage pile, paved or unpaved roadway or disturbed surface area, or inactive disturbed surface area to be carried beyond the property line, right-of-way, easement or any other area under the control of Vulcan generating or allowing the fugitive dust if the fugitive dust will : 1.) adversely affect the public health, welfare or safety of the residents of the county; or 2) impair visibility or the reasonable use of property; or 3) be visible longer than a total of 15 minutes in any one hour observation period using the visible detection method in 20.11.20.26 NMAC or an equivalent method approved in writing by the Department. AR Doc. 100; pg. EHD 0594.

407. The Participant Notification Letter stated it is a violation of 20.11.20 NMAC for Vulcan to fail to stabilize and maintain all inactive disturbed surface areas in stable condition in order to mitigate fugitive dust. AR Doc. 100, pg. EHD 0595.

408. The Participant Notification Letter stated the Department had issued Air quality Permit #1758 on December 19, 2005; provided a phone number for questions regarding the Permit issuance or permitting process; and notified the participant reader of the possibility of filing a petition for a first hearing on the merits before the Air Board, to whom the petition must be submitted, the address and that the petition must be submitted within 30 days of receipt of the letter. AR Doc. 100; pg. EHD 0595.

XI. Requests to Inspect Public Record, Responses, Public Comment.

409. By a Request to Inspect Public Records form dated March 17, 2005, Petitioner Patty Grice, for Petitioner Mountain View NA, asked to inspect Department records related to the Permit application. AR Doc. 24, pg. EHD 0114.

410. By a March 21, 2005 letter, the Department notified Ms. Grice the requested records were available at the Department for her review. AR Doc. 25, pg. EHD 0115.

411. The March 21, 2005 response letter from the Department was received at Ms. Grice's address on March 22, 2005. AR Doc. 25, pg. EHD 0116.

412. On March 31, 2005, Mr. Grice paid the Department for photocopies of the public records she received. AR Doc. 27, pg. EHD 0118.

413. By a Request to Inspect Public Records form dated August 8, 2005, Petitioner Patty Grice, for Petitioner Mountain View NA, asked to inspect "… modeling data on CD for Vulcan Air Quality Permit #1758 (amended modeling)… ." City Ex. #2.

414. By a letter dated August 9, 2005, the Department notified Ms. Grice dispersion the air dispersion modeling run was available in electronic format, would be duplicated, and would cost $1 at the time of pickup, or could be exchanged for a blank CD if provided by Ms. Grice. AR Doc. 69, EHD pg. 0390.

415. By a Request to Inspect Public Records form dated August 26, 2005, Petitioner Patty Grice, for Petitioner Mountain View NA, asked to inspect specified Department records. AR Doc. 77, EHD pg. 0408. .

416. By a letter dated August 29, 2005, the Department notified Ms. Grice the permit application and the air dispersion modeling run were available in electronic format on CD, and would be duplicated for $1 paid at the time of pickup, or would be copied on a blank CD if provided by Ms. Grice. AR Doc. 84, EHD pg. 0428.

417. By a Request to Inspect Public Records form dated November 30, 2005, and faxed to the Department December 1, 2005, Petitioner Patty Grice, for Petitioner Mountain View NA, asked to inspect: "All new information since my last review in early September of the Vulcan Materials Air Quality Permit #1758 including all correspondence and new modeling data". AR Doc. 94, EHD pg. 0539.

418. By a letter dated December 6, 2005, the Department notified Ms. Grice the requested materials were available at the Division's Westside offices. City Ex. 5.

419. By December 19, 2005 email, the Department emailed to Ms. Grice requested correspondence and documents. City Ex. #6.

420. By a Request to Inspect Public Records form dated January 2, 2006, and received by the Department January 3, 2006, Petitioner Patty Grice, for Petitioner Mountain View NA, asked to inspect: "Final Permit as approved for Vulcan Materials Permit # 1758". AR Doc. 101, EHD pg. 059. .

