

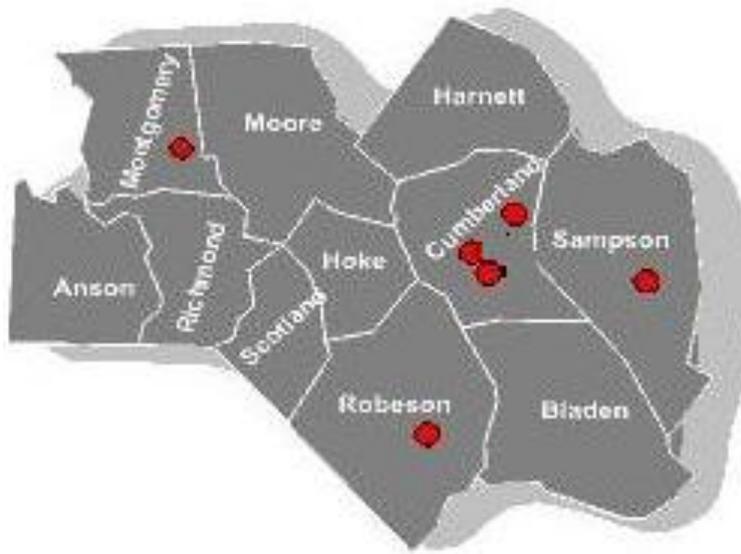
# 2012 ANNUAL MONITORING NETWORK PLAN FOR THE NORTH CAROLINA DIVISION OF AIR QUALITY

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## VOLUME 2

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

#### E. THE FAYETTEVILLE MONITORING REGION



*July 2, 2012*

North Carolina Division of Air Quality  
A Division of the North Carolina Department  
of Environment and Natural Resources  
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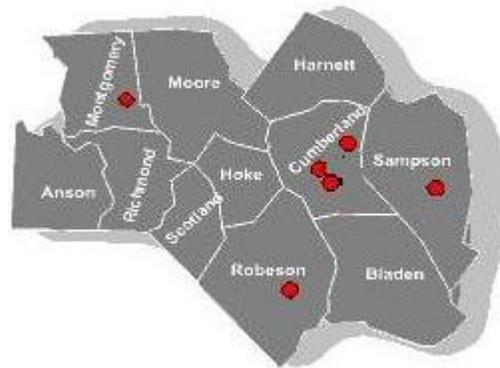
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## E. The Fayetteville Monitoring Region

The Fayetteville Monitoring Region, shown in Figure E1, consists of three sections: (1) The Non-MSA Portion of the Fayetteville Monitoring Region (Bladen, Harnett, Montgomery, Moore, Richmond, Robeson, Sampson and Scotland Counties), (2) the Fayetteville Metropolitan Statistical Area (MSA) (Cumberland and Hoke Counties), and (3) the southeastern portion of the Charlotte-Gastonia-Concord MSA (Anson County), previously discussed as part of the Mooresville Monitoring Region in **Section C**.



**Figure E1. The Fayetteville Monitoring Region**  
The red dots show the approximate locations of most of the monitoring sites in this region.

### (1) The Non-MSA Portion of the Fayetteville Monitoring Region

The Non-MSA portion of the Fayetteville monitoring region contains eight counties (Bladen, Harnett, Montgomery, Moore, Richmond, Robeson, Sampson and Scotland). It has no Metropolitan Statistical Areas. The Southern Pines-Pine Hurst Micropolitan Statistical Areas is located in Moore County. The Dunn Micropolitan Statistical Area is located in Harnett County and the Lumberton Micropolitan Statistical Area is located in Robeson County. The North Carolina Division of Air Quality (NC-DAQ) currently operates three monitoring sites in this area of the Sand Hills: at Candor in Montgomery County, at Linkhaw in Lumberton, and at Clinton Crops in Clinton. The location of the Candor monitoring site is shown in Figure E2.



**Figure E2. Location of the Candor Monitoring Site**

A is the Candor fine particle monitoring site. The circle approximates the neighborhood scale (0.5 to 4 kilometers [Km]).

At the Candor site the NC-DAQ operates a one-in-three day fine particle monitor, a rotating one-in-six day high volume every third year PM<sub>10</sub> Monitor, and an air toxics volatile organic compound monitor. A picture of the site as well as views looking north, east, south, and west are provided in Figure E3 through

Figure E7. The Candor site is collocated with a Clear Air Status and Trends Network (CASTNET) site. Each CASTNET dry deposition station measures:

- Weekly average atmospheric concentrations of sulfate, nitrate, ammonium, sulfur dioxide, and nitric acid;
- Hourly concentrations of ambient ozone levels; and
- Meteorological conditions required for calculating dry deposition rates.

The Candor site is located on the eastern edge of the Uwharrie National Forest. In 2011, the NC-DAQ added a background PM<sub>10</sub> monitor to the site that operates on a one-in-three year schedule.



Figure E3. The Candor Particle Monitoring Site (37-123-0001)



Figure E4. Candor Site Looking North



Figure E6. Looking East from the Candor Site



Figure E5. Looking West from the Candor Site



Figure E7. Looking South from the Candor Site

The other two sites in this area are located at Lumberton (Robeson County) and Clinton (Sampson County). The locations of these monitoring sites are shown in Figure E8.



