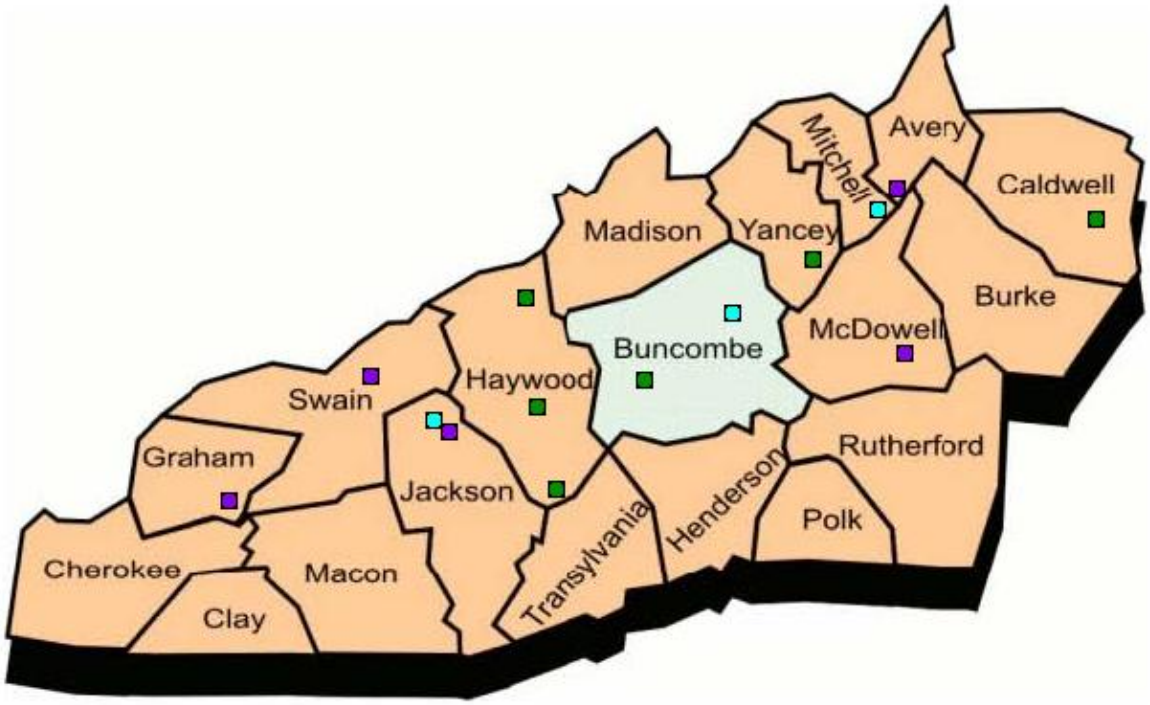
2012 ANNUAL MONITORING NETWORK PLAN FOR THE NORTH CAROLINA DIVISION OF AIR QUALITY

VOLUME 2

SITE DESCRIPTIONS BY DIVISION OF AIR QUALITY REGIONAL OFFICE AND METEROPOLITAN STATISTICAL AREA

A. THE ASHEVILLE MONITORING REGION



July 2, 2012

North Carolina Division of Air Quality
A Division of the North Carolina Department
of Environment and Natural Resources
Mail Service Center 1641
Raleigh, North Carolina 27699-1641

Table of Contents

List of Figures A2

A. The Asheville Monitoring Region A5

(1) The Western Mountains A5

(2) The Asheville MSA A9

(3) The Eastern Mountains A21

Appendix A.1 Annual Network Site Review Forms for 2011 ..... A27

Appendix A-2. Scale of Representativeness A80

List of Figures

Figure A1. The Asheville Monitoring Region A5
Figure A2. Location of Monitoring Sites in the Western Mountain Section of North Carolina A5
Figure A3. Looking North from the Joanna Bald Site A6
Figure A4. Looking Northwest from the Joanna Bald Site A6
Figure A5. Looking West from the Joanna Bald Site A6
Figure A6. Joanna Bald Ozone Monitoring Site A6
Figure A7. Looking Northeast from the Joanna Bald Site A6
Figure A8. Looking East from the Joanna Bald Site A6
Figure A9. Looking Southeast from the Joanna Bald Site A6
Figure A10. Looking Southwest from the Joanna Bald Site A7
Figure A11. Looking South from the Joanna Bald Site A7
Figure A12. The Bryson City Ozone, Particle, and Meteorological Monitoring Site (37-173-0002) A7
Figure A13. Looking North from the Current Bryson Site A8
Figure A14. Looking Northwest from the Bryson Site A8
Figure A15. Looking West from the Current Bryson Site A8
Figure A16. Looking Northeast from the Bryson Site A8
Figure A17. Looking East from the Current Bryson Site A8
Figure A18. Looking Southeast from the Bryson Site A8
Figure A19. Looking Southwest from the Bryson Site A9
Figure A20. Looking South from the Current Bryson Site A9
Figure A21. Locations of Monitoring Sites in the Asheville MSA A10
Figure A22. WNCRAQA Board of Education Fine Particle Monitoring Site (37-021-0024) A10
Figure A23. Board of Education Site Looking North A11
Figure 24A. Board of Education Site Looking Northwest A11
Figure A25. Board of Education Site Looking West A11
Figure A26. Board of Education Site Looking Southwest A11
Figure A27. Board of Education Site Looking Northeast A11

Figure A28. Board of Education Site Looking East A11
Figure A29. Board of Education Site Looking Southeast A11
Figure A30. Board of Education Site Looking South A11
Figure A31. The Bent Creek Ozone Monitoring Site (37-021-0030) A12
Figure A32. Looking North from Bent Creek Site A12
Figure A33. Looking Northwest from the Bent Creek Site A12
Figure A34. Looking Northeast from the Bent Creek Site A12
Figure A35. Looking East from the Bent Creek Site A12
Figure A36. Looking West from the Bent Creek Site A13
Figure A37. Looking Southwest from the Bent Creek Site A13
Figure A38. Looking Southeast from the Bent Creek Site A13
Figure A39. Looking South from the Bent Creek Site A13
Figure A40. AB Tech Urban Air Toxics Monitoring Site A13
Figure A41. Looking North from the AB Tech Site A14
Figure A42. Looking Northwest from the AB Tech Site A14
Figure A43. Looking West from the AB Tech Site A14
Figure A44. Looking Southwest from the AB Tech Site A14
Figure A45. Looking Northeast from the AB Tech Site A14
Figure A46. Looking East from the AB Tech Site A14
Figure A47. Looking Southeast from the AB Tech Site A14
Figure A48. Looking South from the AB Tech Site A14
Figure A49. The Waynesville Elementary School Ozone Monitoring Site A15
Figure A50. Aerial view of the Waynesville ozone monitoring site (A is the old site location) A15
Figure A51. Looking North from Waynesville Ozone Site A15
Figure A52. Looking East from the Waynesville Ozone Site A15
Figure A53. Looking West from the Waynesville Ozone Site A16
Figure A54. Waynesville Ozone Site Looking South A16
Figure A55. The Waynesville Recreation Center Fine Particle Monitoring Site A16
Figure A56. Waynesville Recreation Center Looking North A17
Figure A57. Waynesville Recreation Center Looking West A17
Figure A58. Waynesville Recreation Center Looking East A17
Figure A59. Waynesville Recreation Center Looking South A17
Figure A60. Fry Pan Ozone Monitoring Site (37-087-0035) A17
Figure A61. Looking North from the Fry Pan Site A18
Figure A62. Looking Northwest from the Fry Pan Site A18
Figure A63. Looking Northeast from the Fry Pan Site A18
Figure A64. Looking East from the Fry Pan Site A18
Figure A65. Looking West from the Fry Pan Site A18
Figure A66. Looking Southwest from the Fry Pan Site A18
Figure A67. Looking Southeast from the Fry Pan Site A19
Figure A68. Looking South from the Fry Pan Site A19
Figure A69. Looking North from the Purchase Knob Site A19

Figure A70. Looking Northeast from the Purchase Knob Site....A19
Figure A71. Looking Northwest from the Purchase Knob Site....A19
Figure A72. Looking West from the Purchase Knob Site....A19
Figure A73. Looking Southwest from the Purchase Knob Site....A20
Figure A74. Looking East from the Purchase Knob Site....A20
Figure A75. Looking Southeast from the Purchase Knob Site....A20
Figure A76. Looking South from the Purchase Knob Site....A20
Figure A77. Monitoring Sites in the Eastern Mountains....A21
Figure A78. Linville Falls Ozone and IMPROVE Monitoring Site....A22
Figure A79. Looking North from the Linville Site....A22
Figure A80. Looking Northwest from the Linville Site....A22
Figure A81. Looking West from the Linville site....A22
Figure A82. Looking Northeast from the Linville Site....A22
Figure A83. Looking East from the Linville Site....A22
Figure A84. Looking Southeast from the Linville Site....A22
Figure A85. Looking Southwest from the Linville Site....A23
Figure A86. Looking South from the Linville Site....A23
Figure A87. Looking North from the Marion Site....A23
Figure A88. Looking Northwest from the Marion Site....A23
Figure A89. The Marion Fine Particle Monitoring Site....A23
Figure A90. Looking Northeast from the Marion Site....A23
Figure A91. Looking East from the Marion Site....A23
Figure A92. Looking West from the Marion Site....A24
Figure A93. Looking Southwest from the Marion Site....A24
Figure A94. Looking Southeast from the Marion Site....A24
Figure A95. Looking South from the Marion Site....A24
Figure A96. Looking North from the Spruce Pine Site....A24
Figure A97. The Spruce Pine Fine Particle Monitoring Site....A24
Figure A98. Looking Northeast from the Spruce Pine Site....A24
Figure A99. Looking Northwest from the Spruce Pine Site....A25
Figure A100. Looking West from the Spruce Pine Site....A25
Figure A101. Spruce Pine Site Looking Southwest....A25
Figure A102. Looking East from the Spruce Pine Site....A25
Figure A103. Spruce Pine Site Looking Southeast....A25
Figure A104. Looking South from the Spruce Pine Site....A25
Figure A105. The Mount Mitchell Ozone Monitoring Site....A25
Figure A106. Looking North from the Mount Mitchell Site....A26
Figure A107. Looking West from the Mount Mitchell Site....A26
Figure A108. Looking East from the Mount Mitchell Site....A26
Figure A109. Looking South from the Mount Mitchell Site....A26

A. The Asheville Monitoring Region

The Asheville Monitoring Region, shown in Figure A1, consists of four sections: (1) the Western Mountains (Cherokee, Clay, Graham, Jackson, Macon, Swain, and Transylvania Counties), (2) the Asheville Metropolitan Statistical Area (Buncombe, Haywood, Henderson, and Madison Counties), (3) the Eastern Mountains (Avery, McDowell, Mitchell, Polk, Rutherford, and Yancey Counties), and (4) the western portion of the Hickory-Lenoir-Morganton MSA (Burke and Caldwell Counties). This section of the monitoring plan will focus on the first three sections. Monitoring in Burke and Caldwell is covered in Section C, the Mooresville Monitoring Region.

Figure A1. The Asheville Monitoring Region
The squares show the approximate locations of the monitoring sites in this region.

(1) The Western Mountains

The Western Mountains consists of seven counties: Cherokee, Clay, Graham, Jackson, Macon, Swain, and Transylvania. There are no Metropolitan Statistical Areas in this section of the North Carolina Mountains. The Brevard Micropolitan Statistical Area is located in Transylvania County. The NC-DAQ currently operates two monitoring sites in the Western Mountains and the Eastern Band of Cherokee Indians of North Carolina (EBCINC) operates two monitoring sites. The EBCINC operates a fine-particle monitoring site in Cherokee, North Carolina, and an ozone-monitoring site at Barnett Knob. Both of these sites are tribal monitors and are not part of the NC-DAQ monitoring network. This section will focus on the two monitoring sites operated by the NC-DAQ. One of these sites is an ozone-monitoring site located on Joanna Bald Mountain in the Joyce Kilmer National Wilderness Area and the other site is a particle and ozone monitoring site located in Bryson City. The locations of these four monitors are shown in Figure A2.

A is the Bryson City ozone and particle monitoring site; B is the Joanna Bald ozone-monitoring site; C is the Barnett Knob ozone-monitoring site (a tribal site); D is the Cherokee fine-particle monitoring site (a tribal site). The circles around the monitoring sites show the scale of representation (neighborhood scale of 0.5 to 4 Km for Bryson and Cherokee and regional scale of 50 Km plus for Joanna and Barnett Knob).

Figure A2. Location of Monitoring Sites in the Western Mountain Section of North Carolina

At the **Joanna Bald** site in Graham County the NC-DAQ operates an ozone monitor that belongs to the United States Department of Agriculture Forest Service. A picture of the site as well as views looking north, east, south and west are provided in Figure A3 through Figure A11. This monitoring site is located in the Joyce Kilmer-Slickrock Wilderness Area, a Class I area. This monitor is a rural monitor and could become a required rural area ozone monitor if EPA requires ozone monitoring in Class 1 areas.

Figure A6. Joanna Bald Ozone Monitoring Site

Figure A3. Looking North from the Joanna Bald Site

Figure A7. Looking Northeast from the Joanna Bald Site

Figure A4. Looking Northwest from the Joanna Bald Site

Figure A8. Looking East from the Joanna Bald Site

Figure A5. Looking West from the Joanna Bald Site

Figure A9. Looking Southeast from the Joanna Bald Site

Figure A10. Looking Southwest from the Joanna Bald Site

Figure A11. Looking South from the Joanna Bald Site

At the **Bryson City** (37-173-0002) site in Swain County the NC-DAQ operates a seasonal ozone monitor and a federal equivalent method beta attenuation continuous fine particle monitor. The special purpose sulfur dioxide monitor that operated for 12 months every three years was shut down in April 2010 and will be relocated to Lenoir in 2013. The one-in-three day fine particle monitor and continuous fine particle monitor were shut down on May 28, 2011, and the beta attenuation monitor was redesignated as a State and Local Air Monitoring Station (SLAMS). Figure A12 through Figure A20 show views of the site as well as looking north, northeast, east, southeast, south, southwest, west, and northwest. The site is collocated with a meteorological tower measuring wind speed, wind direction, two-meter and 10-meter ambient temperature, relative humidity, solar radiation, and rain fall.

Figure A12. The Bryson City Ozone, Particle, and Meteorological Monitoring Site (37-173-0002)

Figure A13. Looking North from the Current Bryson Site

Figure A14. Looking Northwest from the Bryson Site

Figure A15. Looking West from the Current Bryson Site

Figure A16. Looking Northeast from the Bryson Site

Figure A17. Looking East from the Current Bryson Site

Figure A18. Looking Southeast from the Bryson Site

Figure A19. Looking Southwest from the Bryson Site

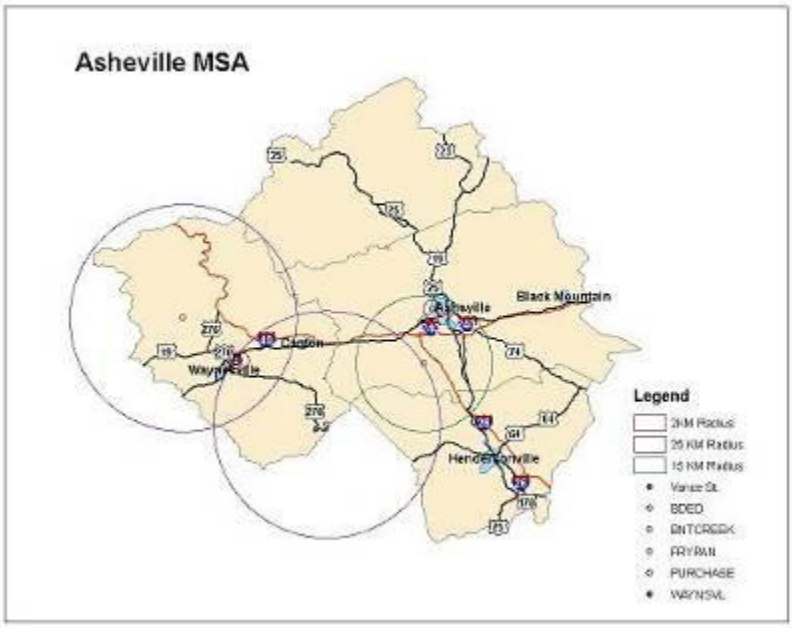
Figure A20. Looking South from the Current Bryson Site

This area was not affected by the changes to the lead monitoring requirements. This area will be affected if a longer **ozone monitoring** season is required in North Carolina. Should the ozone monitoring season be extended to March, the NC DAQ will request a waiver for March ozone monitoring for the Joanna Bald site because access to the site is limited during the winter.

This area will not be affected by the 2010 **nitrogen dioxide** monitoring requirements. The area does not have enough people to require area-wide monitors and does not have any roadways with average annual daily traffic above the threshold for near roadway monitoring. The 2010 **sulfur dioxide monitoring** requirements will not affect this area because there are no large sources of sulfur dioxide here. The changes to the **carbon dioxide monitoring** requirements will also not affect this area because there are no MSAs.