421. By a letter dated January 4, 2006, the Department notified Ms. Grice the requested records were available at the Department for her review. City Ex. #7

422. Between March 17, 2005, and January 3, 2006, Petitioner Patty Grice, for Petitioner Mountain View NA, submitted five separate written requests to inspect

public records regarding the Permit, received five written responses from the Department, and received photocopies and electronic records in response from the Department, as requested by Ms. Grice. AR Doc. 24, pg. EHD 0114; AR Doc. 25, pg. EHD 0115; AR Doc. 27, pg. EHD 0118; City Ex. No. 2; AR Doc. 69, pg. EHD 0390; AR Doc. 77, pg. EHD 0408; AR Doc. 84, pg. EHD 0428; AR Doc. 94, pg. EHD 0539; City Ex. 5; City Ex No. 6.

CONCLUSIONS OF LAW

423. The New Mexico Air Quality Act (Air Act) provides that the County of Bernalillo (County) and the City of Albuquerque (City) may assume jurisdiction as a local air quality authority by adopting ordinances that provide for the local administration and enforcement of the Air Act. NMSA 1978 §74-2-4.A; §74-2-2.J, §74-2-2.K.

424. The County and City assumed jurisdiction as a local air quality authority by adopting Joint Air Quality Control Board Ordinances. Bernalillo County, N.M. Ordinance §94-5-1 et seq. (County Ordinance); City of Albuquerque, N.M. Ordinance §9-5-1-1 et seq. (1994) (City Ordinance).

425. The County Ordinance and the City Ordinance established the Albuquerque-Bernalillo County Air Quality Control Board (Air Board), which is authorized to serve as a joint local authority acting on behalf of the County and the City. County Ord. 94-5-3.A; City Ord. 9-5-1-3(A).

426. The County Ordinance and the City Ordinance established that, within the exterior boundaries of Bernalillo County, the Air Board has the authority and

jurisdiction to exercise the same functions pertaining to air quality as the functions that have been delegated to the EIB by the Air Act to the EIB. County Ord. 94-5-3.A; City Ord. 9-5-1-3(A).

427. The Air Act established that the duty of New Mexico Environmental Improvement Board and the local board is to prevent or abate air pollution within Bernalillo County. NMSA 1978 §74-2-5.A; County Ord. 94-5-4.A; City Ord. 9-5-1-4A.

428. The duty of the Air Board is to prevent or abate air pollution within Bernalillo County. NMSA 1978 §74-2-5.A; County Ord. 94-5-4.A; City Ord. 9-5-1-4A.

429. The Air Board has no authority to establish or change the zoning of property within Bernalillo County. NMSA 1978 §74-2-5.A; County Ord. 94-5-4.A; City Ord. 9-5-1-4A.

430. The Air Act states that the ordinance may create a local agency to administer and enforce the provisions of the Air Act within the boundaries of the local authority that shall, within the boundaries of the local authority, perform all of the duties required of the New Mexico Environment Department (NMED), except for those duties and powers reserved exclusively for NMED. NMSA 1978 §74-2-4.A(2).

431. The County Ordinance and the City Ordinance authorize and direct the City to provide the local agency to administer and enforce the provisions of the Air Act, the County Ordinance, the City Ordinance and any regulations adopted pursuant thereto and any other laws relating to air pollution applicable within

Bernalillo County. County Ord. 94-5-5; County Ord. 94-5-2.D; City Ord. 9-5-1-5; 9-5-1-2.

432. The Air Act establishes the duties and powers of the NMED and the local agency, which is the Albuquerque Environmental Health Department (Department). NMSA 1978 §74-2-5.1; County Ord. 94-5-5; County Ord. 94-5-2.D; City Ord. 9-5-1-5; 9-5-1-2; 20.11.1.7.S NMAC.

433. Pursuant to the Air Act, a "source" is a structure, building, equipment, facility, installation or operation that emits or may emit an air contaminant. NMSA 1978 §74-2-2.T.