C is the Linkhaw fine particle site; D is the Clinton Crops ammonia and reactive oxides of nitrogen site. The neighborhood scale (0.5 to 4 Km) is approximately represented by the black squares.

Figure E8. Monitoring Locations of Linkhaw and Clinton Crops

At the **Linkhaw** (37-155-0005) site in Lumberton the NC-DAQ operates a one-in-three day fine particle FRM monitor. A picture of the site as well as views looking north, east, south, and west are provided in Figure E10 through Figure E13. No changes are planned for the Linkhaw site at this time.



Figure E10. The Linkhaw Fine Particle Monitoring Site



Figure E9. Looking North from the Linkhaw Site



Figure E11. Looking East from the Linkhaw Site



Figure E12. Looking West from the Linkhaw Site



Figure E13. Looking South from the Linkhaw Site

At the **Clinton Crops** (37-163-0004) site in Clinton the NC-DAQ operates a special purpose ammonia monitor. The site is collocated with a meteorological tower operated by the State Climate Office. A picture of the site and views looking north, east, south, and west are provided in Figure E14 to Figure E18. Ammonia and reactive oxides of nitrogen monitoring was established at the site in 2000 to provide information on atmospheric nitrogen compounds in the ambient air for a five-year NC-DAQ study on ambient nitrogen concentration levels in the inner coastal plain as a result of the expansion of the hog industry in the area. The study was extended when the moratorium on hog lagoons was extended. When the hog lagoon moratorium was made permanent in 2007, the NC-DAQ considered ending the study at the end of 2008. However, in September 2008 the NC-DAQ decided to extend the study for an additional year. In September 2009, the NC-DAQ decided to shut down the reactive oxides of nitrogen monitor and to extend the ammonia monitoring study to obtain additional data comparing the continuous ammonia monitor to an alpha passive ammonia monitor. The alpha passive ammonia monitoring still has not started.



Figure E14. Clinton Crop Ammonia Monitoring Site



Figure E15. Looking North at the Clinton Crops Site



Figure E17. Looking East at the Clinton Crops Site



Figure E16. Looking West at the Clinton Crops Site



Figure E18 Looking South at the Clinton Crops Site

In 2010 EPA finalized changes to the expanded **lead monitoring** network established in 2008 to support the lower lead National Ambient Air Quality Standard (NAAQS) of 0.15 micrograms per cubic meter. EPA focused monitoring efforts on fence line monitoring located at facilities that emit 0.5 tons or more of lead per year and at National Core (NCore) monitoring sites as well as at selected airports. The Non-MSA portion of the Fayetteville Monitoring Region will not need to add any lead monitors because the area does not have an NCore monitoring site or any permitted facilities located within its bounds that emit 0.5 tons or more per year of lead.<sup>1</sup>

Any new **ozone monitoring** requirements also should not impact this area. There are no MSAs that are required to meet minimum population exposure monitoring requirements for urban areas. This area should also not be impacted by rural ozone monitoring requirements. There are no Class I areas located here. However, the United States Environmental Protection Agency (EPA) is upgrading the ozone monitors and monitoring protocol at all of the CASTNET sites so that they will meet 40 Code of Federal Regulations (CFR) 58 Appendix A requirements. This action by EPA will provide State and Local programs with the option of including CASTNET ozone monitoring sites in their ozone monitoring plans to meet their rural ozone monitoring requirements. At this time the NC-DAQ does not plan to include the Candor CASTNET ozone monitor in its future ozone monitoring plans.

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<sup>1</sup> Data obtained from the NC-DAQ emission inventory database.

The 2010 **nitrogen dioxide monitoring** requirements will not result in additional nitrogen dioxide monitoring in this part of the Fayetteville Monitoring Region. The area is too small to require area-wide monitors and does not have any roadways with average annual daily traffic above the threshold for near roadway monitoring. This area will not be impacted by the 2010 **sulfur dioxide monitoring** requirements because there are not enough people or emissions to require a Population Weighted Emission Index (PWEI) monitor. Changes to the **carbon dioxide monitoring** requirements in 2011 will also not result in additional monitoring in this area because the population is too small.

## (2) The Fayetteville MSA

The Fayetteville MSA consists of two counties: Cumberland and Hoke. The major metropolitan area is the City of Fayetteville. The NC-DAQ currently operates three monitoring sites in the Fayetteville MSA. These sites are all located in Cumberland County at William H. Owen Elementary School in Fayetteville, Wade, and Golfview in Hope Mills. The locations of these monitors are shown in Figure E19.



Figure E19. Monitors located in the Fayetteville MSA

At the Golfview site the NC-DAQ operates a seasonal ozone monitor and a special purpose sulfur dioxide monitor that operates for 12 months every three years. A picture of the site as well as views looking north, east, south, and west are provided in Figure E20 through Figure E24. The Golfview ozone site was established as an upwind site for the Fayetteville MSA. Sulfur dioxide monitoring was reduced from every year to every third year in 2003 because the site is also a good background site for obtaining data for Prevention of Significant Deterioration modeling requirements. This sulfur dioxide monitor is operating in 2012. The U.S. Census Bureau, Population Division, estimates 374,157 people lived in the Fayetteville MSA in July 2011. Because 40 CFR 58 Appendix D requires MSAs with over 350,000 people to have two ozone monitors, this site is the second required ozone site for the Fayetteville MSA.