(2) The Asheville MSA

The Asheville MSA consists of four counties: Buncombe, Haywood, Henderson, and Madison. The major metropolitan areas are Asheville, Waynesville, and Hendersonville. The NC-DAQ currently operates two monitoring sites in the Asheville MSA, the Western North Carolina Regional Air Quality Agency (WNCRAQA) operates two, and both agencies jointly operate an Urban Air Toxics monitoring site. These sites are located at the Board of Education, Bent Creek, and AB Tech (Buncombe County), and the Waynesville Elementary School and Recreation Center (Haywood County). In addition to these five sites that are located in the Asheville MSA, the NC-DAQ operates two additional high-elevation sites in Haywood County located in or near Class 1 Areas: Fry Pan (in the Shining Rock Wilderness Area) and Purchase Knob (in the Great Smoky Mountains National Park). The locations of these seven monitors are shown in Figure A21.



BNTCREEK is the Bent Creek ozone site; WAYNSVL is the Waynesville Elementary School ozone site; Vance St is the Waynesville Recreation Center fine particle site; PURCHASE is the Purchase Knob ozone site; FRYPAN is the Frying Pan ozone site; BDED is the Board of Education fine particle site. The circles around the monitoring sites show scale of representation (regional - 50 Km plus for Purchase Knob and Frying Pan, urban - 4 to 50 Km for Bent Creek, and neighborhood - 0.5 to 4 Km for the others).

Figure A21. Locations of Monitoring Sites in the Asheville MSA

At the **Board of Education** site the WNCRAQA operates a one-in-three day fine particle FRM monitor, a one-in-six day collocated precision fine particle monitor, a continuous fine particle monitor, and one-in-six day SASS and URG 3000 speciation fine particle monitors. A picture of the site as well as views looking north, northeast, east, southeast, south, southwest, west, and northwest are provided in Figure A22 through Figure A30. The URG 3000 Carbon Monitor was added during the summer of 2009 to the Board of Education site as part of the chemical speciation network upgrade. The Carbon Monitor operates on a one-in-six day schedule and replaces the carbon channel on the Met One SASS monitor operating at the site. As shown in Figure A22, the Carbon Monitor is located next to the Met One SASS monitor.

Figure A22. WNCRAQA Board of Education Fine Particle Monitoring Site (37-021-0024)

Figure A23. Board of Education Site Looking North

Figure 24A. Board of Education Site Looking Northwest

Figure A25. Board of Education Site Looking West

Figure A26. Board of Education Site Looking Southwest

Figure A27. Board of Education Site Looking Northeast

Figure A28. Board of Education Site Looking East

Figure A29. Board of Education Site Looking Southeast

Figure A30. Board of Education Site Looking South

At the **Bent Creek** (37-021-0030) site the WNCRAQA operates a seasonal ozone monitor. A picture of the site as well as views looking north, northeast, east, southeast, south, southwest, west, and northwest are provided in Figure A31 through Figure A39. This site is one of two urban ozone-monitoring sites in the MSA. 40 CFR 58 Appendix D requires the Asheville MSA to have two ozone monitoring sites.

Figure A31. The Bent Creek Ozone Monitoring Site (37-021-0030)

Figure A32. Looking North from Bent Creek Site

Figure A34. Looking Northeast from the Bent Creek Site

Figure A33. Looking Northwest from the Bent Creek Site

Figure A35. Looking East from the Bent Creek Site

Figure A36. Looking West from the Bent Creek Site

Figure A38. Looking Southeast from the Bent Creek Site

Figure A37. Looking Southwest from the Bent Creek Site

Figure A39. Looking South from the Bent Creek Site

At the **AB Tech** (37-021-0035) site the WNCRAQA operates a year round air toxics volatile organic compound sampler. Samples are collected in stainless steel canisters and sent to the Toxics Protection Branch laboratory where they are analyzed for 68 compounds using the Compendium Method for Toxic Organics 15. A picture of the site as well as views looking north, northeast, east, southeast, south, southwest, west, and northwest are provided in Figure A40 through Figure A48.

Figure A40. AB Tech Urban Air Toxics Monitoring Site

Figure A41. Looking North from the AB Tech Site

Figure A42. Looking Northwest from the AB Tech Site

Figure A43. Looking West from the AB Tech Site

Figure A44. Looking Southwest from the AB Tech Site

Figure A45. Looking Northeast from the AB Tech Site

Figure A46. Looking East from the AB Tech Site

Figure A47. Looking Southeast from the AB Tech Site

Figure A48. Looking South from the AB Tech Site

At the **Waynesville Elementary School** (37-087-0008) site the NC-DAQ operates a seasonal ozone monitor. The site is shown in Figure A49. This site is one of two urban ozone monitoring sites in the MSA. 40 CFR 58 Appendix D requires the Asheville MSA to have two ozone monitoring sites. The NC-DAQ established this site at the beginning of the 2011 ozone monitoring season after being evicted by the Haywood County Health Department. They are moving to a new location and selling the building. The elementary school site is across the street from the health department.

Figure A49. The Waynesville Elementary School Ozone Monitoring Site

.

Figure A50. Aerial view of the Waynesville ozone monitoring site (A is the old site location)

The site was relocated on April 1, 2011, to Junaluska Elementary School at 2238 Asheville Road, Waynesville, NC 28786, approximately 200 meters west of the Waynesville Health Department site. An aerial view of the area is shown in Figure A50.

Figure A51, Figure A53, Figure A54, and Figure A52 provide views looking North, East, South, and West from the new site.

Figure A51. Looking North from Waynesville Ozone Site

Figure A52. Looking East from the Waynesville Ozone Site

Figure A53. Looking West from the Waynesville Ozone Site

Figure A54. Waynesville Ozone Site Looking South

At the **Waynesville Recreation Center** (37-087-0012) site the NC-DAQ operates a one-in-three day fine particle monitor. A picture of the site and views looking north, east, south, and west are provided in Figure A55 through Figure A59. This site is one of two fine particle monitoring sites in the MSA. 40 CFR 58 Appendix D requires the Asheville MSA to have only one fine particle monitoring site. The site was relocated here from the Waynesville Fire Station on January 1, 2008, because the fire station was scheduled to begin renovations in 2008 that would have disrupted monitoring operations.

Figure A55. The Waynesville Recreation Center Fine Particle Monitoring Site

Figure A56. Waynesville Recreation Center Looking North

Figure A57. Waynesville Recreation Center Looking West

Figure A58. Waynesville Recreation Center Looking East

Figure A59. Waynesville Recreation Center Looking South

At the **Frying Pan** (37-087-0035) monitoring site the NC-DAQ operates a seasonal ozone monitor. At the end of the 2011 ozone season, a new monitoring shelter was constructed at the site. A picture of the site as well as views looking north, northeast, east, southeast, south, southwest, west, and northwest are provided in Figure A60 through Figure A68. This site is located in a Class 1 area (the Shining Rock Wilderness Area) and is collocated with an Interagency Monitoring of Protected Visual Environments (IMPROVE) monitor. This monitor is a rural monitor and could become a required rural area ozone monitor if EPA requires ozone monitoring in Class 1 areas.

Figure A60. Fry Pan Ozone Monitoring Site (37-087-0035)

Figure A61. Looking North from the Fry Pan Site

Figure A62. Looking Northwest from the Fry Pan Site

Figure A63. Looking Northeast from the Fry Pan Site

Figure A64. Looking East from the Fry Pan Site

Figure A65. Looking West from the Fry Pan Site

Figure A66. Looking Southwest from the Fry Pan Site

Figure A67. Looking Southeast from the Fry Pan Site

Figure A68. Looking South from the Fry Pan Site

At the **Purchase Knob** (37-087-0036) monitoring site the NC-DAQ operates a seasonal ozone monitor. Views looking north, northeast, east, southeast, south, southwest, west, and northwest are provided in Figure A69 through Figure A76. This site is located in a Class 1 area. This monitor is a rural monitor and could become a required rural area ozone monitor if EPA requires ozone monitoring in Class 1 areas.

Figure A69. Looking North from the Purchase Knob Site

Figure A70. Looking Northeast from the Purchase Knob Site

Figure A71. Looking Northwest from the Purchase Knob Site

Figure A72. Looking West from the Purchase Knob Site

Figure A73. Looking Southwest from the Purchase Knob Site

Figure A75. Looking Southeast from the Purchase Knob Site

Figure A76. Looking South from the Purchase Knob Site

Figure A74. Looking East from the Purchase Knob Site

The December 2010 changes to the **lead monitoring** regulations impacted the Asheville MSA because Blue Ridge Paper Products, located in Haywood County, emitted over 0.5 tons of lead to the air in 2009 and 2010.[1] In 2011, the NC DAQ requested and received a waiver for lead monitoring at Blue Ridge Paper based on results of modeling. Model results indicate the maximum ambient lead concentration in the ambient air at and beyond the fence line is 0.006 micrograms per cubic meter, well below the 0.075 micrograms per cubic meter (50 % of the NAAQS) threshold for monitoring. The waiver is good for five years (until 2016).

Any new **ozone monitoring requirements** should not impact the Asheville MSA. The MSA has the number of ozone monitors required in 40 CFR 58 Appendix D for population exposure monitoring in urban areas. This area should also not be impacted by rural ozone monitoring requirements. The

[1] Data obtained from the NC-DAQ emission inventory database available through the world wide web at http://xapps.enr.state.nc.us/.

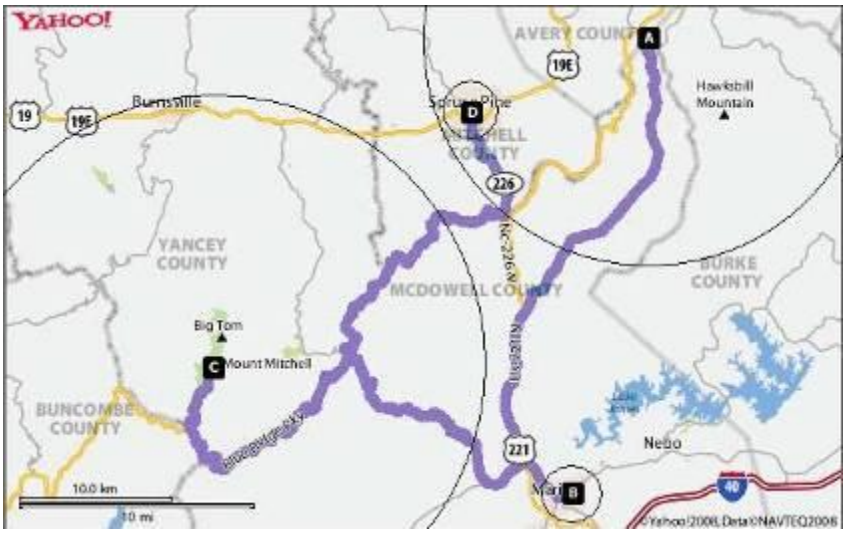
Shining Rock Wilderness Class I Area located in southern Haywood County currently has an ozone monitor (Frying Pan) and the Purchase Knob site represents the Great Smoky Mountains National Park Class I Area. The Frying Pan and Purchase Knob monitors will be affected if EPA extends the ozone monitoring season to March. The NC DAQ will request a waiver for March ozone monitoring at these sites because access to these Class 1 areas is limited during the winter.

The Asheville MSA is not impacted by the 2010 **nitrogen dioxide monitoring** requirements. It is too small to require area-wide monitors and does not have any roadways with average annual daily traffic above the threshold for near road monitoring.

The Asheville MSA will not be impacted by the 2010 **sulfur dioxide monitoring** requirements because sulfur dioxide emissions from the coal-fired power plant in the MSA were reduced after control equipment was added at the facility. The Asheville MSA will also not be impacted by the proposed changes to the **carbon dioxide monitoring** requirements because the MSA population is too small.

(3) The Eastern Mountains

The Eastern Mountains consists of 6 counties: Avery, McDowell, Mitchell, Polk, Rutherford, and Yancey. There are no major metropolitan areas in this section of the North Carolina Mountains. The Forest City Micropolitan Statistical Area is located in Rutherford County. The NC-DAQ currently operates four monitoring sites in the Eastern Mountains. These sites are located at Linville Falls in Avery County, Marion in McDowell County, Spruce Pine in Mitchell County, and at Mount Mitchell State Park in Yancey County. The locations of these four monitoring sites are shown in Figure A77.



A is the Linville Falls ozone monitoring site; B is the Marion fine particle monitoring site; C is the Mount Mitchell ozone monitoring site; D is the Spruce Pine fine particle monitoring site. The circles around the monitoring sites show the scale of representation (neighborhood – 0.5 to 4 Km for Marion and Spruce Pine, urban - 4 to 50 Km for Linville Falls, and regional - 50 Km plus for Mount Mitchell).

Figure A77. Monitoring Sites in the Eastern Mountains

At the **Linville Falls** site the NC-DAQ operates a seasonal ozone monitor. A picture of the site as well as views looking north, northeast, east, southeast, south, southwest, west and northwest are provided in Figure A78 through Figure A86. This monitoring site is located in the Linville Gorge Wilderness Area Class 1 area and is collocated with an IMPROVE monitor. This monitor is a rural monitor and could become a required rural area ozone monitor if EPA requires ozone monitoring in Class 1 areas.

Figure A78. Linville Falls Ozone and IMPROVE Monitoring Site

Figure A79. Looking North from the Linville Site

Figure A80. Looking Northwest from the Linville Site

Figure A81. Looking West from the Linville site

Figure A82. Looking Northeast from the Linville Site

Figure A83. Looking East from the Linville Site

Figure A84. Looking Southeast from the Linville Site

Figure A85. Looking Southwest from the Linville Site

Figure A86. Looking South from the Linville Site

At the **Marion** site the NC-DAQ operates a one-in-three day fine particle manual FRM monitor, a one-in six-day collocated manual FRM fine particle monitor, and a continuous fine particle monitor. Pictures of the site and views looking in each compass point direction are provided in Figure A87 to Figure A95. In 2011, the NC-DAQ expanded the industrial expansion PM_{10} network by adding a one-in-three year PM_{10} monitor to this site.

Figure A89. The Marion Fine Particle Monitoring Site

Figure A87. Looking North from the Marion Site

Figure A90. Looking Northeast from the Marion Site

Figure A88. Looking Northwest from the Marion Site

Figure A91. Looking East from the Marion Site

Figure A92. Looking West from the Marion Site

Figure A94. Looking Southeast from the Marion Site

Figure A93. Looking Southwest from the Marion Site

Figure A95. Looking South from the Marion Site

At the **Spruce Pine** site the NC-DAQ operates a one-in-three day fine particle FRM monitor. A picture of the site as well as views looking north, northeast, east, southeast, south, southwest, west and northwest are provided in Figure A97 through Figure A104.

Figure A97. The Spruce Pine Fine Particle Monitoring Site

Figure A96. Looking North from the Spruce Pine Site

Figure A98. Looking Northeast from the Spruce Pine Site

Figure A99. Looking Northwest from the Spruce Pine Site

Figure A100. Looking West from the Spruce Pine Site

Figure A101. Spruce Pine Site Looking Southwest

At the **Mount Mitchell** site the NC-DAQ operates a seasonal ozone monitor. A picture of the site as well as views looking north, east, south, and west are provided in Figure A105 through Figure A109. This site is located at the Mount Mitchell State Park Visitor Center.

Figure A102. Looking East from the Spruce Pine Site

Figure A103. Spruce Pine Site Looking Southeast

Figure A104. Looking South from the Spruce Pine Site

Figure A105. The Mount Mitchell Ozone Monitoring Site

Figure A106. Looking North from the Mount Mitchell Site

Figure A108. Looking East from the Mount Mitchell Site

Figure A107. Looking West from the Mount Mitchell Site

Figure A109. Looking South from the Mount Mitchell Site

The new **ozone monitoring** requirements will impact this part of the Eastern Mountains because of the longer ozone monitoring season. The NC DAQ will request a waiver for March ozone monitoring at the Mount Mitchell and Linville Falls sites because the sites are difficult if not impossible to reach during the winter. The area does not have any MSAs so it will not be impacted by any changes to the 40 CFR 58 Appendix D minimum monitoring requirements for population exposure monitoring in urban areas. This area should also not be impacted by rural ozone monitoring requirements. The Linville Gorge Wilderness Class I Area (located in Burke and McDowell Counties) currently has an ozone monitor (Linville Falls).

The 2010 **lead monitoring**, 2010 **nitrogen dioxide monitoring** and 2010 **sulfur dioxide monitoring** requirements did not result in any monitoring changes in the Eastern Mountains area. This area does not have NCore monitoring stations or facilities that emit over 0.5 tons of lead per year. It is too small to require area-wide monitors for nitrogen dioxide and does not have any roadways with average annual daily traffic above the threshold for near roadway monitoring. There are not enough people or emissions to trigger a Population Weighted Emission Index (PWEI) sulfur dioxide monitor. This area will also not be impacted by the changes to the **carbon dioxide monitoring** requirements because the population is too small.