434. The Air Act, the County Ordinance and the City Ordinance require the Air Board to adopt a regulation that requires a person or entity intending to construct a source to obtain a construction permit from the Department, except as otherwise specifically provided by regulation. NMSA 1978 §74-2-7.A(1); County Ord. 94-5-7.A(1); City Ord. 9-5-1-7(A)(1).

435. Pursuant to the Air Act, the Air Board adopted a regulation that, except as otherwise specifically provided by the regulation, requires a person or entity intending to construct a source within Bernalillo County, to obtain a construction permit from the Department. 20.11.41, Authority-to-Construct (Part 41).

436. Vulcan's proposed concrete batch plant was a "source" that may emit an air contaminant, was subject to Part 41, and Vulcan was required to submit an authority-to-construct permit application to the Department. Subsection B of 20.11.41.2 NMSA.

437. The Air Act requires Part 41 to require the applicant for a construction permit (Applicant) to submit relevant information, including information the Department deems necessary to determine that regulations and standards under the Air Act or the federal Clean Air Act will not be violated. NMSA 1978 §74-2-7.B(1).

438. Part 41 requires the Applicant to submit specific information in the permit application so the Department can determine whether the regulations and standards under the Air Act or the federal Clean Air Act will be violated. Paragraphs A and B of 20.11.41.13 NMAC.

439. The Air Act requires Part 41 to specify information regarding public notice, comment period and public hearing, if any, required prior to the issuance of a permit. NMSA 1978 §74-2-7.B(5).

440. Part 41 requires the Department to execute specific activities before issuing a permit regarding public notice and a public comment period, and regarding holding a public hearing if the Department director determines there is significant public interest in the permit application. 20.11.41.14 NMAC.

441. The Air Act authorizes the Department to deny a permit application for the reasons listed in the Act. NMSA 1978 §74-2-7.C.

442. Part 41 authorizes the Department to deny a permit application for the reasons that are consistent with the reasons listed in the Act. 20.11.41.16 NMAC.

443. The Air Act authorizes to Department to determine on a case-by-case basis and specify in a permit individual emission limits, but only as restrictive as necessary to meet the requirements of the Air Act and the Clean Air Act or the

emissions rate specified in the permit application, whichever is more stringent. NMSA 1978 §74-2-7.D(1)(b).

444. Part 41 authorizes the Department to determine on a case-by-case basis and specify in a permit individual emissions limits, but only as restrictive as necessary to meet the requirements of the Air Act and the Clean Air Act or the emissions rate specified in the permit application, whichever is more stringent. Paragraph (1) of Subsection B of 20.11.41.18 NMSA.

445. The Air Act authorizes the Department to determine on a case-by-case basis and specify in a permit, but does not require the Department to include, permit conditions requiring installation and operation of control technology sufficient to meet the standards, rules and requirements of the Air Act and the Clean Air Act. NMSA 1978 §74-2-7.D(1)(a).

446. Part 41 authorizes the Department to determine on a case-by-case basis and specify in a permit, but does not require the Department to include, permit conditions requiring installation and operation of control technology sufficient to meet the standards, rules and requirements of the Air Act and the Clean Air Act. Paragraph (2) of Subsection B of 20.11.41.18 NMSA.

447. Because Authority-to-Construct Permit #1758 authorizes construction and operation of a cement batch plant within Bernalillo County, the Air Board has jurisdiction over the parties and the subject matter of this action.

448. The Air Act requires the Air Board to adopt, promulgate, publish, amend and repeal regulations consistent with the Air Act to attain and maintain national ambient air quality standards, and prevent or abate air pollution, including

regulations prescribing air standards within the geographic area of the Board's jurisdiction, or any part thereof. NMSA 1978 §74-2-5.B(1).