Figure E20. Golfview Ozone and Sulfur Dioxide Monitoring Site (37-051-1003)



Figure E21. Looking North from Golfview Site



Figure E23. Looking East from Golfview Site



Figure E22. Looking West from Golfview Site



Figure E24. Looking South from Golfview Site

At the Wade 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 E25 through Figure E29. The Wade site was established as the downwind site for the Fayetteville MSA. This site is the design value ozone-monitoring site in the MSA. 40 CFR 58 Appendix D currently requires the Fayetteville MSA to have two ozone monitoring sites and this site is the first required site because it is the design value monitor.



Figure E25. Wade Ozone Monitoring Site (37-051-0008)



Figure E26. Looking North from Wade Site



Figure E28. Looking East from the Wade Site



Figure E27. Looking West from the Wade Site



Figure E29. Looking South from the Wade Site

At the William Owen site the NC-DAQ operates one-in-three day fine particle Federal Reference Method (FRM), continuous fine particle, and one-in-six day high volume PM<sub>10</sub> monitors. A picture of the site as well as views looking north, northeast, east, south, southwest, and west are provided in Figure E30 through Figure E36. The site also has a meteorological tower with wind speed and wind direction sensors, ambient temperature sensors at 10 meters and 2 meters, rainfall, and solar radiation sensors.



Figure E30. The William Owen Particle Monitoring Site



Figure E31. Looking North from the William Owen Site



Figure E33. William Owen Site Looking Southwest



Figure E32. Looking West from the William Owen Site



Figure E34. William Owen Site Looking Northeast



Figure E35. Looking East from the William Owen Site



Figure E36. Looking South from the William Owen Site

Changes to the **lead monitoring network** requirements in 2010 did not add monitors in the Fayetteville MSA. Although the Fayetteville MSA does not have an NCore monitoring site, Fort Bragg reported 1,800 pounds of fugitive lead emissions at the base due to training activities on its firing ranges in 2009. However, 2010 lead emissions at Fort Bragg were below the 0.5 ton threshold for monitoring.<sup>2</sup> The EPA concurred that actual emissions from Fort Bragg were less than 0.5 tons and did not require monitoring at the fence line of the facility.

Any new **ozone monitoring** requirements should not result in additional monitoring in the Fayetteville area. It already has the required number of population exposure monitors for MSAs of its size. There are no Class I Areas so it will not meet the requirements for rural monitoring. The 2010 **nitrogen dioxide** monitoring requirements will not result in additional monitoring in the Fayetteville MSA. The MSA is too small to require area-wide monitors and does not have any roadways with average annual daily traffic above the threshold for near roadway monitoring. There are no large sources of sulfur dioxide in the MSA and the population is not large enough to require a PWEI monitor so the 2010 **sulfur dioxide monitoring** requirements will not result in additional sulfur dioxide monitoring in the Fayetteville MSA. Changes to the **carbon dioxide monitoring** requirements will also not result in additional monitoring in this area because the population is too small.

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<sup>2</sup> Data obtained from the Toxics Release Inventory, available on the worldwide web at <http://www.epa.gov/>

## Appendix E.1 Annual Network Site Review Forms for 2011

Candor

Linkhaw in Lumberton

Clinton Crops in Clinton

Golfview

Wade

William Owen in Fayetteville

## Site Review Form Calendar Year 2011

### Site Information

<b>Region</b> <u>FRO</u>	<b>Site Name</b> <u>Candor</u>	<b>AQS Site #</b> <u>37-123 - 0001</u>
<b>Street Address</b> <u>121 Perry Dr</u>		<b>City</b> <u>Candor</u>
<b>Urban Area</b> <u>Not in an Urban Area</u>	<b>Core-based Statistical Area</b> <u>None</u>	
<b>Enter Exact</b>		
<b>Longitude</b> <u>-79.836613</u>	<b>Latitude</b> <u>35.26249</u>	<b>Method of Measuring</b>
<small>In Decimal Degrees</small>	<small>In Decimal Degrees</small>	<b>Interpolation</b> <u>Explanation: <b>Google Earth</b></u>
<b>Elevation Above/below Mean Sea Level (in meters)</b>		<u>173</u>
Name of nearest road to inlet probe <u>McCallum Rd</u> ADT <u>260</u> Year <u>2009</u>		
Comments: _____		
Distance of site to nearest major road (m) <u>5954.82</u> Direction from site to nearest major road <u>S</u>		
Name of nearest major road <u>Hwy 731</u> ADT <u>1300</u> Year <u>2010</u>		
Comments: _____		
Site located near electrical substation/high voltage power lines?		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Distance of site to nearest railroad track	(m) <u>8787</u> Direction to RR <u>ENE</u> <input type="checkbox"/> NA	
Distance of site to nearest power pole w/transformer	(m) <u>10</u> Direction <u>SSW</u>	
Distance between site and drip line of water tower (m)	Direction from site to water tower <input checked="" type="checkbox"/> 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.		
<u>None expected</u>		