Appendix A.1 Annual Network Site Review Forms for 2011

Joanna Bald in Joyce Kilmer-Slickrock Wilderness Area

Bryson City

Bent Creek in Asheville (operated by the WNCRAQA)

Board of Education in Asheville (operated by the WNCRAQA)

AB Tech Air Toxics Site (operated by WNCRAQA & the Toxics Protection Branch)

Waynesville Health Center

Waynesville Recreation Center

Fry Pan in the Shining Rock Wilderness Area

Purchase Knob in the Great Smoky Mountains National Park

Linville Falls in the Linville Gorge Wilderness Area

Marion

Spruce Pine

Mount Mitchell in the Mount Mitchell State Park

Site Review Form Calendar Year 2011

Site Information

Region ARO	**Site Name** Joanna Bald	**AQS Site # 37-**75**-** 0001
Street Address- National Forest Road 423 Spur		**City** Robbinsville
Urban Area Not in an Urban Area	**Core-based Statistical Area Asheville, NC**	

Enter Exact		**Method of Measuring**	
Longitude -83.795541	**Latitude** 35.257898		
In Decimal Degrees	In Decimal Degrees	**Other (explain)**	**Explanation: Google Earth**

Elevation Above/below Mean Sea Level (in meters) **1435**

Name of nearest road to inlet probe National Forest Road ADT ____ Year ____

Comments: No count available. Estimate less than 10 cars per day.

Distance of site to nearest major road (m) 14323.00 Direction from site to nearest major road NW

Name of nearest major road Snow Bird Road (Road #1115) ADT 1100 Year 2009

Comments: _____

Site located near electrical substation/high voltage power lines? Yes ☐ No ☒

Distance of site to nearest railroad track (m) _____ Direction to RR ___ ☒NA

Distance of site to nearest power pole w/transformer (m) ____ Direction ___

Distance between site and drip line of water tower (m) _____ Direction from site to water tower _____ ☒NA

Explain any sources of potential bias; include cultivated fields, loose bulk storage, stacks, vents, railroad tracks, construction activities, fast food restaurants, and swimming pools.

0

ANSWER ALL APPLICABLE QUESTIONS:

Parameters	Monitoring Objective	Scale	Site Type
☐ NA	☒ General/Background	☐ Micro	☐ SLAMS
☐ SO_2 (NAAQS)	☐ Highest Concentration	☐ Middle	☐ NCORE
☐ SO_2 (trace-level)	☐ Max O3 Concentration	☐ Neighborhood	☒ SPM
☐ NO_x (NAAQS)	☐ Population Exposure	☐ Urban	☐ SPM/OPN
☐ $HSNO_y$	☐ Source Oriented	☒ Regional	☐ NONREGULATORY
☒ O_3	☐ Transport		
☐ NH_3	☐ Upwind Background		
☐ Hydrocarbon	☐ Welfare Related Impacts		
☐ Air Toxics			
☐ HSCO (Not Micro)			
☐ CO (trace-level)			

Probe inlet height (from ground) 2-15 m? Yes ☒ No ☐ Give actual measured height from ground (meters) ____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☒ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☒

Is probe > 20 m from the nearest tree drip line? Yes ☒ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐

*Distance from probe to tree (m) _____ Direction from probe to tree ___

*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☒

*Identify obstacle ____ Distance from probe inlet (m) _____ Direction from probe inlet to obstacle ___

*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) 14323 Direction from probe to nearest traffic lane NW

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ CO (Micro Only)	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Welfare Related Impacts ____	☐ Micro____	☐ SLAMS _____ ☐ SPM_____ ☐ SPM/OPN____ ☐ NONREGULATORY

Probe inlet height (from ground) 2.5 - 3.5 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) ____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet to nearest intersection > 10 m? Yes ☐ No ☐
Distance of probe inlet to nearest traffic lane 2 - 10 m? Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ NO_y (trace-level)	☐ General/Background____ ☐ Highest Concentration____ ☐ Max O3 Concentration_ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Upwind Background____ ☐ Welfare Related Impacts____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☐ Urban_____ ☐ Regional____	☐ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ SPM/OPN____ ☐ NONREGULATORY

Probe inlet height (from ground) 10-15 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) ____

Distance of probe inlet from horizontal and/or vertical supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) ____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ NO_2 (Near Road only) ☐ CO (Near Road only)	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Welfare Related Impacts _____	☐ Micro_____	☐ SLAMS _____ ☐ SPM_____ ☐ NONREGULATORY ____

Probe inlet height (from ground) 2-15 m? Yes ☐ No ☐ Give actual measured height from ground (meters) ____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☒ NA Air flow > 200 L/min ☐ PM10 ☐ TSP ☐ Pb	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Background_____ ☐ Transport_____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☐ Urban_____ ☐ Regional____	☐ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m ____ ☐ 2-7m ____ ☐ 7-15 m ____ ☐ > 15 m____

Actual measured distance from probe inlet to ground (meters) ____

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance between collocated PM-10, TSP or Pb sampler inlets ~ 2 to 4 m? Yes ☐ No ☐ NA ☐

Actual measured distance between collocated probes (meters) ____

Distance between any high volume inlet and any other high or low volume inlet ≥ 2 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA Air flow < 200 L/min ☐ PM2.5 ☐ PM10 ☐ PM10-2.5 ☐ PM10 Lead (PB) ☐ PM2.5 Cont. (TEOM) ☐ PM2.5 Cont. (BAM) ☐ PM2.5 Spec. (SASS) ☐ PM2.5 Spec. (URG) ☐ PM2.5 Cont. Spec.	☐ General/Background____ ☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Upwind Background____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☐ Urban_____ ☐ Regional____	☐ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m ____ ☐ 2-7m ____ ☐ 7-15 m ____ ☐ > 15 m____
Actual measured distance from probe inlet to ground (meters) ____

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☐ No ☐____

Distance between inlets of any low volume monitor and any other low volume monitor at the site = 1 m or greater?	Yes ☐ No ☐ NA ☐
Distance between all low volume monitor inlets and any Hi-Volume PM-10 or TSP inlet = 2 m or greater?	Yes ☐ No ☐ NA ☐
Are collocated PM2.5 Monitors (Two FRMs, FRM & BAM, FRM & TEOM, BAM & TEOM) Located at Site?	*Yes ☐ (answer *'d questions) No ☐ NA ☐
*Distance between collocated PM 2.5 sampler inlets = 1 to 4 m?	Yes ☐ No ☐ Give actual (meters) ____
*Are collocated PM2.5 sampler inlets within 1 m vertically of each other?	Yes ☐ No ☐ Give actual (meters) ____
Is an URG 3000 monitor collocated with a SASS monitor at the site?	*Yes ☐ (answer *'d questions) No ☐ NA ☐
* Distance between collocated speciation sampler inlets = 1 to 4 m?	Yes ☐ No ☐ Give actual (meters) ____
* Are collocated speciation sampler inlets within 1 m vertically of each other?	Yes ☐ No ☐ Give actual (meters) ____
Is a low-volume PM10 monitor collocated with a PM2.5 monitor at the site to measure PM10-2.5?	*Yes ☐ (answer *'d questions) No ☐ NA ☐
*Distance between collocated PM10 and PM2.5 inlets for PM10-2.5 samplers = 1 to 4 m?	Yes ☐ No ☐
*Are collocated PM10 and PM2.5 sampler inlets within 1 m vertically of each other?	Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

RECOMMENDATIONS:

1) Maintain current site status? Yes ☒ *No ☐ (answer *'d questions)
*2) Change monitoring objective? Yes ☐ (enter new objective _____) No ☐-
*3) Change scale of representativeness? Yes ☐ (enter new scale _____) No ☐
*4) Relocate site? Yes ☐ No ☐

Comments: _____

Reviewer Sheila Ledford Date December 29, 2011

Ambient Monitoring Coordinator Steve Ensley Date 1/31/12

Revised 2012-05-04

Site Review Form Calendar Year 2011

Site Information

Region ARO	**Site Name** Bryson City	**AQS Site # 37-**173-0002
Street Address-30 Recreation Park		**City**Bryson City
Urban Area Not in an Urban Area	**Core-based Statistical Area** None	

Enter Exact		**Method of Measuring**	
Longitude -83.442133	**Latitude** 35.434767		
In Decimal Degrees	In Decimal Degrees	**Other (explain)**	**Explanation: Google Earth**

Elevation Above/below Mean Sea Level (in meters) 559

Name of nearest road to inlet probe West Deep Creek Road (Road #1337) ADT 1100 Year 2009

Comments: _____

Distance of site to nearest major road (m) 416.00 Direction from site to nearest major road SSE

Name of nearest major road US 19 ADT 6000 Year 2009

Comments: & HWY 74 (1696 m S of phrobe), ADT 10,000, Year 2009

Site located near electrical substation/high voltage power lines? Yes ☐ No ☒

Distance of site to nearest railroad track	(m) 240 Direction to RR SSW ☐NA
Distance of site to nearest power pole w/transformer	(m) ____ Direction ___

Distance between site and drip line of water tower (m) _____ Direction from site to water tower _____ ☒NA

Explain any sources of potential bias; include cultivated fields, loose bulk storage, stacks, vents, railroad tracks, construction activities, fast food restaurants, and swimming pools.

_____

ANSWER ALL APPLICABLE QUESTIONS:

Parameters	Monitoring Objective	Scale	Site Type
☐ NA	☒ General/Background_____	☐ Micro_____	☒ SLAMS _____
☐ SO_2 (NAAQS)	☐ Highest Concentration_____	☐ Middle_____	☐ NCORE_____
☐ SO_2 (trace-level)	☐ Max O3 Concentration_____	☒ Neighborhood_____	☐ SPM_____
☐ NO_x (NAAQS)	☐ Population Exposure_____	☐ Urban_____	☐ SPM/OPN_____
☐ $HSNO_y$	☐ Source Oriented_____	☐ Regional_____	☐ NONREGULATORY_____
☒ O_3	☐ Transport_____		
☐ NH_3	☐ Upwind Background_____		
☐ Hydrocarbon	☐ Welfare Related Impacts		
☐ Air Toxics	_____		
☐ HSCO (Not Micro)			
☐ CO (trace-level)			

Probe inlet height (from ground) 2-15 m? Yes ☒ No ☐ Give actual measured height from ground (meters) ____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☒ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☒ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☒ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐

*Distance from probe to tree (m) _____ Direction from probe to tree ___

*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☒

*Identify obstacle ____ Distance from probe inlet (m) _____ Direction from probe inlet to obstacle ___

*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) 236 Direction from probe to nearest traffic lane SE

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ CO (Micro Only)	☐ Highest Concentration_____ ☐ Population Exposure_____ ☐ Source Oriented_____ ☐ Transport_____ ☐ Welfare Related Impacts _____	☐ Micro_____	☐ SLAMS _____ ☐ SPM_____ ☐ SPM/OPN_____ ☐ NONREGULATORY

Probe inlet height (from ground) 2.5 - 3.5 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) _____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) _____

Distance of probe inlet to nearest intersection > 10 m? Yes ☐ No ☐
Distance of probe inlet to nearest traffic lane 2 - 10 m? Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ NO_y (trace-level)	☐ General/Background_____ ☐ Highest Concentration_____ ☐ Max O3 Concentration_ ☐ Population Exposure_____ ☐ Source Oriented_____ ☐ Transport_____ ☐ Upwind Background_____ ☐ Welfare Related Impacts _____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood_____ ☐ Urban_____ ☐ Regional_____	☐ SLAMS _____ ☐ NCORE_____ ☐ SPM_____ ☐ SPM/OPN_____ ☐ NONREGULATORY

Probe inlet height (from ground) 10-15 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) _____

Distance of probe inlet from horizontal and/or vertical supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) _____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ NO_2 (Near Road only) ☐ CO (Near Road only)	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Welfare Related Impacts _____	☐ Micro_____	☐ SLAMS _____ ☐ SPM_____ ☐ NONREGULATORY ____

Probe inlet height (from ground) 2-15 m? Yes ☐ No ☐ Give actual measured height from ground (meters) ____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) ____ Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☒ NA Air flow > 200 L/min ☐ PM10 ☐ TSP ☐ Pb	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Background_____ ☐ Transport_____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☐ Urban_____ ☐ Regional____	☐ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m ____ ☐ 2-7m ____ ☐ 7-15 m ____ ☐ > 15 m____

Actual measured distance from probe inlet to ground (meters) ____

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance between collocated PM-10, TSP or Pb sampler inlets = 2 to 4 m? Yes ☐ No ☐ NA ☐

Actual measured distance between collocated probes (meters) ____

Distance between any high volume inlet and any other high or low volume inlet ≥ 2 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) ____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☐ NA Air flow < 200 L/min ☐ PM2.5 ☐ PM10 ☐ PM10-2.5 ☐ PM10 Lead (PB) ☐ PM2.5 Cont. (TEOM) ☒ PM2.5 Cont. (BAM) ☐ PM2.5 Spec. (SASS) ☐ PM2.5 Spec. (URG) ☐ PM2.5 Cont. Spec.	☐ General/Background____ ☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Upwind Background____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☐ Urban_____ ☐ Regional____	☐ SLAMS _____ ☐ NCORE____ ☒ SPM_BAM ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m ____ ☒ 2-7m ____ ☐ 7-15 m ____ ☐ > 15 m____
Actual measured distance from probe inlet to ground (meters) ____

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☒ No ☐____

Distance between inlets of any low volume monitor and any other low volume monitor at the site = 1 m or greater? Yes ☐ No ☐ NA ☒

Distance between all low volume monitor inlets and any Hi-Volume PM-10 or TSP inlet = 2 m or greater? Yes ☐ No ☐ NA ☒

Are collocated PM2.5 Monitors (Two FRMs, FRM & BAM, FRM & TEOM, BAM & TEOM) Located at Site? *Yes ☐ (answer *'d questions) No ☒ NA ☐

*Distance between collocated PM 2.5 sampler inlets = 1 to 4 m? Yes ☐ No ☐ Give actual (meters) ____

*Are collocated PM2.5 sampler inlets within 1 m vertically of each other? Yes ☐ No ☐ Give actual (meters) ____

Is an URG 3000 monitor collocated with a SASS monitor at the site? *Yes ☐ (answer *'d questions) No ☒ NA ☐

* Distance between collocated speciation sampler inlets = 1 to 4 m? Yes ☐ No ☐ Give actual (meters) ____

* Are collocated speciation sampler inlets within 1 m vertically of each other? Yes ☐ No ☐ Give actual (meters) ____

Is a low-volume PM10 monitor collocated with a PM2.5 monitor at the site to measure PM10-2.5? *Yes ☐ (answer *'d questions) No ☒ NA ☐

*Distance between collocated PM10 and PM2.5 inlets for PM10-2.5 samplers = 1 to 4 m? Yes ☐ No ☐

*Are collocated PM10 and PM2.5 sampler inlets within 1 m vertically of each other? Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☒ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐

*Distance from probe to tree (m) _____ Direction from probe to tree ___

*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☒

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___

*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

RECOMMENDATIONS:

1) Maintain current site status? Yes ☒ *No ☐ (answer *'d questions)

*2) Change monitoring objective? Yes ☐ (enter new objective _____) No ☐-

*3) Change scale of representativeness? Yes ☐ (enter new scale _____) No ☐

*4) Relocate site? Yes ☐ No ☐

Comments: _____

Reviewer Sheila Ledford DateDecember 29, 2011

Ambient Monitoring Coordinator Steve Ensley DateJanuary 31, 2012

Revised 2012-05-04

Site Review Form Calendar Year 2011

Site Information

Region WNC	**Site Name** Bent Creek	**AQS Site # 37-021-0030**
Street Address-Brevard Rd./ Hwy. 191		**City** Ashville
Urban Area ASHEVILLE	**Core-based Statistical Area Asheville, NC**	

Enter Exact		**Method of Measuring**
Longitude -82.597172	**Latitude** 35.505286	
In Decimal Degrees	In Decimal Degrees	___ **Explanation: Google Earth**

Elevation Above/below Mean Sea Level (in meters) ___

Name of nearest road to inlet probe Brevard Road (Hwy. 191) ADT <16000 Year 2010

Comments: ___

Distance of site to nearest major road (m) 100.00 Direction from site to nearest major road E

Name of nearest major road Brevard Road (Hwy. 191) ADT 16000 Year 2010

Comments: ___

Site located near electrical substation/high voltage power lines? Yes ☐ No ☒

Distance of site to nearest railroad track	(m) 8000 Direction to RR NE ☐NA
Distance of site to nearest power pole w/transformer	(m) 60 Direction SE

Distance between site and drip line of water tower (m) ___ Direction from site to water tower ___ ☒NA

Explain any sources of potential bias; include cultivated fields, loose bulk storage, stacks, vents, railroad tracks, construction activities, fast food restaurants, and swimming pools.