449. The County Ordinance and the City Ordinance Require the Air Board to adopt, promulgate, publish, amend and repeal regulations consistent with the Air Act and, respectively, the County Ordinance and the City Ordinance to attain and maintain national ambient air quality standards, and prevent or abate air pollution, including regulations prescribing air standards within the geographic area of the Air Board's jurisdiction, or any part thereof. County Ord. 94-5, Sec. 4.B(1); City Ord. 9-5-1-4(B)(1).

450. The Air Quality Regulations for Albuquerque and Bernalillo County that were adopted by the Air Board, and, specifically, Part 41, establish requirements for attaining and maintaining national ambient air quality standards, and preventing or abating air pollution, and include air standards that are applicable within Bernalillo County. NMSA 1978 §74-2-5.B(1), County Ord. 94-5, Sec. 4.B(1), and City Ord. 9-5-1-4(B)(1).

451. The Department's actions following receipt of Vulcan's first permit application met the public notice requirements of the Air Quality Control Act, 74-2-1 et seq. NMSA 1978; the Joint Air Quality Control Board Ordinance of the County of Bernalillo, Ord. No. 94-5; the Joint Air Quality Control Board Ordinance of the City of Albuquerque Code of Ordinances 9-5-1-1 et seq. (ROA 1994); and 20.11.41 NMAC, Authority-to-Construct.

452. The public participation preceding and following the Department's issuance of Permit #1758 met the requirements of the Air Quality Control Act,

74-2-1 et seq. NMSA 1978; the Joint Air Quality Control Board Ordinance of the County of Bernalillo, Ord. No. 94-5; the Joint Air Quality Control Board Ordinance of the City of Albuquerque Code of Ordinances 9-5-1-1 et seq. (ROA 1994); and 20.11.41 NMAC, Authority-to-Construct.

453. The January 2007 reopened hearing in AQCB 2006-1 met all procedural requirements under the AQCA, the Joint Ordinance, and the Board's implementing regulations.

454. The Division established TSP background concentrations that are consistent with Appendix W.

455. The Division technically justified the use of the airport (NWS) meteorological data compared to the Mountain View data.

456. The Division conducted modeling consistent with Appendix W and other state and federal guidance.

457. It was technically supportable and within the Division's discretion as the reviewing authority to allow Vulcan's final air dispersion modeling to model the haul road fugitive dust emissions at zero because Permit #1758 requires Vulcan to pave their haul roads, paving haul roads is best management practice for controlling particulate emissions from haul roads, and Permit #1758 incorporates the requirements of 20.11.20 NMAC, Fugitive Dust Control, which requires Vulcan to keep the paved haul roads clean and prevent fugitive dust from being carried beyond the Vulcan property line.

458. The New Mexico Air Quality Control Act ("Air Act") authorizes the Department to deny a permit application for the reasons listed in the Act. NMSA 1978 §74-2-7.C.

459. 20.11.41 NMAC ("Part 41") authorizes the Department to deny a permit application for the reasons that are consistent with the reasons listed in the Air Act. 20.11.41.16 NMAC.

460. The Department has no authority to establish or change the zoning of property within Bernalillo County.

461. The Air Act authorizes the Department to determine on a case-by-case basis and specify in a permit individual emission limits, but only as restrictive as necessary to meet the requirements of the Air Act and the federal Clean Air Act or the emissions rate specified in the permit application, whichever is more stringent. NMSA 1978 §74-2-7.D(1)(b).

462. The Air Quality Regulations for Albuquerque and Bernalillo County that were adopted by the Air Board, and, specifically, Part 41, establish requirements for attaining and maintaining national ambient air quality standards, and preventing or abating air pollution, and include air standards that are applicable within Bernalillo County. NMSA 1978 §74-2-5.B(1), County Ord. 94-5, § 4.B(1), and City Ord. 9-5-1-4(B)(1).

463. The Department's review of the Vulcan permit applications and related air dispersion models and model runs was sufficient to meet the requirements of the Air Act, the County Ordinance, the City Ordinance, Part 41 and all other applicable legal requirements.