#### ANSWER ALL APPLICABLE QUESTIONS:

Parameters	Monitoring Objective	Scale	Site Type
<input checked="" type="checkbox"/> NA <input type="checkbox"/> SO <sub>2</sub> (NAAQS) <input type="checkbox"/> SO <sub>2</sub> (trace-level) <input type="checkbox"/> NO <sub>x</sub> (NAAQS) <input type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> O <sub>3</sub> <input type="checkbox"/> NH <sub>3</sub> <input type="checkbox"/> Hydrocarbon <input type="checkbox"/> Air Toxics <input type="checkbox"/> HSCO (Not Micro) <input type="checkbox"/> CO (trace-level)	<input type="checkbox"/> General/Background <input type="checkbox"/> Highest Concentration <input type="checkbox"/> Max O <sub>3</sub> Concentration <input type="checkbox"/> Population Exposure <input type="checkbox"/> Source Oriented <input type="checkbox"/> Transport <input type="checkbox"/> Upwind Background <input type="checkbox"/> Welfare Related Impacts _____	<input type="checkbox"/> Micro <input type="checkbox"/> Middle <input type="checkbox"/> Neighborhood <input type="checkbox"/> Urban <input type="checkbox"/> Regional	<input type="checkbox"/> SLAMS <input type="checkbox"/> NCORE <input type="checkbox"/> SPM <input type="checkbox"/> SPM/OPN <input type="checkbox"/> NONREGULATORY
Probe inlet height (from ground) 2-15 m? Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual measured height from ground (meters) _____			
Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes <input type="checkbox"/> No <input type="checkbox"/>			
Actual measured distance from probe to supporting structure (meters) _____			
Distance of probe inlet from other monitoring probe inlets > 1 m? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>			
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *'d questions)			
*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/>			
*Distance from probe to tree (m) _____ Direction from probe to tree _____			
*Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *'d questions) No <input type="checkbox"/>			
*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 <input type="checkbox"/> No <input type="checkbox"/>			
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
<input checked="" type="checkbox"/> NA <input type="checkbox"/> CO (Micro Only)	<input type="checkbox"/> Highest Concentration _____ <input type="checkbox"/> Population Exposure _____ <input type="checkbox"/> Source Oriented _____ <input type="checkbox"/> Transport _____ <input type="checkbox"/> Welfare Related Impacts _____	<input type="checkbox"/> Micro _____	<input type="checkbox"/> SLAMS _____ <input type="checkbox"/> SPM _____ <input type="checkbox"/> SPM/OPN _____ <input type="checkbox"/> NONREGULATORY
Probe inlet height (from ground) 2.5 - 3.5 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></span> Actual measured distance from probe inlet to ground (meters) _____			
Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></span> Actual measured distance from probe to supporting structure (meters) _____			
Distance of probe inlet to nearest intersection > 10 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></span> Distance of probe inlet to nearest traffic lane 2 - 10 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></span>			
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *'d questions)			
*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/>			
*Distance from probe to tree (m) _____ Direction from probe to tree _____			
*Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *'d questions) No <input type="checkbox"/>			
*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 <input type="checkbox"/> No <input type="checkbox"/>			
Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane _____			

Parameters	Monitoring Objective	Scale	Site Type
<input checked="" type="checkbox"/> NA <input type="checkbox"/> NO <sub>y</sub> (trace-level)	<input type="checkbox"/> General/Background _____ <input type="checkbox"/> Highest Concentration _____ <input type="checkbox"/> Max O <sub>3</sub> Concentration _____ <input type="checkbox"/> Population Exposure _____ <input type="checkbox"/> Source Oriented _____ <input type="checkbox"/> Transport _____ <input type="checkbox"/> Upwind Background _____ <input type="checkbox"/> Welfare Related Impacts _____	<input type="checkbox"/> Micro _____ <input type="checkbox"/> Middle _____ <input type="checkbox"/> Neighborhood _____ <input type="checkbox"/> Urban _____ <input type="checkbox"/> Regional _____	<input type="checkbox"/> SLAMS _____ <input type="checkbox"/> NCORE _____ <input type="checkbox"/> SPM _____ <input type="checkbox"/> SPM/OPN _____ <input type="checkbox"/> NONREGULATORY
Probe inlet height (from ground) 10-15 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></span> Actual measured distance from probe inlet to ground (meters) _____			
Distance of probe inlet from horizontal and/or vertical supporting structure > 1 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></span> Actual measured distance from probe to supporting structure (meters) _____			
Distance of probe inlet from other monitoring probe inlets > 1 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/></span>			
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *'d questions)			
*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/>			
*Distance from probe to tree (m) _____ Direction from probe to tree _____			
*Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *'d questions) No <input type="checkbox"/>			
*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 <input type="checkbox"/> No <input type="checkbox"/>			
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
<input checked="" type="checkbox"/> NA <input type="checkbox"/> NO <sub>2</sub> (Near Road only) <input type="checkbox"/> CO (Near Road only)	<input type="checkbox"/> Highest Concentration _____ <input type="checkbox"/> Population Exposure _____ <input type="checkbox"/> Source Oriented _____ <input type="checkbox"/> Transport _____ <input type="checkbox"/> Welfare Related Impacts _____	<input type="checkbox"/> Micro _____	<input type="checkbox"/> SLAMS _____ <input type="checkbox"/> SPM _____ <input type="checkbox"/> NONREGULATORY _____
Probe inlet height (from ground) 2-15 m? Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual measured height from ground (meters) _____ Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes <input type="checkbox"/> No <input type="checkbox"/> Actual measured distance from probe to supporting structure (meters) _____ Distance of probe inlet from other monitoring probe inlets > 1 m? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>			
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *d questions) *Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/> *Distance from probe to tree (m) _____ Direction from probe to tree _____ *Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *d questions) No <input type="checkbox"/> *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 <input type="checkbox"/> No <input type="checkbox"/> Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane _____			