0

ANSWER ALL APPLICABLE QUESTIONS:

Parameters	Monitoring Objective	Scale	Site Type
☐ NA	☐ General/Background ___	☐ Micro ___	☒ SLAMS ___
☐ SO_2 (NAAQS)	☒ Highest Concentration ___	☐ Middle ___	☐ NCORE ___
☐ SO_2 (trace-level)	☐ Max O3 Concentration ___	☐ Neighborhood ___	☐ SPM ___
☐ NO_x (NAAQS)	☐ Population Exposure ___	☒ Urban ___	☐ SPM/OPN ___
☐ $HSNO_y$	☐ Source Oriented ___	☐ Regional ___	☐ NONREGULATORY ___
☒ O_3	☐ Transport ___		
☐ NH_3	☐ Upwind Background ___		
☐ Hydrocarbon	☐ Welfare Related Impacts		
☐ Air Toxics	___		
☐ HSCO (Not Micro)			
☐ CO (trace-level)			

Probe inlet height (from ground) 2-15 m? Yes ☒ No ☐ Give actual measured height from ground (meters) 7

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☒ No ☐
Actual measured distance from probe to supporting structure (meters) 2

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☒

Is probe > 20 m from the nearest tree drip line? Yes ☒ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐

*Distance from probe to tree (m) ___ Direction from probe to tree ___

*Height of tree (m) ___

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☒

*Identify obstacle ___ Distance from probe inlet (m) ___ Direction from probe inlet to obstacle ___

*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) 100 Direction from probe to nearest traffic lane E

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ CO (Micro Only)	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Welfare Related Impacts ____	☐ Micro____	☐ SLAMS _____ ☐ SPM_____ ☐ SPM/OPN____ ☐ NONREGULATORY

Probe inlet height (from ground) 2.5 - 3.5 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) ____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet to nearest intersection > 10 m? Yes ☐ No ☐
Distance of probe inlet to nearest traffic lane 2 - 10 m? Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ NO_y (trace-level)	☐ General/Background____ ☐ Highest Concentration____ ☐ Max O3 Concentration_ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Upwind Background____ ☐ Welfare Related Impacts____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☐ Urban_____ ☐ Regional____	☐ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ SPM/OPN____ ☐ NONREGULATORY

Probe inlet height (from ground) 10-15 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) ____

Distance of probe inlet from horizontal and/or vertical supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ NO_2 (Near Road only) ☐ CO (Near Road only)	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Welfare Related Impacts _____	☐ Micro_____	☐ SLAMS _____ ☐ SPM_____ ☐ NONREGULATORY ____

Probe inlet height (from ground) 2-15 m? Yes ☐ No ☐ Give actual measured height from ground (meters) ____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☒ NA Air flow > 200 L/min ☐ PM10 ☐ TSP ☐ Pb	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Background_____ ☐ Transport_____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☐ Urban_____ ☐ Regional____	☐ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m ____ ☐ 2-7m ____ ☐ 7-15 m ____ ☐ > 15 m____

Actual measured distance from probe inlet to ground (meters) ____

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance between collocated PM-10, TSP or Pb sampler inlets = 2 to 4 m? Yes ☐ No ☐ NA ☐

Actual measured distance between collocated probes (meters) ____

Distance between any high volume inlet and any other high or low volume inlet ≥ 2 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA Air flow < 200 L/min ☐ PM2.5 ☐ PM10 ☐ PM10-2.5 ☐ PM10 Lead (PB) ☐ PM2.5 Cont. (TEOM) ☐ PM2.5 Cont. (BAM) ☐ PM2.5 Spec. (SASS) ☐ PM2.5 Spec. (URG) ☐ PM2.5 Cont. Spec.	☐ General/Background____ ☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Upwind Background____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☐ Urban_____ ☐ Regional____	☐ SLAMS _____ ☐ NCORE___ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m ____ ☐ 2-7m ____ ☐ 7-15 m ____ ☐ > 15 m____
Actual measured distance from probe inlet to ground (meters) ____

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☐ No ☐ ____

Distance between inlets of any low volume monitor and any other low volume monitor at the site = 1 m or greater?	Yes ☐ No ☐ NA ☐
Distance between all low volume monitor inlets and any Hi-Volume PM-10 or TSP inlet = 2 m or greater?	Yes ☐ No ☐ NA ☐
Are collocated PM2.5 Monitors (Two FRMs, FRM & BAM, FRM & TEOM, BAM & TEOM) Located at Site?	*Yes ☐ (answer *'d questions) No ☐ NA ☐
*Distance between collocated PM 2.5 sampler inlets = 1 to 4 m?	Yes ☐ No ☐ Give actual (meters) ____
*Are collocated PM2.5 sampler inlets within 1 m vertically of each other?	Yes ☐ No ☐ Give actual (meters) ____

Is an URG 3000 monitor collocated with a SASS monitor at the site? *Yes ☐ (answer *'d questions) No ☐ NA ☐
* Distance between collocated speciation sampler inlets = 1 to 4 m? Yes ☐ No ☐ Give actual (meters) ____
* Are collocated speciation sampler inlets within 1 m vertically of each other? Yes ☐ No ☐ Give actual (meters) ____

Is a low-volume PM10 monitor collocated with a PM2.5 monitor at the site to measure PM10-2.5?	*Yes ☐ (answer *'d questions) No ☐ NA ☐
*Distance between collocated PM10 and PM2.5 inlets for PM10-2.5 samplers = 1 to 4 m?	Yes ☐ No ☐
*Are collocated PM10 and PM2.5 sampler inlets within 1 m vertically of each other?	Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

RECOMMENDATIONS:

1) Maintain current site status? Yes ☒ *No ☐ (answer *'d questions)
*2) Change monitoring objective? Yes ☐ (enter new objective _____) No ☐-
*3) Change scale of representativeness? Yes ☐ (enter new scale _____) No ☐
*4) Relocate site? Yes ☐ No ☐

Comments: _____

Reviewer ____Kevin Lance_____Date12-22-2011_____

Ambient Monitoring Coordinator _____Date_____

Revised 2011-12-29

SITEREV2011BENTCREEK.DOCX Joette Steger

Site Review Form Calendar Year 2011

Site Information

Region WNC	**Site Name** Board of Education	**AQS Site # 37-021-0034**
Street Address 175 Bingham Road		**City** Asheville
Urban Area ASHEVILLE	**Core-based Statistical Area Asheville, NC**	

Enter Exact		**Method of Measuring**
Longitude -82.58325	**Latitude** 35.607369	
In Decimal Degrees	In Decimal Degrees	___ **Explanation: Google Earth**

Elevation Above/below Mean Sea Level (in meters) ___

Name of nearest road to inlet probe Bingham Road ADT 2200 Year 2010

Comments: ___

Distance of site to nearest major road (m) 100.00 Direction from site to nearest major road W

Name of nearest major road Bingham Road ADT 2200 Year 2010

Comments: ___

Site located near electrical substation/high voltage power lines? Yes ☐ No ☒

Distance of site to nearest railroad track	(m) 500 Direction to RR ___ ☐NA
Distance of site to nearest power pole w/transformer	(m) 200 Direction W

Distance between site and drip line of water tower (m) ___ Direction from site to water tower ___ ☒NA

Explain any sources of potential bias; include cultivated fields, loose bulk storage, stacks, vents, railroad tracks, construction activities, fast food restaurants, and swimming pools.

___

ANSWER ALL APPLICABLE QUESTIONS:

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ SO_2 (NAAQS) ☐ SO_2 (trace-level) ☐ NO_x (NAAQS) ☐ $HSNO_y$ ☐ O_3 ☐ NH_3 ☐ Hydrocarbon ☐ Air Toxics ☐ HSCO (Not Micro) ☐ CO (trace-level)	☐ General/Background ___ ☐ Highest Concentration ___ ☐ Max O3 Concentration ___ ☐ Population Exposure ___ ☐ Source Oriented ___ ☐ Transport ___ ☐ Upwind Background ___ ☐ Welfare Related Impacts ___	☐ Micro ___ ☐ Middle ___ ☐ Neighborhood ___ ☐ Urban ___ ☐ Regional ___	☐ SLAMS ___ ☐ NCORE ___ ☐ SPM ___ ☐ SPM/OPN ___ ☐ NONREGULATORY ___

Probe inlet height (from ground) 2-15 m? Yes ☐ No ☐ Give actual measured height from ground (meters) ___

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ___

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐

*Distance from probe to tree (m) ___ Direction from probe to tree ___

*Height of tree (m) ___

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ___ Distance from probe inlet (m) ___ Direction from probe inlet to obstacle ___

*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) ___ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ CO (Micro Only)	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Welfare Related Impacts ____	☐ Micro____	☐ SLAMS _____ ☐ SPM_____ ☐ SPM/OPN____ ☐ NONREGULATORY

Probe inlet height (from ground) 2.5 - 3.5 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) ____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet to nearest intersection > 10 m? Yes ☐ No ☐
Distance of probe inlet to nearest traffic lane 2 - 10 m? Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ NO_y (trace-level)	☐ General/Background____ ☐ Highest Concentration____ ☐ Max O3 Concentration_ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Upwind Background____ ☐ Welfare Related Impacts____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☐ Urban_____ ☐ Regional____	☐ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ SPM/OPN____ ☐ NONREGULATORY

Probe inlet height (from ground) 10-15 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) ____

Distance of probe inlet from horizontal and/or vertical supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ NO_2 (Near Road only) ☐ CO (Near Road only)	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Welfare Related Impacts _____	☐ Micro_____	☐ SLAMS _____ ☐ SPM_____ ☐ NONREGULATORY ____

Probe inlet height (from ground) 2-15 m? Yes ☐ No ☐ Give actual measured height from ground (meters) ____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) ____ Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☒ NA Air flow > 200 L/min ☐ PM10 ☐ TSP ☐ Pb	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Background_____ ☐ Transport_____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☐ Urban_____ ☐ Regional____	☐ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m ____ ☐ 2-7m ____ ☐ 7-15 m ____ ☐ > 15 m____

Actual measured distance from probe inlet to ground (meters) ____

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance between collocated PM-10, TSP or Pb sampler inlets = 2 to 4 m? Yes ☐ No ☐ NA ☐

Actual measured distance between collocated probes (meters) ____

Distance between any high volume inlet and any other high or low volume inlet ≥ 2 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) ____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☐ NA Air flow < 200 L/min ☒ PM2.5 ☐ PM10 ☐ PM10-2.5 ☐ PM10 Lead (PB) ☒ PM2.5 Cont. (TEOM) ☐ PM2.5 Cont. (BAM) ☒ PM2.5 Spec. (SASS) ☒ PM2.5 Spec. (URG) ☐ PM2.5 Cont. Spec.	☐ General/Background____ ☐ Highest Concentration____ ☒ Population Exposure_All____ ☐ Source Oriented____ ☐ Transport_____ ☐ Upwind Background____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☒ Neighborhood____ ☐ Urban_____ ☐ Regional____	☒ SLAMS _____ ☐ NCORE___ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m ____ ☐ 2-7m ____ ☒ 7-15 m ____ ☐ > 15 m____
Actual measured distance from probe inlet to ground (meters) __10__

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☒ No ☐ ____

Distance between inlets of any low volume monitor and any other low volume monitor at the site = 1 m or greater?	Yes ☒ No ☐ NA ☐
Distance between all low volume monitor inlets and any Hi-Volume PM-10 or TSP inlet = 2 m or greater?	Yes ☐ No ☐ NA ☒
Are collocated PM2.5 Monitors (Two FRMs, FRM & BAM, FRM & TEOM, BAM & TEOM) Located at Site?	*Yes ☒ (answer *'d questions) No ☐ NA ☐
*Distance between collocated PM 2.5 sampler inlets = 1 to 4 m?	Yes ☒ No ☐ Give actual (meters) ____
*Are collocated PM2.5 sampler inlets within 1 m vertically of each other?	Yes ☒ No ☐ Give actual (meters) ____

Is an URG 3000 monitor collocated with a SASS monitor at the site? *Yes ☒ (answer *'d questions) No ☐ NA ☐
* Distance between collocated speciation sampler inlets = 1 to 4 m? Yes ☒ No ☐ Give actual (meters) ____
* Are collocated speciation sampler inlets within 1 m vertically of each other? Yes ☒ No ☐ Give actual (meters) ____

Is a low-volume PM10 monitor collocated with a PM2.5 monitor at the site to measure PM10-2.5?	*Yes ☐ (answer *'d questions) No ☒ NA ☐
*Distance between collocated PM10 and PM2.5 inlets for PM10-2.5 samplers = 1 to 4 m?	Yes ☐ No ☐
*Are collocated PM10 and PM2.5 sampler inlets within 1 m vertically of each other?	Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☒ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☒

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) 100 Direction from probe to nearest traffic lane W

RECOMMENDATIONS:

1) Maintain current site status? Yes ☒ *No ☐ (answer *'d questions)
*2) Change monitoring objective? Yes ☐ (enter new objective _____) No ☐
*3) Change scale of representativeness? Yes ☐ (enter new scale _____) No ☐
*4) Relocate site? Yes ☐ No ☐

Comments: _____

Reviewer Kevin Lance Date 12-22-2011

Ambient Monitoring Coordinator _____ Date _____

Revised 2011-12-29

SITEREV2011BOARDOFED (2).DOCX Joette Steger Digitally signed by Joette Steger DN: cn=Joette Steger, o=Ambient Monitoring Section, ou=Projects and Procedures Branch, email=Joette.Steger@ncdenr.gov, c=US Date: 2011.12.29 09:09:47 -05'00' 4

Site Review Form Calendar Year 2011

Site Information

Region ARO	**Site Name** AB Tech	**AQS Site #** 37- 021 - 0035
Street Address- AB Technical Community College		**City** Asheville
Urban Area ASHEVILLE	**Core-based Statistical Area Asheville, NC**	

Enter Exact		**Method of Measuring**
Longitude 35.572222	**Latitude** -82.558611	
In Decimal Degrees	In Decimal Degrees	___ **Explanation: Google Earth**
Elevation Above/below Mean Sea Level (in meters)		646

Name of nearest road to inlet probe Haith Dr. ADT _____ Year latest available_____

Comments: Cul-de-sac 73 m. from probe, measured by Google Earth_____

Distance of site to nearest major road (m) 359.00 Direction from site to nearest major road E

Name of nearest major road Victoria Rd. ADT _____ Year latest available_____

Comments: _____

Site located near electrical substation/high voltage power lines? Yes ☐ No ☒

Distance of site to nearest railroad track	(m) 336 Direction to RR WSW ☐NA
Distance of site to nearest power pole w/transformer	(m) 190 Direction N

Distance between site and drip line of water tower (m) _____ Direction from site to water tower _____ ☒NA

Explain any sources of potential bias; include cultivated fields, loose bulk storage, stacks, vents, railroad tracks, construction activities, fast food restaurants, and swimming pools.

_____

ANSWER ALL APPLICABLE QUESTIONS.