464. The final air dispersion modeling submitted to the Department by Vulcan in 2005 included a number of conservative, protective assumptions and demonstrated compliance with applicable state and local air quality regulations.

465. Vulcan's final modeling submittal in 2005 demonstrated, if the Vulcan facility is constructed and operated as proposed in Vulcan's 2005 final permit application, the facility will not cause or contribute to the exceedance of any national or local ambient air quality standards.

466. In 2005, there was no statutory or regulatory basis for the Department to deny issuance of an authority-to-construct permit to Vulcan.

467. Permit #1758 was issued on December 19, 2005, consistent with the requirements of the Air Act, the County Ordinance, the City Ordinance, Part 41 and all other applicable legal requirements.

468. The terms and conditions of Permit #1758 are consistent with the requirements of the Air Act, the County Ordinance, the City Ordinance, Part 41 and all other applicable legal requirements.

469. The construction and operation of the Vulcan facility in accordance with Permit #1758 will comply with all applicable local, state and federal air pollution standards and regulations.

470. The New Mexico Air Quality Control Act provided the Department with no justification or authority for denying issuance of a permit to Vulcan.

471. 20.11.41 NMAC provided the Department with no justification or authority for denying issuance of a permit to Vulcan.

472. The Department's decision to issue Permit #1758 was not arbitrary or capricious, was supported by substantial evidence in the record, and was in accordance with the law.

473. Based upon the evidence presented at the May 2006 hearing and the January 2007 hearing, the Air Board has three options: sustain, modify or reverse the Department's issuance of Permit #1758. NMSA 1978 §74-2-7.H, K; County Ord. 94-5.7K; City Ord. 9-5-1-7(K).

474. There is no statutory, regulatory, or other basis for the Air Board to reverse the Department's issuance of Permit #1758.

475. The terms and conditions of Permit #1758 are enforceable and protective of air quality standards. The addition of on-site wheel washes addresses a practical concern about enforcement resources, and will further mitigate the potential for fugitive dust from the facility.

476. The terms and conditions of Permit #1758 are consistent with the requirements of the Air Act, the County Ordinance, the City Ordinance, Part 41 and all other applicable legal requirements.

477. Notwithstanding the definition of "Modification" in 20.11.41.7.H NMAC, under this Permit, any increase in maximum concrete production rate at the Vulcan facility will require a permit modification in accordance with applicable regulations.

478. A person who participated in a permitting action before the Department and has petitioned for a hearing before the Air Board has the burden of proof. NMSA 1978 §74-2-7.H, K; County Ord. 94-5.7K; City Ord. 9-5-1-7(K).

479. The Petitioners must prove each of their claims by a preponderance of evidence.

480. During the May 23, 24 and 25, 2006 hearing on the merits, during the January 10 and January 16, 2007 reopened hearing, and in AQCB 2006-1 in its entirety, the Petitioners failed to carry their burden of proof regarding each claim raised in Petitioner's Appeal and Petition for Hearing.

481. During the May 23, 24 and 25, 2006 hearing on the merits, during the January 10 and January 16, 2007 reopened hearing, and in AQCB 2006-1 in its entirety, the Petitioners submitted no statutory, regulatory or other evidence that proved by a preponderance of evidence that the Department was required to deny Vulcan's final permit application and supporting air dispersion modeling.

482. Petitioners, not including Petitioner Ortiz-Strogen, failed to prove by a preponderance of evidence the first and second claims asserted in Petitioners' Appeal and Petition for Hearing.

483. Petitioners, not including Petitioner Ortiz-Strogen, failed to prove by a preponderance of evidence all allegations asserted in Petitioners' Appeal and Petition for Hearing.

484. Petitioner Theresa Ortiz-Strogen failed to prove by a preponderance of evidence all allegations asserted in her January 19, 2006 letter.