Parameters	Monitoring Objective	Scale	Site Type
<input type="checkbox"/> NA Air flow > 200 L/min <input checked="" type="checkbox"/> PM10 <input type="checkbox"/> TSP <input type="checkbox"/> Pb	<input type="checkbox"/> Highest Concentration _____ <input type="checkbox"/> Population Exposure _____ <input type="checkbox"/> Source Oriented _____ <input checked="" type="checkbox"/> Background _____ <input type="checkbox"/> Transport _____ <input type="checkbox"/> Welfare Related Impacts _____	<input type="checkbox"/> Micro _____ <input type="checkbox"/> Middle _____ <input type="checkbox"/> Neighborhood _____ <input type="checkbox"/> Urban _____ <input checked="" type="checkbox"/> Regional _____	<input type="checkbox"/> SLAMS _____ <input type="checkbox"/> NCORE _____ <input checked="" type="checkbox"/> SPM _____ <input type="checkbox"/> NONREGULATORY _____
Probe inlet height (from ground) <input type="checkbox"/> < 2 m _____ <input checked="" type="checkbox"/> 2-7m _____ <input type="checkbox"/> 7-15 m _____ <input type="checkbox"/> > 15 m _____ Actual measured distance from probe inlet to ground (meters) <u>3.17</u>			
Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Actual measured distance from probe to supporting structure (meters) <u>2.87</u>			
Distance between collocated PM-10, TSP or Pb sampler inlets = 2 to 4 m? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/> Actual measured distance between collocated probes (meters) _____ Distance between any high volume inlet and any other high or low volume inlet ≥ 2 m? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>			
Is probe > 20 m from the nearest tree drip line? Yes <input checked="" type="checkbox"/> *No <input type="checkbox"/> (answer *d questions) *Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/> *Distance from probe to tree (m) _____ Direction from probe to tree _____ *Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *d questions) No <input checked="" type="checkbox"/> *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 <input type="checkbox"/> No <input type="checkbox"/> Distance of probe to nearest traffic lane (m) <u>1079</u> Direction from probe to nearest traffic lane <u>NNE</u>			

## Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
<input type="checkbox"/> NA Air flow < 200 L/min <input checked="" type="checkbox"/> PM2.5 <input type="checkbox"/> PM10 <input type="checkbox"/> PM10-2.5 <input type="checkbox"/> PM10 Lead (PB) <input type="checkbox"/> PM2.5 Cont. (TEOM) <input type="checkbox"/> PM2.5 Cont. (BAM) <input type="checkbox"/> PM2.5 Spec. (SASS) <input type="checkbox"/> PM2.5 Spec. (URG) <input type="checkbox"/> PM2.5 Cont. Spec.	<input checked="" type="checkbox"/> General/Background <input type="checkbox"/> Highest Concentration <input type="checkbox"/> Population Exposure <input type="checkbox"/> Source Oriented <input type="checkbox"/> Transport <input type="checkbox"/> Upwind Background <input checked="" type="checkbox"/> Welfare Related Impacts	<input type="checkbox"/> Micro <input type="checkbox"/> Middle <input type="checkbox"/> Neighborhood <input type="checkbox"/> Urban <input checked="" type="checkbox"/> Regional	<input checked="" type="checkbox"/> SLAMS <input type="checkbox"/> N CORE <input type="checkbox"/> SPM <input type="checkbox"/> NONREGULATORY
Probe inlet height (from ground) <input type="checkbox"/> < 2 m <input checked="" type="checkbox"/> 2-7m <input type="checkbox"/> 7-15 m <input type="checkbox"/> > 15 m Actual measured distance from probe inlet to ground (meters) <u>2.46</u>			
Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Distance between inlets of any low volume monitor and any other low volume monitor at the site = 1 m or greater?			Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/>
Distance between all low volume monitor inlets and any Hi-Volume PM-10 or TSP inlet = 2 m or greater?			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Are collocated PM2.5 Monitors (Two FRMs, FRM & BAM, FRM & TEOM, BAM & TEOM) Located at Site?		*Yes <input type="checkbox"/> (answer *d questions) No <input checked="" type="checkbox"/> NA <input type="checkbox"/>	
*Distance between collocated PM 2.5 sampler inlets = 1 to 4 m?		Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual (meters) _____	
*Are collocated PM2.5 sampler inlets within 1 m vertically of each other?		Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual (meters) _____	
Is an URG 3000 monitor collocated with a SASS monitor at the site?		*Yes <input type="checkbox"/> (answer *d questions) No <input checked="" type="checkbox"/> NA <input type="checkbox"/>	
*Distance between collocated speciation sampler inlets = 1 to 4 m?		Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual (meters) _____	
*Are collocated speciation sampler inlets within 1 m vertically of each other?		Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual (meters) _____	
Is a low-volume PM10 monitor collocated with a PM2.5 monitor at the site to measure PM10-2.5?		*Yes <input type="checkbox"/> (answer *d questions) No <input checked="" type="checkbox"/> NA <input type="checkbox"/>	
*Distance between collocated PM10 and PM2.5 inlets for PM10-2.5 samplers = 1 to 4 m?		Yes <input type="checkbox"/> No <input type="checkbox"/>	
*Are collocated PM10 and PM2.5 sampler inlets within 1 m vertically of each other?		Yes <input type="checkbox"/> No <input type="checkbox"/>	
Is probe > 20 m from the nearest tree drip line? Yes <input checked="" type="checkbox"/> *No <input type="checkbox"/> (answer *d questions)			
*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/>			
*Distance from probe to tree (m) _____ Direction from probe to tree _____			
*Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *d questions) No <input checked="" type="checkbox"/>			
*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 <input type="checkbox"/> No <input type="checkbox"/>			
Distance of probe to nearest traffic lane (m) <u>1079</u> Direction from probe to nearest traffic lane <u>NNE</u>			