Parameters	Monitoring Objective	Scale	Site Type
☐NA ☐ SO_2 (NAAQS) ☐ SO_2 (trace-level) ☐ NO_x (NAAQS) ☐ $HSNO_y$ ☐ O_3 ☐ NH_3 ☐ Hydrocarbon ☒ Air Toxics ☐ HSCO (Not Micro) ☐ CO (trace-level)	☐General/Background_____ ☐Highest Concentration_____ ☐Max O3 Concentration_____ ☒Population Exposure_____ ☐Source Oriented_____ ☐Transport_____ ☐Upwind Background_____ ☐Welfare Related Impacts _____	☐Micro_____ ☐Middle_____ ☐Neighborhood_____ ☒Urban_____ ☐Regional_____	☐SLAMS _____ ☐NCORE_____ ☐SPM_____ ☐SPM/OPN_____ ☒NONREGULATORY_____

Probe inlet height (from ground) 2-15 m? Yes ☒ No ☐ Give actual measured height from ground (meters) _____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☒ No ☐

Actual measured distance from probe to supporting structure (meters) _____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☒ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☒ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐

*Distance from probe to tree (m) _____ Direction from probe to tree ___

*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☒ (answer *'d questions) No ☐

*Identify obstacle tree Distance from probe inlet (m) 30 Direction from probe inlet to obstacle ENE

*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☒ No ☐

Distance of probe to nearest traffic lane (m) 359 Direction from probe to nearest traffic lane E

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☐ NA ☐ CO (Micro Only)	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Welfare Related Impacts ____	☐ Micro____	☐ SLAMS _____ ☐ SPM_____ ☐ SPM/OPN____ ☐ NONREGULATORY

Probe inlet height (from ground) 2.5 - 3.5 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) ____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet to nearest intersection > 10 m? Yes ☐ No ☐
Distance of probe inlet to nearest traffic lane 2 - 10 m? Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☐ NA ☐ NO_y (trace-level)	☐ General/Background____ ☐ Highest Concentration____ ☐ Max O3 Concentration_ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Upwind Background____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☐ Urban_____ ☐ Regional____	☐ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ SPM/OPN____ ☐ NONREGULATORY

Probe inlet height (from ground) 10-15 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) ____

Distance of probe inlet from horizontal and/or vertical supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☐ NA ☐ NO_2 (Near Road only) ☐ CO (Near Road only)	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Welfare Related Impacts _____	☐ Micro_____	☐ SLAMS _____ ☐ SPM_____ ☐ NONREGULATORY ____

Probe inlet height (from ground) 2-15 m? Yes ☐ No ☐ Give actual measured height from ground (meters) ____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☐ NA Air flow > 200 L/min ☐ PM10 ☐ TSP ☐ Pb	☐ Highest Concentration_____ ☐ Population Exposure_____ ☐ Source Oriented_____ ☐ Background_____ ☐ Transport_____ ☐ Welfare Related Impacts _____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood_____ ☐ Urban_____ ☐ Regional_____	☐ SLAMS _____ ☐ NCORE_____ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m _____ ☐ 2-7m _____ ☐ 7-15 m _____ ☐ > 15 m_____

Actual measured distance from probe inlet to ground (meters) ____

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance between collocated PM-10, TSP or Pb sampler inlets = 2 to 4 m? Yes ☐ No ☐ NA ☐

Actual measured distance between collocated probes (meters) ____

Distance between any high volume inlet and any other high or low volume inlet ≥ 2 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☐ NA Air flow < 200 L/min ☐ PM2.5 ☐ PM10 ☐ PM10-2.5 ☐ PM10 Lead (PB) ☐ PM2.5 Cont. (TEOM) ☐ PM2.5 Cont. (BAM) ☐ PM2.5 Spec. (SASS) ☐ PM2.5 Spec. (URG) ☐ PM2.5 Cont. Spec.	☐ General/Background____ ☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Upwind Background____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☐ Urban_____ ☐ Regional____	☐ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m ____ ☐ 2-7m ____ ☐ 7-15 m ____ ☐ > 15 m____
Actual measured distance from probe inlet to ground (meters) ___2.4__

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☐ No ☐____

Distance between inlets of any low volume monitor and any other low volume monitor at the site = 1 m or greater?	Yes ☐ No ☐ NA ☒
Distance between all low volume monitor inlets and any Hi-Volume PM-10 or TSP inlet = 2 m or greater?	Yes ☐ No ☐ NA ☒
Are collocated PM2.5 Monitors (Two FRMs, FRM & BAM, FRM & TEOM, BAM & TEOM) Located at Site?	*Yes ☐ (answer *'d questions) No ☐ NA ☒
*Distance between collocated PM 2.5 sampler inlets = 1 to 4 m?	Yes ☐ No ☐ Give actual (meters) _____
*Are collocated PM2.5 sampler inlets within 1 m vertically of each other?	Yes ☐ No ☐ Give actual (meters) _____

Is an URG 3000 monitor collocated with a SASS monitor at the site? *Yes ☐ (answer *'d questions) No ☐ NA ☐
* Distance between collocated speciation sampler inlets = 1 to 4 m? Yes ☐ No ☐ Give actual (meters) _____
* Are collocated speciation sampler inlets within 1 m vertically of each other? Yes ☐ No ☐ Give actual (meters) _____

Is a low-volume PM10 monitor collocated with a PM2.5 monitor at the site to measure PM10-2.5?	*Yes ☐ (answer *'d questions) No ☐ NA ☐
*Distance between collocated PM10 and PM2.5 inlets for PM10-2.5 samplers = 1 to 4 m?	Yes ☐ No ☐
*Are collocated PM10 and PM2.5 sampler inlets within 1 m vertically of each other?	Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

RECOMMENDATIONS:

1) Maintain current site status? Yes ☒ *No ☐ (answer *'d questions)
*2) Change monitoring objective? Yes ☐ (enter new objective _____) No ☐-
*3) Change scale of representativeness? Yes ☐ (enter new scale) No ☐
*4) Relocate site? Yes ☐ No ☐

Comments:_____

Reviewer _____Date_____

Ambient Monitoring Coordinator _____Date_____

Revised 2012-05-09

Site Review Form Calendar Year 2011

Site Information

Region ARO	**Site Name** Waynesville School	**AQS Site #** 37- 087 - 0008
Street Address 2236 Asheville Road		**City** Waynesville
Urban Area Not in an Urban Area	**Core-based Statistical Area Asheville, NC**	

Enter Exact		**Method of Measuring**	
Longitude -82.963539	**Latitude** 35.507116		
In Decimal Degrees	In Decimal Degrees	**Other (explain)**	**Explanation: Google Earth**

Elevation Above/below Mean Sea Level (in meters) 792

Name of nearest road to inlet probe Un-named elementary school drive ADT 0 Year ____

Comments: ____

Distance of site to nearest major road (m) 152.00 Direction from site to nearest major road SW

Name of nearest major road Asheville Road ADT 11000 Year 2008

Comments: ____

Site located near electrical substation/high voltage power lines? Yes ☐ No ☒

Distance of site to nearest railroad track	(m) 800 Direction to RR E ☐NA
Distance of site to nearest power pole w/transformer	(m) ____ Direction ____

Distance between site and drip line of water tower (m) ____ Direction from site to water tower ____ ☒NA

Explain any sources of potential bias; include cultivated fields, loose bulk storage, stacks, vents, railroad tracks, construction activities, fast food restaurants, and swimming pools.

____

ANSWER ALL APPLICABLE QUESTIONS:

Parameters	Monitoring Objective	Scale	Site Type
☐ NA	☐ General/Background ____	☐ Micro ____	☒ SLAMS ____
☐ SO_2 (NAAQS)	☐ Highest Concentration ____	☐ Middle ____	☐ NCORE ____
☐ SO_2 (trace-level)	☐ Max O3 Concentration ____	☒ Neighborhood ____	☐ SPM ____
☐ NO_x (NAAQS)	☒ Population Exposure ____	☐ Urban ____	☐ SPM/OPN ____
☐ $HSNO_y$	☐ Source Oriented ____	☐ Regional ____	☐ NONREGULATORY ____
☒ O_3	☐ Transport ____		
☐ NH_3	☐ Upwind Background ____		
☐ Hydrocarbon	☐ Welfare Related Impacts		
☐ Air Toxics	____		
☐ HSCO (Not Micro)			
☐ CO (trace-level)			

Probe inlet height (from ground) 2-15 m? Yes ☒ No ☐ Give actual measured height from ground (meters) ____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☒ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☒

Is probe > 20 m from the nearest tree drip line? Yes ☒ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐

*Distance from probe to tree (m) ____ Direction from probe to tree ____

*Height of tree (m) ____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☒

*Identify obstacle ____ Distance from probe inlet (m) ____ Direction from probe inlet to obstacle ____

*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) 100 Direction from probe to nearest traffic lane ENE

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ CO (Micro Only)	☐ Highest Concentration_____ ☐ Population Exposure_____ ☐ Source Oriented_____ ☐ Transport_____ ☐ Welfare Related Impacts _____	☐ Micro_____	☐ SLAMS _____ ☐ SPM_____ ☐ SPM/OPN_____ ☐ NONREGULATORY

Probe inlet height (from ground) 2.5 - 3.5 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) _____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) _____

Distance of probe inlet to nearest intersection > 10 m? Yes ☐ No ☐
Distance of probe inlet to nearest traffic lane 2 - 10 m? Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ NO_y (trace-level)	☐ General/Background_____ ☐ Highest Concentration_____ ☐ Max O3 Concentration_ ☐ Population Exposure_____ ☐ Source Oriented_____ ☐ Transport_____ ☐ Upwind Background_____ ☐ Welfare Related Impacts _____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood_____ ☐ Urban_____ ☐ Regional_____	☐ SLAMS _____ ☐ NCORE_____ ☐ SPM_____ ☐ SPM/OPN_____ ☐ NONREGULATORY

Probe inlet height (from ground) 10-15 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) _____

Distance of probe inlet from horizontal and/or vertical supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) _____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ NO_2 (Near Road only) ☐ CO (Near Road only)	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Welfare Related Impacts _____	☐ Micro_____	☐ SLAMS _____ ☐ SPM_____ ☐ NONREGULATORY ____

Probe inlet height (from ground) 2-15 m? Yes ☐ No ☐ Give actual measured height from ground (meters) ____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) ____ Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☒ NA Air flow > 200 L/min ☐ PM10 ☐ TSP ☐ Pb	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Background_____ ☐ Transport_____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☐ Urban_____ ☐ Regional____	☐ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m ____ ☐ 2-7m ____ ☐ 7-15 m ____ ☐ > 15 m____

Actual measured distance from probe inlet to ground (meters) ____

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance between collocated PM-10, TSP or Pb sampler inlets = 2 to 4 m? Yes ☐ No ☐ NA ☐

Actual measured distance between collocated probes (meters) ____

Distance between any high volume inlet and any other high or low volume inlet ≥ 2 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) ____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA Air flow < 200 L/min ☐ PM2.5 ☐ PM10 ☐ PM10-2.5 ☐ PM10 Lead (PB) ☐ PM2.5 Cont. (TEOM) ☐ PM2.5 Cont. (BAM) ☐ PM2.5 Spec. (SASS) ☐ PM2.5 Spec. (URG) ☐ PM2.5 Cont. Spec.	☐ General/Background____ ☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Upwind Background____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☐ Urban_____ ☐ Regional____	☐ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m ____ ☐ 2-7m ____ ☐ 7-15 m ____ ☐ > 15 m____
Actual measured distance from probe inlet to ground (meters) ____

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☐ No ☐____

Distance between inlets of any low volume monitor and any other low volume monitor at the site = 1 m or greater? Yes ☐ No ☐ NA ☐
Distance between all low volume monitor inlets and any Hi-Volume PM-10 or TSP inlet = 2 m or greater? Yes ☐ No ☐ NA ☐

Are collocated PM2.5 Monitors (Two FRMs, FRM & BAM, FRM & TEOM, BAM & TEOM) Located at Site? *Yes ☐ (answer *'d questions) No ☐ NA ☐
*Distance between collocated PM 2.5 sampler inlets = 1 to 4 m? Yes ☐ No ☐ Give actual (meters) ____
*Are collocated PM2.5 sampler inlets within 1 m vertically of each other? Yes ☐ No ☐ Give actual (meters) ____

Is an URG 3000 monitor collocated with a SASS monitor at the site? *Yes ☐ (answer *'d questions) No ☐ NA ☐
* Distance between collocated speciation sampler inlets = 1 to 4 m? Yes ☐ No ☐ Give actual (meters) ____
* Are collocated speciation sampler inlets within 1 m vertically of each other? Yes ☐ No ☐ Give actual (meters) ____

Is a low-volume PM10 monitor collocated with a PM2.5 monitor at the site to measure PM10-2.5? *Yes ☐ (answer *'d questions) No ☐ NA ☐

*Distance between collocated PM10 and PM2.5 inlets for PM10-2.5 samplers = 1 to 4 m? Yes ☐ No ☐
*Are collocated PM10 and PM2.5 sampler inlets within 1 m vertically of each other? Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

RECOMMENDATIONS:

1) Maintain current site status? Yes ☒ *No ☐ (answer *'d questions)
*2) Change monitoring objective? Yes ☐ (enter new objective _____) No ☐-
*3) Change scale of representativeness? Yes ☐ (enter new scale _____) No ☐
*4) Relocate site? Yes ☐ No ☐

Comments: _____

Reviewer Steve Ensley Date January 24, 2012

Ambient Monitoring Coordinator Steve Ensley Date 1/24/12

Revised 2012-03-06

Site Review Form Calendar Year 2011

Site Information

Region ARO	**Site Name** Waynesville Rec Center	**AQS Site #** 37- 087 - 0012
Street Address 550 Vance Street		**City** Waynesville
Urban Area Not in an Urban Area	**Core-based Statistical Area Asheville, NC**	

Enter Exact		**Method of Measuring**	
Longitude -82.978241	**Latitude** 35.505693		
In Decimal Degrees	In Decimal Degrees	**Other (explain)**	**Explanation: Google Earth**

Elevation Above/below Mean Sea Level (in meters) 798

Name of nearest road to inlet probe Howell Mill Road ADT 4700 Year latest available 2008

Comments: _____

Distance of site to nearest major road (m) 725.00 Direction from site to nearest major road NNW

Name of nearest major road HWY 74 (Great Smoky Mountains Expressway) ADT 30000 Year 2008

Comments: _____

Site located near electrical substation/high voltage power lines? Yes ☐ No ☒

Distance of site to nearest railroad track	(m) 290 Direction to RR SSE ☐NA
Distance of site to nearest power pole w/transformer	(m) ____ Direction ___

Distance between site and drip line of water tower (m) _____ Direction from site to water tower _____ ☒NA

Explain any sources of potential bias; include cultivated fields, loose bulk storage, stacks, vents, railroad tracks, construction activities, fast food restaurants, and swimming pools.

Site is located on the roof of an indoor swimming pool. In addition, Howell Mill road slated to be widened in the near future.

ANSWER ALL APPLICABLE QUESTIONS:

Parameters	Monitoring Objective	Scale	Site Type
☒ NA	☐General/Background_____	☐Micro_____	☐SLAMS _____
☐ SO_2 (NAAQS)	☐Highest Concentration_____	☐Middle_____	☐NCORE_____
☐ SO_2 (trace-level)	☐Max O3 Concentration_____	☐Neighborhood_____	☐SPM_____
☐ NO_x (NAAQS)	☐Population Exposure_____	☐Urban_____	☐SPM/OPN_____
☐ $HSNO_y$	☐Source Oriented_____	☐Regional_____	☐NONREGULATORY_____
☐ O_3	☐Transport_____		
☐ NH_3	☐Upwind Background_____		
☐ Hydrocarbon	☐Welfare Related Impacts		
☐ Air Toxics	_____		
☐ HSCO (Not Micro)			
☐ CO (trace-level)			

Probe inlet height (from ground) 2-15 m? Yes ☐ No ☐ Give actual measured height from ground (meters) ____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐

*Distance from probe to tree (m) _____ Direction from probe to tree ___

*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____ Direction from probe inlet to obstacle ___

*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) ____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ CO (Micro Only)	☐ Highest Concentration_____ ☐ Population Exposure_____ ☐ Source Oriented_____ ☐ Transport_____ ☐ Welfare Related Impacts _____	☐ Micro_____	☐ SLAMS _____ ☐ SPM_____ ☐ SPM/OPN_____ ☐ NONREGULATORY

Probe inlet height (from ground) 2.5 - 3.5 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) _____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) _____

Distance of probe inlet to nearest intersection > 10 m? Yes ☐ No ☐
Distance of probe inlet to nearest traffic lane 2 - 10 m? Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ NO_y (trace-level)	☐ General/Background_____ ☐ Highest Concentration_____ ☐ Max O3 Concentration_ ☐ Population Exposure_____ ☐ Source Oriented_____ ☐ Transport_____ ☐ Upwind Background_____ ☐ Welfare Related Impacts _____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood_____ ☐ Urban_____ ☐ Regional_____	☐ SLAMS _____ ☐ NCORE_____ ☐ SPM_____ ☐ SPM/OPN_____ ☐ NONREGULATORY

Probe inlet height (from ground) 10-15 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) _____

Distance of probe inlet from horizontal and/or vertical supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) _____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ NO_2 (Near Road only) ☐ CO (Near Road only)	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Welfare Related Impacts _____	☐ Micro_____	☐ SLAMS _____ ☐ SPM_____ ☐ NONREGULATORY ____

Probe inlet height (from ground) 2-15 m? Yes ☐ No ☐ Give actual measured height from ground (meters) ____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) ____ Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☒ NA Air flow > 200 L/min ☐ PM10 ☐ TSP ☐ Pb	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Background_____ ☐ Transport_____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☐ Urban_____ ☐ Regional____	☐ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m ____ ☐ 2-7m ____ ☐ 7-15 m ____ ☐ > 15 m____

Actual measured distance from probe inlet to ground (meters) ____

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance between collocated PM-10, TSP or Pb sampler inlets = 2 to 4 m? Yes ☐ No ☐ NA ☐

Actual measured distance between collocated probes (meters) ____

Distance between any high volume inlet and any other high or low volume inlet ≥ 2 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) ____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☐ NA Air flow < 200 L/min ☒ PM2.5 ☐ PM10 ☐ PM10-2.5 ☐ PM10 Lead (PB) ☐ PM2.5 Cont. (TEOM) ☐ PM2.5 Cont. (BAM) ☐ PM2.5 Spec. (SASS) ☐ PM2.5 Spec. (URG) ☐ PM2.5 Cont. Spec.	☐ General/Background____ ☐ Highest Concentration____ ☒ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Upwind Background____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☒ Neighborhood____ ☐ Urban_____ ☐ Regional____	☒ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m ____ ☐ 2-7m ____ ☒ 7-15 m ____ ☐ > 15 m____
Actual measured distance from probe inlet to ground (meters) ____