**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 Jennifer McHone Sides Date January 4, 2012

Ambient Monitoring Coordinator Mitchell Revels Date January 10, 2012

Revised 2012-01-12.

## Site Review Form Calendar Year 2011

### Site Information

<b>Region</b> <u>FRO</u>	<b>Site Name</b> <u>Linkhaw</u>	<b>AQS Site #</b> <u>37-155-0005</u>
<b>Street Address</b> <u>1170 Linkhaw Rd</u>		<b>City</b> <u>Lumberton</u>
<b>Urban Area</b> <u>LUMBERTON</u>	<b>Core-based Statistical Area</b> <u>Lumberton, NC</u>	
<b>Enter Exact</b>		
<b>Longitude</b> <u>-78.99028</u>	<b>Latitude</b> <u>34.6450</u>	<b>Method of Measuring</b>
In Decimal Degrees	In Decimal Degrees	<b>Interpolation</b>   <b>Explanation:</b> <u>Google Earth</u>
<b>Elevation Above/below Mean Sea Level (in meters)</b>		<u>41</u>
Name of nearest road to inlet probe <u>Linkhaw Rd</u> ADT <u>9200</u> Year latest available <u>2009</u>		
Comments: _____		
Distance of site to nearest major road (m) <u>965.60</u> Direction from site to nearest major road <u>E</u>		
Name of nearest major road <u>Fayetteville Rd</u> ADT <u>30000</u> Year <u>2010</u>		
Comments: _____		
Site located near electrical substation/high voltage power lines?		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Distance of site to nearest railroad track	(m) <u>716</u> Direction to RR <u>W</u>	<input type="checkbox"/> NA
Distance of site to nearest power pole w/transformer	(m) <u>56</u> Direction <u>NNE</u>	
Distance between site and drip line of water tower (m)	Direction from site to water tower	<input checked="" type="checkbox"/> 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.		
<u>cultivated fields.</u>		

#### ANSWER ALL APPLICABLE QUESTIONS:

Parameters	Monitoring Objective	Scale	Site Type
<input checked="" type="checkbox"/> NA <input type="checkbox"/> SO <sub>2</sub> (NAAQS) <input type="checkbox"/> SO <sub>2</sub> (trace-level) <input type="checkbox"/> NO <sub>x</sub> (NAAQS) <input type="checkbox"/> HSN <sub>2</sub> O <sub>y</sub> <input type="checkbox"/> O <sub>3</sub> <input type="checkbox"/> NH <sub>3</sub> <input type="checkbox"/> Hydrocarbon <input type="checkbox"/> Air Toxics <input type="checkbox"/> HSCO (Not Micro) <input type="checkbox"/> CO (trace-level)	<input type="checkbox"/> General/Background <input type="checkbox"/> Highest Concentration <input type="checkbox"/> Max O <sub>3</sub> Concentration <input type="checkbox"/> Population Exposure <input type="checkbox"/> Source Oriented <input type="checkbox"/> Transport <input type="checkbox"/> Upwind Background <input type="checkbox"/> Welfare Related Impacts	<input type="checkbox"/> Micro <input type="checkbox"/> Middle <input type="checkbox"/> Neighborhood <input type="checkbox"/> Urban <input type="checkbox"/> Regional	<input type="checkbox"/> SLAMS <input type="checkbox"/> NCORE <input type="checkbox"/> SPM <input type="checkbox"/> SPM/OPN <input type="checkbox"/> NONREGULATORY
Probe inlet height (from ground) 2-15 m? Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual measured height from ground (meters) _____			
Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes <input type="checkbox"/> No <input type="checkbox"/>			
Actual measured distance from probe to supporting structure (meters) _____			
Distance of probe inlet from other monitoring probe inlets > 1 m? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>			
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *'d questions)			
*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/>			
*Distance from probe to tree (m) _____ Direction from probe to tree _____			
*Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *'d questions) No <input type="checkbox"/>			
*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 <input type="checkbox"/> No <input type="checkbox"/>			
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
<input checked="" type="checkbox"/> NA <input type="checkbox"/> CO (Micro Only)	<input type="checkbox"/> Highest Concentration _____ <input type="checkbox"/> Population Exposure _____ <input type="checkbox"/> Source Oriented _____ <input type="checkbox"/> Transport _____ <input type="checkbox"/> Welfare Related Impacts _____	<input type="checkbox"/> Micro _____	<input type="checkbox"/> SLAMS _____ <input type="checkbox"/> SPM _____ <input type="checkbox"/> SPM/OPN _____ <input type="checkbox"/> NONREGULATORY
Probe inlet height (from ground) 2.5 - 3.5 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></span> Actual measured distance from probe inlet to ground (meters) _____			
Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></span> Actual measured distance from probe to supporting structure (meters) _____			
Distance of probe inlet to nearest intersection > 10 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></span> Distance of probe inlet to nearest traffic lane 2 - 10 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></span>			
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *'d questions)			
*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/> *Distance from probe to tree (m) _____ Direction from probe to tree _____ *Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *'d questions) No <input type="checkbox"/>			
*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 <input type="checkbox"/> No <input type="checkbox"/>			
Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane _____			

Parameters	Monitoring Objective	Scale	Site Type
<input checked="" type="checkbox"/> NA <input type="checkbox"/> NO <sub>y</sub> (trace-level)	<input type="checkbox"/> General/Background _____ <input type="checkbox"/> Highest Concentration _____ <input type="checkbox"/> Max O <sub>3</sub> Concentration _____ <input type="checkbox"/> Population Exposure _____ <input type="checkbox"/> Source Oriented _____ <input type="checkbox"/> Transport _____ <input type="checkbox"/> Upwind Background _____ <input type="checkbox"/> Welfare Related Impacts _____	<input type="checkbox"/> Micro _____ <input type="checkbox"/> Middle _____ <input type="checkbox"/> Neighborhood _____ <input type="checkbox"/> Urban _____ <input type="checkbox"/> Regional _____	<input type="checkbox"/> SLAMS _____ <input type="checkbox"/> NCORE _____ <input type="checkbox"/> SPM _____ <input type="checkbox"/> SPM/OPN _____ <input type="checkbox"/> NONREGULATORY
Probe inlet height (from ground) 10-15 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></span> Actual measured distance from probe inlet to ground (meters) _____			
Distance of probe inlet from horizontal and/or vertical supporting structure > 1 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></span> Actual measured distance from probe to supporting structure (meters) _____			
Distance of probe inlet from other monitoring probe inlets > 1 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/></span>			
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *'d questions)			
*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/> *Distance from probe to tree (m) _____ Direction from probe to tree _____ *Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *'d questions) No <input type="checkbox"/>			
*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 <input type="checkbox"/> No <input type="checkbox"/>			
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
<input checked="" type="checkbox"/> NA <input type="checkbox"/> NO <sub>2</sub> (Near Road only) <input type="checkbox"/> CO (Near Road only)	<input type="checkbox"/> Highest Concentration _____ <input type="checkbox"/> Population Exposure _____ <input type="checkbox"/> Source Oriented _____ <input type="checkbox"/> Transport _____ <input type="checkbox"/> Welfare Related Impacts _____	<input type="checkbox"/> Micro _____	<input type="checkbox"/> SLAMS _____ <input type="checkbox"/> SPM _____ <input type="checkbox"/> NONREGULATORY _____
Probe inlet height (from ground) 2-15 m? Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual measured height from ground (meters) _____ Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes <input type="checkbox"/> No <input type="checkbox"/> Actual measured distance from probe to supporting structure (meters) _____ Distance of probe inlet from other monitoring probe inlets > 1 m? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>			
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *'d questions) *Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/> *Distance from probe to tree (m) _____ Direction from probe to tree _____ *Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *'d questions) No <input type="checkbox"/> *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 <input type="checkbox"/> No <input type="checkbox"/> Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane _____			