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☒ No ☐____

Distance between inlets of any low volume monitor and any other low volume monitor at the site = 1 m or greater? Yes ☐ No ☐ NA ☒

Distance between all low volume monitor inlets and any Hi-Volume PM-10 or TSP inlet = 2 m or greater? Yes ☐ No ☐ NA ☒

Are collocated PM2.5 Monitors (Two FRMs, FRM & BAM, FRM & TEOM, BAM & TEOM) Located at Site? *Yes ☐ (answer *'d questions) No ☒ NA ☐

*Distance between collocated PM 2.5 sampler inlets = 1 to 4 m? Yes ☐ No ☐ Give actual (meters) ____

*Are collocated PM2.5 sampler inlets within 1 m vertically of each other? Yes ☐ No ☐ Give actual (meters) ____

Is an URG 3000 monitor collocated with a SASS monitor at the site? *Yes ☐ (answer *'d questions) No ☐ NA ☒

* Distance between collocated speciation sampler inlets = 1 to 4 m? Yes ☐ No ☐ Give actual (meters) ____

* Are collocated speciation sampler inlets within 1 m vertically of each other? Yes ☐ No ☐ Give actual (meters) ____

Is a low-volume PM10 monitor collocated with a PM2.5 monitor at the site to measure PM10-2.5? *Yes ☐ (answer *'d questions) No ☒ NA ☐

*Distance between collocated PM10 and PM2.5 inlets for PM10-2.5 samplers = 1 to 4 m? Yes ☐ No ☐

*Are collocated PM10 and PM2.5 sampler inlets within 1 m vertically of each other? Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☒ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐

*Distance from probe to tree (m) _____ Direction from probe to tree ___

*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☒

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___

*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) 96 Direction from probe to nearest traffic lane N

RECOMMENDATIONS:

1) Maintain current site status? Yes ☒ *No ☐ (answer *'d questions)

*2) Change monitoring objective? Yes ☐ (enter new objective _____) No ☐-

*3) Change scale of representativeness? Yes ☐ (enter new scale _____) No ☐

*4) Relocate site? Yes ☐ No ☐

Comments: _____

Reviewer Steve Ensley Date January 17, 2012

Ambient Monitoring Coordinator Steve Ensley Date January 17, 2012

Revised 2012-03-06

Site Review Form Calendar Year 2011

Site Information

Region ARO	**Site Name** Frying Pan	**AQS Site #** 37- 087 - 0035
Street Address- 750 Frying Pan Road		**City** Canton
Urban Area Not in an Urban Area	**Core-based Statistical Area** None	

Enter Exact		**Method of Measuring**	
Longitude -82.774441	**Latitude** 35.393654		
In Decimal Degrees	In Decimal Degrees	**Other (explain)**	**Explanation: Google Earth**

Elevation Above/below Mean Sea Level (in meters) 1619

Name of nearest road to inlet probe Blue Ridge Parkway ADT 871 Year 2006

Comments: _____

Distance of site to nearest major road (m) 1287.00 Direction from site to nearest major road W

Name of nearest major road Blue Ridge Parkway ADT 871 Year 2006

Comments: In a remot area. No major roads nearby.

Site located near electrical substation/high voltage power lines? Yes ☐ No ☒

Distance of site to nearest railroad track (m) _____ Direction to RR ___ ☒NA

Distance of site to nearest power pole w/transformer (m) ____ Direction ___

Distance between site and drip line of water tower (m) _____ Direction from site to water tower _____ ☒NA

Explain any sources of potential bias; include cultivated fields, loose bulk storage, stacks, vents, railroad tracks, construction activities, fast food restaurants, and swimming pools.

_____

ANSWER ALL APPLICABLE QUESTIONS:

Parameters	Monitoring Objective	Scale	Site Type
☐ NA	☒ General/Background_____	☐ Micro_____	☐ SLAMS _____
☐ SO_2 (NAAQS)	☐ Highest Concentration_____	☐ Middle_____	☐ NCORE_____
☐ SO_2 (trace-level)	☐ Max O3 Concentration_____	☐ Neighborhood_____	☒ SPM_____
☐ NO_x (NAAQS)	☐ Population Exposure_____	☐ Urban_____	☐ SPM/OPN_____
☐ $HSNO_y$	☐ Source Oriented_____	☒ Regional_____	☐ NONREGULATORY_____
☒ O_3	☐ Transport_____		
☐ NH_3	☐ Upwind Background_____		
☐ Hydrocarbon	☐ Welfare Related Impacts		
☐ Air Toxics	_____		
☐ HSCO (Not Micro)			
☐ CO (trace-level)			

Probe inlet height (from ground) 2-15 m? Yes ☐ No ☐ Give actual measured height from ground (meters) ____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☒ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☒ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☒ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐

*Distance from probe to tree (m) _____ Direction from probe to tree ___

*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☒

*Identify obstacle ____ Distance from probe inlet (m) _____ Direction from probe inlet to obstacle ___

*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) 1287 Direction from probe to nearest traffic lane W

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ CO (Micro Only)	☐ Highest Concentration_____ ☐ Population Exposure_____ ☐ Source Oriented_____ ☐ Transport_____ ☐ Welfare Related Impacts _____	☐ Micro_____	☐ SLAMS _____ ☐ SPM_____ ☐ SPM/OPN_____ ☐ NONREGULATORY

Probe inlet height (from ground) 2.5 - 3.5 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) _____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) _____

Distance of probe inlet to nearest intersection > 10 m? Yes ☐ No ☐
Distance of probe inlet to nearest traffic lane 2 - 10 m? Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ NO_y (trace-level)	☐ General/Background_____ ☐ Highest Concentration_____ ☐ Max O3 Concentration_ ☐ Population Exposure_____ ☐ Source Oriented_____ ☐ Transport_____ ☐ Upwind Background_____ ☐ Welfare Related Impacts _____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood_____ ☐ Urban_____ ☐ Regional_____	☐ SLAMS _____ ☐ NCORE_____ ☐ SPM_____ ☐ SPM/OPN_____ ☐ NONREGULATORY

Probe inlet height (from ground) 10-15 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) _____

Distance of probe inlet from horizontal and/or vertical supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) _____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ NO_2 (Near Road only) ☐ CO (Near Road only)	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Welfare Related Impacts _____	☐ Micro_____	☐ SLAMS _____ ☐ SPM_____ ☐ NONREGULATORY ____

Probe inlet height (from ground) 2-15 m? Yes ☐ No ☐ Give actual measured height from ground (meters) ____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) ____ Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☒ NA Air flow > 200 L/min ☐ PM10 ☐ TSP ☐ Pb	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Background_____ ☐ Transport_____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☐ Urban_____ ☐ Regional____	☐ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m ____ ☐ 2-7m ____ ☐ 7-15 m ____ ☐ > 15 m____

Actual measured distance from probe inlet to ground (meters) ____

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance between collocated PM-10, TSP or Pb sampler inlets = 2 to 4 m? Yes ☐ No ☐ NA ☐

Actual measured distance between collocated probes (meters) ____

Distance between any high volume inlet and any other high or low volume inlet ≥ 2 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) ____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA Air flow < 200 L/min ☐ PM2.5 ☐ PM10 ☐ PM10-2.5 ☐ PM10 Lead (PB) ☐ PM2.5 Cont. (TEOM) ☐ PM2.5 Cont. (BAM) ☐ PM2.5 Spec. (SASS) ☐ PM2.5 Spec. (URG) ☐ PM2.5 Cont. Spec.	☐ General/Background____ ☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Upwind Background____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☐ Urban_____ ☐ Regional____	☐ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m ____ ☐ 2-7m ____ ☐ 7-15 m ____ ☐ > 15 m____
Actual measured distance from probe inlet to ground (meters) ____

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☐ No ☐____

Distance between inlets of any low volume monitor and any other low volume monitor at the site = 1 m or greater?	Yes ☐ No ☐ NA ☐
Distance between all low volume monitor inlets and any Hi-Volume PM-10 or TSP inlet = 2 m or greater?	Yes ☐ No ☐ NA ☐
Are collocated PM2.5 Monitors (Two FRMs, FRM & BAM, FRM & TEOM, BAM & TEOM) Located at Site?	*Yes ☐ (answer *'d questions) No ☐ NA ☐
*Distance between collocated PM 2.5 sampler inlets = 1 to 4 m?	Yes ☐ No ☐ Give actual (meters) ____
*Are collocated PM2.5 sampler inlets within 1 m vertically of each other?	Yes ☐ No ☐ Give actual (meters) ____
Is an URG 3000 monitor collocated with a SASS monitor at the site?	*Yes ☐ (answer *'d questions) No ☐ NA ☐
* Distance between collocated speciation sampler inlets = 1 to 4 m?	Yes ☐ No ☐ Give actual (meters) ____
* Are collocated speciation sampler inlets within 1 m vertically of each other?	Yes ☐ No ☐ Give actual (meters) ____
Is a low-volume PM10 monitor collocated with a PM2.5 monitor at the site to measure PM10-2.5?	*Yes ☐ (answer *'d questions) No ☐ NA ☐
*Distance between collocated PM10 and PM2.5 inlets for PM10-2.5 samplers = 1 to 4 m?	Yes ☐ No ☐
*Are collocated PM10 and PM2.5 sampler inlets within 1 m vertically of each other?	Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

RECOMMENDATIONS:

1) Maintain current site status? Yes ☒ *No ☐ (answer *'d questions)
*2) Change monitoring objective? Yes ☐ (enter new objective _____) No ☐-
*3) Change scale of representativeness? Yes ☐ (enter new scale _____) No ☐
*4) Relocate site? Yes ☐ No ☐

Comments: A new building was installed at the end of 2011.

Reviewer Steve Ensley Date January 19, 2012

Ambient Monitoring Coordinator Steve Ensley Date January 19, 2012

Revised 2012-05-04

Site Review Form Calendar Year 2011

Site Information

Region ARO	**Site Name** Purchase Knob	**AQS Site # 37-**87-0036
Street Address-h		**City** Waynesville
Urban Area Not in an Urban Area	**Core-based Statistical Area** None	

Enter Exact		**Method of Measuring**	
Longitude -83	**Latitude** 35		
In Decimal Degrees	In Decimal Degrees	**GPS**	**Explanation: Handheld GPS**

Elevation Above/below Mean Sea Level (in meters) **1495**

Name of nearest road to inlet probe Purchase Knob Road ADT 20 Year Est.

Comments: Traffic is minimal, no traffic count available

Distance of site to nearest major road (m) 5462.00 Direction from site to nearest major road SE

Name of nearest major road US-276 (Jonathan Creek Road) ADT 9000 Year 2007

Comments: _____

Site located near electrical substation/high voltage power lines? Yes ☐ No ☒

Distance of site to nearest railroad track (m) _____ Direction to RR ___ ☒NA

Distance of site to nearest power pole w/transformer (m) ____ Direction ___

Distance between site and drip line of water tower (m) _____ Direction from site to water tower _____ ☒NA

Explain any sources of potential bias; include cultivated fields, loose bulk storage, stacks, vents, railroad tracks, construction activities, fast food restaurants, and swimming pools.

0

ANSWER ALL APPLICABLE QUESTIONS:

Parameters	Monitoring Objective	Scale	Site Type
☐ NA	☒ General/Background	☐ Micro	☒ SLAMS
☐ SO_2 (NAAQS)	☐ Highest Concentration	☐ Middle	☐ NCORE
☐ SO_2 (trace-level)	☐ Max O3 Concentration	☐ Neighborhood	☐ SPM
☐ NO_x (NAAQS)	☐ Population Exposure	☐ Urban	☐ SPM/OPN
☐ $HSNO_y$	☐ Source Oriented	☒ Regional	☐ NONREGULATORY
☒ O_3	☐ Transport		
☐ NH_3	☐ Upwind Background		
☐ Hydrocarbon	☐ Welfare Related Impacts		
☐ Air Toxics	_____		
☐ HSCO (Not Micro)			
☐ CO (trace-level)			

Probe inlet height (from ground) 2-15 m? Yes ☒ No ☐ Give actual measured height from ground (meters) 5

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☒ No ☐

Actual measured distance from probe to supporting structure (meters) 2

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☒

Is probe > 20 m from the nearest tree drip line? Yes ☒ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐

*Distance from probe to tree (m) _____ Direction from probe to tree ___

*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☒

*Identify obstacle ____ Distance from probe inlet (m) _____ Direction from probe inlet to obstacle ___

*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) 5462 Direction from probe to nearest traffic lane SE

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ CO (Micro Only)	☐ Highest Concentration_____ ☐ Population Exposure_____ ☐ Source Oriented_____ ☐ Transport_____ ☐ Welfare Related Impacts _____	☐ Micro_____	☐ SLAMS _____ ☐ SPM_____ ☐ SPM/OPN_____ ☐ NONREGULATORY

Probe inlet height (from ground) 2.5 - 3.5 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) _____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) _____

Distance of probe inlet to nearest intersection > 10 m? Yes ☐ No ☐
Distance of probe inlet to nearest traffic lane 2 - 10 m? Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ NO_y (trace-level)	☐ General/Background_____ ☐ Highest Concentration_____ ☐ Max O3 Concentration_ ☐ Population Exposure_____ ☐ Source Oriented_____ ☐ Transport_____ ☐ Upwind Background_____ ☐ Welfare Related Impacts _____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood_____ ☐ Urban_____ ☐ Regional_____	☐ SLAMS _____ ☐ NCORE_____ ☐ SPM_____ ☐ SPM/OPN_____ ☐ NONREGULATORY

Probe inlet height (from ground) 10-15 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) _____

Distance of probe inlet from horizontal and/or vertical supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) _____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ NO_2 (Near Road only) ☐ CO (Near Road only)	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Welfare Related Impacts _____	☐ Micro_____	☐ SLAMS _____ ☐ SPM_____ ☐ NONREGULATORY ____

Probe inlet height (from ground) 2-15 m? Yes ☐ No ☐ Give actual measured height from ground (meters) ____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) ____ Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☒ NA Air flow > 200 L/min ☐ PM10 ☐ TSP ☐ Pb	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Background_____ ☐ Transport_____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☐ Urban_____ ☐ Regional____	☐ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m ____ ☐ 2-7m ____ ☐ 7-15 m ____ ☐ > 15 m____

Actual measured distance from probe inlet to ground (meters) ____

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance between collocated PM-10, TSP or Pb sampler inlets = 2 to 4 m? Yes ☐ No ☐ NA ☐

Actual measured distance between collocated probes (meters) ____

Distance between any high volume inlet and any other high or low volume inlet ≥ 2 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) ____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA Air flow < 200 L/min ☐ PM2.5 ☐ PM10 ☐ PM10-2.5 ☐ PM10 Lead (PB) ☐ PM2.5 Cont. (TEOM) ☐ PM2.5 Cont. (BAM) ☐ PM2.5 Spec. (SASS) ☐ PM2.5 Spec. (URG) ☐ PM2.5 Cont. Spec.	☐ General/Background____ ☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Upwind Background____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☐ Urban_____ ☐ Regional____	☐ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m ____ ☐ 2-7m ____ ☐ 7-15 m ____ ☐ > 15 m____
Actual measured distance from probe inlet to ground (meters) ____

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☐ No ☐____

Distance between inlets of any low volume monitor and any other low volume monitor at the site = 1 m or greater? Yes ☐ No ☐ NA ☐
Distance between all low volume monitor inlets and any Hi-Volume PM-10 or TSP inlet = 2 m or greater? Yes ☐ No ☐ NA ☐

Are collocated PM2.5 Monitors (Two FRMs, FRM & BAM, FRM & TEOM, BAM & TEOM) Located at Site? *Yes ☐ (answer *'d questions) No ☐ NA ☐
*Distance between collocated PM 2.5 sampler inlets = 1 to 4 m? Yes ☐ No ☐ Give actual (meters) ____
*Are collocated PM2.5 sampler inlets within 1 m vertically of each other? Yes ☐ No ☐ Give actual (meters) ____

Is an URG 3000 monitor collocated with a SASS monitor at the site? *Yes ☐ (answer *'d questions) No ☐ NA ☐
* Distance between collocated speciation sampler inlets = 1 to 4 m? Yes ☐ No ☐ Give actual (meters) ____
* Are collocated speciation sampler inlets within 1 m vertically of each other? Yes ☐ No ☐ Give actual (meters) ____

Is a low-volume PM10 monitor collocated with a PM2.5 monitor at the site to measure PM10-2.5? *Yes ☐ (answer *'d questions) No ☐ NA ☐

*Distance between collocated PM10 and PM2.5 inlets for PM10-2.5 samplers = 1 to 4 m? Yes ☐ No ☐
*Are collocated PM10 and PM2.5 sampler inlets within 1 m vertically of each other? Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

RECOMMENDATIONS:

1) Maintain current site status? Yes ☒ *No ☐ (answer *'d questions)
*2) Change monitoring objective? Yes ☐ (enter new objective _____) No ☐-
*3) Change scale of representativeness? Yes ☐ (enter new scale _____) No ☐
*4) Relocate site? Yes ☐ No ☐

Comments: _____

Reviewer Sheila Ledford Date December 29, 2011

Ambient Monitoring Coordinator _____ Date_____

Revised 2012-03-02

Site Review Form Calendar Year 2011

Site Information

Region ARO	**Site Name** Linville Falls	**AQS Site #** 37- 011 - 0002
Street Address- Linville Falls Road		**City** Linville Falls
Urban Area Not in an Urban Area	**Core-based Statistical Area** None	

Enter Exact		**Method of Measuring**	
Longitude -81.932998	**Latitude** 35.972299		
In Decimal Degrees	In Decimal Degrees	**Other (explain)**	**Explanation: Google Earth**
Elevation Above/below Mean Sea Level (in meters)		987	

Name of nearest road to inlet probe Linville Falls Road ADT _____ Year _____

Comments: _____

Distance of site to nearest major road (m) 270.00 Direction from site to nearest major road NNW

Name of nearest major road Blue Ridge Parkway ADT 2700 Year 2006

Comments: _____

Site located near electrical substation/high voltage power lines? Yes ☐ No ☒

Distance of site to nearest railroad track (m) _____ Direction to RR ___ ☒NA

Distance of site to nearest power pole w/transformer (m) _____ Direction ___

Distance between site and drip line of water tower (m) _____ Direction from site to water tower _____ ☒NA

Explain any sources of potential bias; include cultivated fields, loose bulk storage, stacks, vents, railroad tracks, construction activities, fast food restaurants, and swimming pools.

_____

ANSWER ALL APPLICABLE QUESTIONS:

Parameters	Monitoring Objective	Scale	Site Type
☐ NA	☒ General/Background_____	☐ Micro_____	☒ SLAMS _____
☐ SO_2 (NAAQS)	☐ Highest Concentration_____	☐ Middle_____	☐ NCORE_____
☐ SO_2 (trace-level)	☐ Max O3 Concentration_____	☐ Neighborhood_____	☐ SPM_____
☐ NO_x (NAAQS)	☐ Population Exposure_____	☒ Urban_____	☐ SPM/OPN_____
☐ $HSNO_y$	☐ Source Oriented_____	☐ Regional_____	☐ NONREGULATORY_____
☒ O_3	☐ Transport_____		
☐ NH_3	☐ Upwind Background_____		
☐ Hydrocarbon	☐ Welfare Related Impacts		
☐ Air Toxics	_____		
☐ HSCO (Not Micro)			
☐ CO (trace-level)			

Probe inlet height (from ground) 2-15 m? Yes ☒ No ☐ Give actual measured height from ground (meters) _____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☒ No ☐

Actual measured distance from probe to supporting structure (meters) _____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☒ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☒ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐

*Distance from probe to tree (m) _____ Direction from probe to tree ___

*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☒ (answer *'d questions) No ☐

*Identify obstacle tree Distance from probe inlet (m) 26 Direction from probe inlet to obstacle NE

*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☒

Distance of probe to nearest traffic lane (m) 86 Direction from probe to nearest traffic lane E

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ CO (Micro Only)	☐ Highest Concentration_____ ☐ Population Exposure_____ ☐ Source Oriented_____ ☐ Transport_____ ☐ Welfare Related Impacts _____	☐ Micro_____	☐ SLAMS _____ ☐ SPM_____ ☐ SPM/OPN_____ ☐ NONREGULATORY

Probe inlet height (from ground) 2.5 - 3.5 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) _____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) _____

Distance of probe inlet to nearest intersection > 10 m? Yes ☐ No ☐
Distance of probe inlet to nearest traffic lane 2 - 10 m? Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ NO_y (trace-level)	☐ General/Background_____ ☐ Highest Concentration_____ ☐ Max O3 Concentration_ ☐ Population Exposure_____ ☐ Source Oriented_____ ☐ Transport_____ ☐ Upwind Background_____ ☐ Welfare Related Impacts _____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood_____ ☐ Urban_____ ☐ Regional_____	☐ SLAMS _____ ☐ NCORE_____ ☐ SPM_____ ☐ SPM/OPN_____ ☐ NONREGULATORY

Probe inlet height (from ground) 10-15 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) _____

Distance of probe inlet from horizontal and/or vertical supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) _____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ NO_2 (Near Road only) ☐ CO (Near Road only)	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Welfare Related Impacts _____	☐ Micro_____	☐ SLAMS _____ ☐ SPM_____ ☐ NONREGULATORY ____

Probe inlet height (from ground) 2-15 m? Yes ☐ No ☐ Give actual measured height from ground (meters) ____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) ____ Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☒ NA Air flow > 200 L/min ☐ PM10 ☐ TSP ☐ Pb	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Background_____ ☐ Transport_____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☐ Urban_____ ☐ Regional____	☐ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m ____ ☐ 2-7m ____ ☐ 7-15 m ____ ☐ > 15 m____

Actual measured distance from probe inlet to ground (meters) ____

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance between collocated PM-10, TSP or Pb sampler inlets = 2 to 4 m? Yes ☐ No ☐ NA ☐

Actual measured distance between collocated probes (meters) ____

Distance between any high volume inlet and any other high or low volume inlet ≥ 2 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) ____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA Air flow < 200 L/min ☐ PM2.5 ☐ PM10 ☐ PM10-2.5 ☐ PM10 Lead (PB) ☐ PM2.5 Cont. (TEOM) ☐ PM2.5 Cont. (BAM) ☐ PM2.5 Spec. (SASS) ☐ PM2.5 Spec. (URG) ☐ PM2.5 Cont. Spec.	☐ General/Background____ ☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Upwind Background____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☐ Urban_____ ☐ Regional____	☐ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m ____ ☐ 2-7m ____ ☐ 7-15 m ____ ☐ > 15 m____
Actual measured distance from probe inlet to ground (meters) ____

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☐ No ☐____

Distance between inlets of any low volume monitor and any other low volume monitor at the site = 1 m or greater? Yes ☐ No ☐ NA ☐
Distance between all low volume monitor inlets and any Hi-Volume PM-10 or TSP inlet = 2 m or greater? Yes ☐ No ☐ NA ☐

Are collocated PM2.5 Monitors (Two FRMs, FRM & BAM, FRM & TEOM, BAM & TEOM) Located at Site? *Yes ☐ (answer *'d questions) No ☐ NA ☐
*Distance between collocated PM 2.5 sampler inlets = 1 to 4 m? Yes ☐ No ☐ Give actual (meters) ____
*Are collocated PM2.5 sampler inlets within 1 m vertically of each other? Yes ☐ No ☐ Give actual (meters) ____

Is an URG 3000 monitor collocated with a SASS monitor at the site? *Yes ☐ (answer *'d questions) No ☐ NA ☐
* Distance between collocated speciation sampler inlets = 1 to 4 m? Yes ☐ No ☐ Give actual (meters) ____
* Are collocated speciation sampler inlets within 1 m vertically of each other? Yes ☐ No ☐ Give actual (meters) ____

Is a low-volume PM10 monitor collocated with a PM2.5 monitor at the site to measure PM10-2.5? *Yes ☐ (answer *'d questions) No ☐ NA ☐

*Distance between collocated PM10 and PM2.5 inlets for PM10-2.5 samplers = 1 to 4 m? Yes ☐ No ☐
*Are collocated PM10 and PM2.5 sampler inlets within 1 m vertically of each other? Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

RECOMMENDATIONS:

1) Maintain current site status? Yes ☒ *No ☐ (answer *'d questions)
*2) Change monitoring objective? Yes ☐ (enter new objective _____) No ☐-
*3) Change scale of representativeness? Yes ☐ (enter new scale _____) No ☐
*4) Relocate site? Yes ☐ No ☐

Comments: Obstruction tree is 17m taller than the probe and 26 m away from the probe. Distances are rough estimates because of difficulty in measuring due to different terrain heights of probe and trees.

Reviewer Steve Ensley Date January 26, 2012
Ambient Monitoring Coordinator Steve Ensley Date January 26, 2012

Revised 2012-03-06

Site Review Form Calendar Year 2011

Site Information

Region ARO	**Site Name** Marion	**AQS Site # 37-** 111 **-** 0004
Street Address 676 State Street		**City** Marion
Urban Area MARION	**Core-based Statistical Area** None	

Enter Exact		Method of Measuring	
Longitude -W81.993889	**Latitude** N35.6875		
In Decimal Degrees	In Decimal Degrees	**Other (explain)**	**Explanation: Google Earth**

Elevation Above/below Mean Sea Level (in meters) 1364

Name of nearest road to inlet probe Baldwin Ave ADT 5300 Year 2009

Comments: _____

Distance of site to nearest major road (m) 435.00 Direction from site to nearest major road NW

Name of nearest major road Hwy 70 ADT 13000 Year 2009

Comments: _____

Site located near electrical substation/high voltage power lines? Yes ☐ No ☒

Distance of site to nearest railroad track	(m) 360 Direction to RR N ☐NA
Distance of site to nearest power pole w/transformer	(m) 0 Direction ___

Distance between site and drip line of water tower (m) _____ Direction from site to water tower _____ ☐NA

Explain any sources of potential bias; include cultivated fields, loose bulk storage, stacks, vents, railroad tracks, construction activities, fast food restaurants, and swimming pools.

_____

ANSWER ALL APPLICABLE QUESTIONS:

Parameters	Monitoring Objective	Scale	Site Type
☒ NA	☐General/Background_____	☐Micro_____	☐SLAMS _____
☐ SO_2 (NAAQS)	☐Highest Concentration_____	☐Middle_____	☐NCORE_____
☐ SO_2 (trace-level)	☐Max O3 Concentration_____	☐Neighborhood_____	☐SPM_____
☐ NO_x (NAAQS)	☐Population Exposure_____	☐Urban_____	☐SPM/OPN_____
☐ $HSNO_y$	☐Source Oriented_____	☐Regional_____	☐NONREGULATORY_____
☐ O_3	☐Transport_____		
☐ NH_3	☐Upwind Background_____		
☐ Hydrocarbon	☐Welfare Related Impacts		
☐ Air Toxics	_____		
☐ HSCO (Not Micro)			
☐ CO (trace-level)			

Probe inlet height (from ground) 2-15 m? Yes ☐ No ☐ Give actual measured height from ground (meters) _____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) _____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐

*Distance from probe to tree (m) _____ Direction from probe to tree ___

*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____ Direction from probe inlet to obstacle ___

*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ CO (Micro Only)	☐ Highest Concentration_____ ☐ Population Exposure_____ ☐ Source Oriented_____ ☐ Transport_____ ☐ Welfare Related Impacts _____	☐ Micro_____	☐ SLAMS _____ ☐ SPM_____ ☐ SPM/OPN_____ ☐ NONREGULATORY

Probe inlet height (from ground) 2.5 - 3.5 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) _____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) _____

Distance of probe inlet to nearest intersection > 10 m? Yes ☐ No ☐
Distance of probe inlet to nearest traffic lane 2 - 10 m? Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ NO_y (trace-level)	☐ General/Background_____ ☐ Highest Concentration_____ ☐ Max O3 Concentration_ ☐ Population Exposure_____ ☐ Source Oriented_____ ☐ Transport_____ ☐ Upwind Background_____ ☐ Welfare Related Impacts _____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood_____ ☐ Urban_____ ☐ Regional_____	☐ SLAMS _____ ☐ NCORE_____ ☐ SPM_____ ☐ SPM/OPN_____ ☐ NONREGULATORY

Probe inlet height (from ground) 10-15 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) _____

Distance of probe inlet from horizontal and/or vertical supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) _____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ NO_2 (Near Road only) ☐ CO (Near Road only)	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Welfare Related Impacts _____	☐ Micro_____	☐ SLAMS _____ ☐ SPM_____ ☐ NONREGULATORY ____

Probe inlet height (from ground) 2-15 m? Yes ☐ No ☐ Give actual measured height from ground (meters) ____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) ____ Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☐ NA Air flow > 200 L/min ☒ PM10 ☐ TSP ☐ Pb	☐ Highest Concentration____ ☒ Population Exposure____ ☐ Source Oriented____ ☐ Background_____ ☐ Transport_____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☒ Urban_____ ☐ Regional____	☒ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m ____ ☒ 2-7m ____ ☐ 7-15 m ____ ☐ > 15 m____

Actual measured distance from probe inlet to ground (meters) __2.1336__

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☒ No ☐

Actual measured distance from probe to supporting structure (meters) __2.01__

Distance between collocated PM-10, TSP or Pb sampler inlets = 2 to 4 m? Yes ☐ No ☐ NA ☒

Actual measured distance between collocated probes (meters) ____

Distance between any high volume inlet and any other high or low volume inlet ≥ 2 m? Yes ☐ No ☐ NA ☒

Is probe > 20 m from the nearest tree drip line? Yes ☒ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☒

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) ____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☐ NA Air flow < 200 L/min ☒ PM2.5 ☐ PM10 ☐ PM10-2.5 ☐ PM10 Lead (PB) ☒ PM2.5 Cont. (TEOM) ☐ PM2.5 Cont. (BAM) ☐ PM2.5 Spec. (SASS) ☐ PM2.5 Spec. (URG) ☐ PM2.5 Cont. Spec.	☐ General/Background____ ☐ Highest Concentration____ ☒ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Upwind Background____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☒ Urban_____ ☐ Regional____	☒ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m ____ ☒ 2-7m ____ ☐ 7-15 m ____ ☐ > 15 m____
Actual measured distance from probe inlet to ground (meters) MJ-2.36 MJA-2.34 TEOM-2.32

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☒ No ☐____

Distance between inlets of any low volume monitor and any other low volume monitor at the site = 1 m or greater? Yes ☒ No ☐ NA ☐

Distance between all low volume monitor inlets and any Hi-Volume PM-10 or TSP inlet = 2 m or greater? Yes ☒ No ☐ NA ☐

Are collocated PM2.5 Monitors (Two FRMs, FRM & BAM, FRM & TEOM, BAM & TEOM) Located at Site? *Yes ☒ (answer *'d questions) No ☐ NA ☐

*Distance between collocated PM 2.5 sampler inlets = 1 to 4 m? Yes ☒ No ☐ Give actual (meters) 1.1

*Are collocated PM2.5 sampler inlets within 1 m vertically of each other? Yes ☒ No ☐ Give actual (meters) 0

Is an URG 3000 monitor collocated with a SASS monitor at the site? *Yes ☐ (answer *'d questions) No ☐ NA ☒

* Distance between collocated speciation sampler inlets = 1 to 4 m? Yes ☐ No ☐ Give actual (meters) ____

* Are collocated speciation sampler inlets within 1 m vertically of each other? Yes ☐ No ☐ Give actual (meters) ____

Is a low-volume PM10 monitor collocated with a PM2.5 monitor at the site to measure PM10-2.5? *Yes ☐ (answer *'d questions) No ☐ NA ☒

*Distance between collocated PM10 and PM2.5 inlets for PM10-2.5 samplers = 1 to 4 m? Yes ☐ No ☐

*Are collocated PM10 and PM2.5 sampler inlets within 1 m vertically of each other? Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☒ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐

*Distance from probe to tree (m) _____ Direction from probe to tree ___

*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☒

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___

*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) 86 Direction from probe to nearest traffic lane E

RECOMMENDATIONS:

1) Maintain current site status? Yes ☒ *No ☐ (answer *'d questions)

*2) Change monitoring objective? Yes ☐ (enter new objective _____) No ☐-

*3) Change scale of representativeness? Yes ☐ (enter new scale _____) No ☐

*4) Relocate site? Yes ☐ No ☐

Comments: _____

Reviewer Terri Davis _____ Date_____

Ambient Monitoring Coordinator Steve Ensley _____ DateJanuary 31, 2012

Revised 2012-05-04

Site Review Form Calendar Year 2011

Site Information

Region ARO	**Site Name** Spruce Pine	**AQS Site #** 37- 121 - 0001
Street Address- 138 Highland Ave		**City** Spruce Pine
Urban Area SPRUCE PINE	**Core-based Statistical Area** None	

Enter Exact		**Method of Measuring**	
Longitude -82.073445	**Latitude** 35.915341		
In Decimal Degrees	In Decimal Degrees	**Other (explain)**	**Explanation: Google Earth**

Elevation Above/below Mean Sea Level (in meters) 778

Name of nearest road to inlet probe Hwy 226 ADT 7000 Year 2009

Comments: _____

Distance of site to nearest major road (m) 520.00 Direction from site to nearest major road S

Name of nearest major road HWY 19E ADT 15000 Year 2009

Comments: _____

Site located near electrical substation/high voltage power lines? Yes ☐ No ☒

Distance of site to nearest railroad track (m) 145 Direction to RR N ☐NA

Distance of site to nearest power pole w/transformer (m) ____ Direction ___

Distance between site and drip line of water tower (m) _____ Direction from site to water tower _____ ☒NA

Explain any sources of potential bias; include cultivated fields, loose bulk storage, stacks, vents, railroad tracks, construction activities, fast food restaurants, and swimming pools.

_____

ANSWER ALL APPLICABLE QUESTIONS:

Parameters	Monitoring Objective	Scale	Site Type
☒ NA	☐ General/Background_____	☐ Micro_____	☐ SLAMS _____
☐ SO_2 (NAAQS)	☐ Highest Concentration_____	☐ Middle_____	☐ NCORE_____
☐ SO_2 (trace-level)	☐ Max O3 Concentration_____	☐ Neighborhood_____	☐ SPM_____
☐ NO_x (NAAQS)	☐ Population Exposure_____	☐ Urban_____	☐ SPM/OPN_____
☐ $HSNO_y$	☐ Source Oriented_____	☐ Regional_____	☐ NONREGULATORY_____
☐ O_3	☐ Transport_____		
☐ NH_3	☐ Upwind Background_____		
☐ Hydrocarbon	☐ Welfare Related Impacts		
☐ Air Toxics	_____		
☐ HSCO (Not Micro)			
☐ CO (trace-level)			

Probe inlet height (from ground) 2-15 m? Yes ☐ No ☐ Give actual measured height from ground (meters) _____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) _____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐

*Distance from probe to tree (m) _____ Direction from probe to tree ___

*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____ Direction from probe inlet to obstacle ___

*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ CO (Micro Only)	☐ Highest Concentration_____ ☐ Population Exposure_____ ☐ Source Oriented_____ ☐ Transport_____ ☐ Welfare Related Impacts _____	☐ Micro_____	☐ SLAMS _____ ☐ SPM_____ ☐ SPM/OPN_____ ☐ NONREGULATORY

Probe inlet height (from ground) 2.5 - 3.5 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) _____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) _____

Distance of probe inlet to nearest intersection > 10 m? Yes ☐ No ☐
Distance of probe inlet to nearest traffic lane 2 - 10 m? Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ NO_y (trace-level)	☐ General/Background_____ ☐ Highest Concentration_____ ☐ Max O3 Concentration_ ☐ Population Exposure_____ ☐ Source Oriented_____ ☐ Transport_____ ☐ Upwind Background_____ ☐ Welfare Related Impacts _____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood_____ ☐ Urban_____ ☐ Regional_____	☐ SLAMS _____ ☐ NCORE_____ ☐ SPM_____ ☐ SPM/OPN_____ ☐ NONREGULATORY

Probe inlet height (from ground) 10-15 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) _____

Distance of probe inlet from horizontal and/or vertical supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) _____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ NO_2 (Near Road only) ☐ CO (Near Road only)	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Welfare Related Impacts _____	☐ Micro_____	☐ SLAMS _____ ☐ SPM_____ ☐ NONREGULATORY ____

Probe inlet height (from ground) 2-15 m? Yes ☐ No ☐ Give actual measured height from ground (meters) ____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) ____ Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☒ NA Air flow > 200 L/min ☐ PM10 ☐ TSP ☐ Pb	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Background_____ ☐ Transport_____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☐ Urban_____ ☐ Regional____	☐ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m ____ ☐ 2-7m ____ ☐ 7-15 m ____ ☐ > 15 m____

Actual measured distance from probe inlet to ground (meters) ____

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance between collocated PM-10, TSP or Pb sampler inlets = 2 to 4 m? Yes ☐ No ☐ NA ☐

Actual measured distance between collocated probes (meters) ____

Distance between any high volume inlet and any other high or low volume inlet ≥ 2 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) ____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☐ NA Air flow < 200 L/min ☒ PM2.5 ☐ PM10 ☐ PM10-2.5 ☐ PM10 Lead (PB) ☐ PM2.5 Cont. (TEOM) ☐ PM2.5 Cont. (BAM) ☐ PM2.5 Spec. (SASS) ☐ PM2.5 Spec. (URG) ☐ PM2.5 Cont. Spec.	☐ General/Background____ ☐ Highest Concentration____ ☒ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Upwind Background____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☒ Neighborhood____ ☐ Urban_____ ☐ Regional____	☒ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m ____ ☐ 2-7m ____ ☒ 7-15 m ____ ☐ > 15 m____
Actual measured distance from probe inlet to ground (meters) ____

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☒ No ☐____

Distance between inlets of any low volume monitor and any other low volume monitor at the site = 1 m or greater? Yes ☐ No ☐ NA ☒

Distance between all low volume monitor inlets and any Hi-Volume PM-10 or TSP inlet = 2 m or greater? Yes ☐ No ☐ NA ☒

Are collocated PM2.5 Monitors (Two FRMs, FRM & BAM, FRM & TEOM, BAM & TEOM) Located at Site? *Yes ☐ (answer *'d questions) No ☐ NA ☒

*Distance between collocated PM 2.5 sampler inlets = 1 to 4 m? Yes ☐ No ☐ Give actual (meters) ____

*Are collocated PM2.5 sampler inlets within 1 m vertically of each other? Yes ☐ No ☐ Give actual (meters) ____

Is an URG 3000 monitor collocated with a SASS monitor at the site? *Yes ☐ (answer *'d questions) No ☐ NA ☒

* Distance between collocated speciation sampler inlets = 1 to 4 m? Yes ☐ No ☐ Give actual (meters) ____

* Are collocated speciation sampler inlets within 1 m vertically of each other? Yes ☐ No ☐ Give actual (meters) ____

Is a low-volume PM10 monitor collocated with a PM2.5 monitor at the site to measure PM10-2.5? *Yes ☐ (answer *'d questions) No ☐ NA ☒

*Distance between collocated PM10 and PM2.5 inlets for PM10-2.5 samplers = 1 to 4 m? Yes ☐ No ☐

*Are collocated PM10 and PM2.5 sampler inlets within 1 m vertically of each other? Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☒ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐

*Distance from probe to tree (m) _____ Direction from probe to tree ___

*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☒

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___

*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) 35 Direction from probe to nearest traffic lane ESE

RECOMMENDATIONS:

1) Maintain current site status? Yes ☒ *No ☐ (answer *'d questions)

*2) Change monitoring objective? Yes ☐ (enter new objective _____) No ☐-

*3) Change scale of representativeness? Yes ☐ (enter new scale _____) No ☐

*4) Relocate site? Yes ☐ No ☐

Comments: _____

Reviewer Steve Ensley Date January 26, 2012

Ambient Monitoring Coordinator Steve Ensley Date January 26, 2012

Revised 2012-03-02

Site Review Form Calendar Year 2011

Site Information

Region ARO	**Site Name** Mt. Mitchell	**AQS Site #** 37- 199 - 0004
Street Address- 2388 state Hwy 128		**City** Burnsville
Urban Area Not in an Urban Area	**Core-based Statistical Area** None	

Enter Exact		**Method of Measuring**	
Longitude -82.264944	**Latitude** 35.765413		
In Decimal Degrees	In Decimal Degrees	**Other (explain)**	**Explanation: Google Earth**

Elevation Above/below Mean Sea Level (in meters) 2023

Name of nearest road to inlet probe State Hwy 128 ADT 252 Year 2008

Comments: _____

Distance of site to nearest major road (m) 70.00 Direction from site to nearest major road N

Name of nearest major road State Hwy 128 ADT 252 Year 2008

Comments: _____

Site located near electrical substation/high voltage power lines? Yes ☐ No ☒

Distance of site to nearest railroad track (m) _____ Direction to RR ___ ☒NA

Distance of site to nearest power pole w/transformer (m) ____ Direction ___

Distance between site and drip line of water tower (m) _____ Direction from site to water tower _____ ☒NA

Explain any sources of potential bias; include cultivated fields, loose bulk storage, stacks, vents, railroad tracks, construction activities, fast food restaurants, and swimming pools.

_____

ANSWER ALL APPLICABLE QUESTIONS:

Parameters	Monitoring Objective	Scale	Site Type
☐ NA	☒ General/Background_____	☒ Micro_____	☐ SLAMS _____
☐ SO_2 (NAAQS)	☐ Highest Concentration_____	☐ Middle_____	☐ NCORE_____
☐ SO_2 (trace-level)	☐ Max O3 Concentration_____	☐ Neighborhood_____	☒ SPM_____
☐ NO_x (NAAQS)	☐ Population Exposure_____	☐ Urban_____	☐ SPM/OPN_____
☐ $HSNO_y$	☐ Source Oriented_____	☐ Regional_____	☐ NONREGULATORY_____
☒ O_3	☒ Transport_____		
☐ NH_3	☐ Upwind Background_____		
☐ Hydrocarbon	☐ Welfare Related Impacts		
☐ Air Toxics	_____		
☐ HSCO (Not Micro)			
☐ CO (trace-level)			

Probe inlet height (from ground) 2-15 m? Yes ☒ No ☐ Give actual measured height from ground (meters) ____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☒

Is probe > 20 m from the nearest tree drip line? Yes ☒ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐

*Distance from probe to tree (m) _____ Direction from probe to tree ___

*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☒

*Identify obstacle ____ Distance from probe inlet (m) _____ Direction from probe inlet to obstacle ___

*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) 70 Direction from probe to nearest traffic lane N

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ CO (Micro Only)	☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Welfare Related Impacts ____	☐ Micro____	☐ SLAMS _____ ☐ SPM_____ ☐ SPM/OPN____ ☐ NONREGULATORY

Probe inlet height (from ground) 2.5 - 3.5 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) ____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet to nearest intersection > 10 m? Yes ☐ No ☐
Distance of probe inlet to nearest traffic lane 2 - 10 m? Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ NO_y (trace-level)	☐ General/Background____ ☐ Highest Concentration____ ☐ Max O3 Concentration_ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Upwind Background____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☐ Urban_____ ☐ Regional____	☐ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ SPM/OPN____ ☐ NONREGULATORY

Probe inlet height (from ground) 10-15 m? Yes ☐ No ☐
Actual measured distance from probe inlet to ground (meters) ____

Distance of probe inlet from horizontal and/or vertical supporting structure > 1 m? Yes ☐ No ☐
Actual measured distance from probe to supporting structure (meters) ____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA ☐ NO_2 (Near Road only) ☐ CO (Near Road only)	☐ Highest Concentration_____ ☐ Population Exposure_____ ☐ Source Oriented_____ ☐ Transport_____ ☐ Welfare Related Impacts _____	☐ Micro_____	☐ SLAMS _____ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) 2-15 m? Yes ☐ No ☐ Give actual measured height from ground (meters) _____

Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) _____

Distance of probe inlet from other monitoring probe inlets > 1 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

Parameters	Monitoring Objective	Scale	Site Type
☒ NA Air flow > 200 L/min ☐ PM10 ☐ TSP ☐ Pb	☐ Highest Concentration_____ ☐ Population Exposure_____ ☐ Source Oriented_____ ☐ Background_____ ☐ Transport_____ ☐ Welfare Related Impacts _____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood_____ ☐ Urban_____ ☐ Regional_____	☐ SLAMS _____ ☐ NCORE_____ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m _____ ☐ 2-7m _____ ☐ 7-15 m _____ ☐ > 15 m_____

Actual measured distance from probe inlet to ground (meters) _____

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☐ No ☐

Actual measured distance from probe to supporting structure (meters) _____

Distance between collocated PM-10, TSP or Pb sampler inlets = 2 to 4 m? Yes ☐ No ☐ NA ☐

Actual measured distance between collocated probes (meters) _____

Distance between any high volume inlet and any other high or low volume inlet ≥ 2 m? Yes ☐ No ☐ NA ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)

*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐

*Identify obstacle ____ Distance from probe inlet (m) ____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
☒ NA Air flow < 200 L/min ☐ PM2.5 ☐ PM10 ☐ PM10-2.5 ☐ PM10 Lead (PB) ☐ PM2.5 Cont. (TEOM) ☐ PM2.5 Cont. (BAM) ☐ PM2.5 Spec. (SASS) ☐ PM2.5 Spec. (URG) ☐ PM2.5 Cont. Spec.	☐ General/Background____ ☐ Highest Concentration____ ☐ Population Exposure____ ☐ Source Oriented____ ☐ Transport_____ ☐ Upwind Background____ ☐ Welfare Related Impacts ____	☐ Micro_____ ☐ Middle_____ ☐ Neighborhood____ ☐ Urban_____ ☐ Regional____	☐ SLAMS _____ ☐ NCORE____ ☐ SPM_____ ☐ NONREGULATORY _____

Probe inlet height (from ground) ☐ < 2 m ____ ☐ 2-7m ____ ☐ 7-15 m ____ ☐ > 15 m____
Actual measured distance from probe inlet to ground (meters) ____

Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes ☐ No ☐____

Distance between inlets of any low volume monitor and any other low volume monitor at the site = 1 m or greater? Yes ☐ No ☐ NA ☐
Distance between all low volume monitor inlets and any Hi-Volume PM-10 or TSP inlet = 2 m or greater? Yes ☐ No ☐ NA ☐

Are collocated PM2.5 Monitors (Two FRMs, FRM & BAM, FRM & TEOM, BAM & TEOM) Located at Site? *Yes ☐ (answer *'d questions) No ☐ NA ☐
*Distance between collocated PM 2.5 sampler inlets = 1 to 4 m? Yes ☐ No ☐ Give actual (meters) ____
*Are collocated PM2.5 sampler inlets within 1 m vertically of each other? Yes ☐ No ☐ Give actual (meters) ____

Is an URG 3000 monitor collocated with a SASS monitor at the site? *Yes ☐ (answer *'d questions) No ☐ NA ☐
* Distance between collocated speciation sampler inlets = 1 to 4 m? Yes ☐ No ☐ Give actual (meters) ____
* Are collocated speciation sampler inlets within 1 m vertically of each other? Yes ☐ No ☐ Give actual (meters) ____

Is a low-volume PM10 monitor collocated with a PM2.5 monitor at the site to measure PM10-2.5? *Yes ☐ (answer *'d questions) No ☐ NA ☐
*Distance between collocated PM10 and PM2.5 inlets for PM10-2.5 samplers = 1 to 4 m? Yes ☐ No ☐
*Are collocated PM10 and PM2.5 sampler inlets within 1 m vertically of each other? Yes ☐ No ☐

Is probe > 20 m from the nearest tree drip line? Yes ☐ *No ☐ (answer *'d questions)
*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes ☐ *No ☐
*Distance from probe to tree (m) _____ Direction from probe to tree ___
*Height of tree (m) _____

Are there any obstacles to air flow? *Yes ☐ (answer *'d questions) No ☐
*Identify obstacle ____ Distance from probe inlet (m) _____Direction from probe inlet to obstacle ___
*Is distance from inlet probe to obstacle at least twice the height that the obstacle protrudes above the probe? Yes ☐ No ☐

Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ___

RECOMMENDATIONS:

1) Maintain current site status? Yes ☒ *No ☐ (answer *'d questions)
*2) Change monitoring objective? Yes ☐ (enter new objective _____) No ☐-
*3) Change scale of representativeness? Yes ☐ (enter new scale _____) No ☐
*4) Relocate site? Yes ☐ No ☐

Comments: _____

Reviewer Steve Ensley Date January 19, 2012

Ambient Monitoring Coordinator Steve Ensley Date January 19, 2012

Revised 2012-03-02

Appendix A-2. Scale of Representativeness

Each station in the monitoring network must be described in terms of the physical dimensions of the air parcel nearest the monitoring station throughout which actual pollutant concentrations are reasonably similar. Area dimensions or scales of representativeness used in the network description are:

a) Microscale - defines the concentration in air volumes associated with area dimensions ranging from several meters up to about 100 meters.

b) Middle scale - defines the concentration typical of areas up to several city blocks in size with dimensions ranging from about 100 meters to 0.5 kilometers.

c) Neighborhood scale – defines concentrations within an extended area of a city that has relatively uniform land use with dimensions ranging from about 0.5 to 4.0 kilometers.

d) Urban scale - defines an overall citywide condition with dimensions on the order of 4 to 50 kilometers.

e) Regional Scale - defines air quality levels over areas having dimensions of 50 to hundreds of kilometers.

Closely associated with the area around the monitoring station where pollutant concentrations are reasonably similar are the basic monitoring exposures of the station.

There are six basic exposures:

a) Sites located to determine the highest concentrations expected to occur in the area covered by the network.

b) Sites located to determine representative concentrations in areas of high population density.

c) Sites located to determine the impact on ambient pollution levels of significant sources or source categories.

d) Sites located to determine general background concentration levels.

e) Sites located to determine the extent of regional pollutant transport among populated areas.

f) Sites located to measure air pollution impacts on visibility, vegetation damage, or other welfare-based impacts and in support of secondary standards.

The design intent in siting stations is to correctly match the area dimensions represented by the sample of monitored air with the area dimensions most appropriate for the monitoring objective of the station. The following relationship of the six basic objectives and the scales of representativeness are appropriate when siting monitoring stations:

Table 1. Site Type Appropriate Siting Scales

1. Highest concentration	Micro, middle, neighborhood (sometimes urban or regional for secondarily formed pollutants)
2. Population oriented	Neighborhood, urban
3. Source impact	Micro, middle, neighborhood
4. General/background & regional transport	Urban, regional
5. Welfare-related impacts	Urban, regional