Parameters	Monitoring Objective	Scale	Site Type
<input checked="" type="checkbox"/> NA Air flow > 200 L/min <input type="checkbox"/> PM10 <input type="checkbox"/> TSP <input type="checkbox"/> Pb	<input type="checkbox"/> Highest Concentration _____ <input type="checkbox"/> Population Exposure _____ <input type="checkbox"/> Source Oriented _____ <input type="checkbox"/> Background _____ <input type="checkbox"/> Transport _____ <input type="checkbox"/> Welfare Related Impacts _____	<input type="checkbox"/> Micro _____ <input type="checkbox"/> Middle _____ <input type="checkbox"/> Neighborhood _____ <input type="checkbox"/> Urban _____ <input type="checkbox"/> Regional _____	<input type="checkbox"/> SLAMS _____ <input type="checkbox"/> NCORE _____ <input type="checkbox"/> SPM _____ <input type="checkbox"/> NONREGULATORY _____
Probe inlet height (from ground) <input type="checkbox"/> < 2 m _____ <input type="checkbox"/> 2-7m _____ <input type="checkbox"/> 7-15 m _____ <input type="checkbox"/> > 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 <input type="checkbox"/> No <input type="checkbox"/> Actual measured distance from probe to supporting structure (meters) _____			
Distance between collocated PM-10, TSP or Pb sampler inlets = 2 to 4 m? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/> Actual measured distance between collocated probes (meters) _____			
Distance between any high volume inlet and any other high or low volume inlet ≥ 2 m? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>			
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *'d questions) *Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/> *Distance from probe to tree (m) _____ Direction from probe to tree _____ *Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *'d questions) No <input type="checkbox"/> *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 <input type="checkbox"/> No <input type="checkbox"/> 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
<input type="checkbox"/> NA Air flow < 200 L/min <input checked="" type="checkbox"/> PM2.5 <input type="checkbox"/> PM10 <input type="checkbox"/> PM10-2.5 <input type="checkbox"/> PM10 Lead (PB) <input type="checkbox"/> PM2.5 Cont. (TEOM) <input type="checkbox"/> PM2.5 Cont. (BAM) <input type="checkbox"/> PM2.5 Spec. (SASS) <input type="checkbox"/> PM2.5 Spec. (URG) <input type="checkbox"/> PM2.5 Cont. Spec.	<input type="checkbox"/> General/Background <input type="checkbox"/> Highest Concentration <input checked="" type="checkbox"/> Population Exposure <input type="checkbox"/> Source Oriented <input type="checkbox"/> Transport <input type="checkbox"/> Upwind Background <input type="checkbox"/> Welfare Related Impacts	<input type="checkbox"/> Micro <input type="checkbox"/> Middle <input checked="" type="checkbox"/> Neighborhood <input type="checkbox"/> Urban <input type="checkbox"/> Regional	<input checked="" type="checkbox"/> SLAMS <input type="checkbox"/> NCORE <input type="checkbox"/> SPM <input type="checkbox"/> NONREGULATORY
Probe inlet height (from ground) <input type="checkbox"/> < 2 m <input checked="" type="checkbox"/> 2-7m <input type="checkbox"/> 7-15 m <input type="checkbox"/> > 15 m Actual measured distance from probe inlet to ground (meters) <u>2.33</u>			
Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Distance between inlets of any low volume monitor and any other low volume monitor at the site = 1 m or greater?			Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/>
Distance between all low volume monitor inlets and any Hi-Volume PM-10 or TSP inlet = 2 m or greater?			Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/>
Are collocated PM2.5 Monitors (Two FRMs, FRM & BAM, FRM & TEOM, BAM & TEOM) Located at Site?		*Yes <input type="checkbox"/> (answer *d questions) No <input type="checkbox"/> NA <input checked="" type="checkbox"/>	
*Distance between collocated PM 2.5 sampler inlets = 1 to 4 m?		Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual (meters) _____	
*Are collocated PM2.5 sampler inlets within 1 m vertically of each other?		Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual (meters) _____	
Is an URG 3000 monitor collocated with a SASS monitor at the site?		*Yes <input type="checkbox"/> (answer *d questions) No <input type="checkbox"/> NA <input checked="" type="checkbox"/>	
*Distance between collocated speciation sampler inlets = 1 to 4 m?		Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual (meters) _____	
*Are collocated speciation sampler inlets within 1 m vertically of each other?		Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual (meters) _____	
Is a low-volume PM10 monitor collocated with a PM2.5 monitor at the site to measure PM10-2.5?		*Yes <input type="checkbox"/> (answer *d questions) No <input type="checkbox"/> NA <input checked="" type="checkbox"/>	
*Distance between collocated PM10 and PM2.5 inlets for PM10-2.5 samplers = 1 to 4 m?		Yes <input type="checkbox"/> No <input type="checkbox"/>	
*Are collocated PM10 and PM2.5 sampler inlets within 1 m vertically of each other?		Yes <input type="checkbox"/> No <input type="checkbox"/>	
Is probe > 20 m from the nearest tree drip line? Yes <input checked="" type="checkbox"/> *No <input type="checkbox"/> (answer *d questions)			
*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/>			
*Distance from probe to tree (m) _____ Direction from probe to tree _____			
*Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *d questions) No <input checked="" type="checkbox"/>			
*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 <input type="checkbox"/> No <input type="checkbox"/>			
Distance of probe to nearest traffic lane (m) <u>40</u> Direction from probe to nearest traffic lane <u>N</u>			

**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 Jennifer McHone Sides Date January 4, 2012

Ambient Monitoring Coordinator Mitchell Revels Date January 10, 2012

Revised 2012-01-12

## Site Review Form Calendar Year 2011

### Site Information

<b>Region</b> <u>FRO</u>		<b>Site Name</b> <u>Clinton Crops</u>		<b>AQS Site #</b> <u>37-163-0005</u>	
<b>Street Address</b> <u>2450 Faison Highway</u>				<b>City</b> <u>Clinton</u>	
<b>Urban Area</b> <u>CLINTON</u>			<b>Core-based Statistical Area</b> <u>None</u>		
<b>Enter Exact</b>					
<b>Longitude</b> <u>-78.2819</u>		<b>Latitude</b> <u>35.0228</u>		<b>Method of Measuring</b> <b>Explanation:</b> <u>GPS</u>	
In Decimal Degrees		In Decimal Degrees			
<b>Elevation Above/below Mean Sea Level (in meters)</b> <u>47</u>					
Name of nearest road to inlet probe <u>Faison Highway</u> ADT <u>8700</u> Year <u>2010</u>					
Comments: _____					
Distance of site to nearest major road (m) <u>241.00</u> Direction from site to nearest major road <u>E</u>					
Name of nearest major road <u>Faison Highway</u> ADT <u>8700</u> Year <u>2010</u>					
Comments: _____					
Site located near electrical substation/high voltage power lines?					Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Distance of site to nearest railroad track				(m) <u>456</u> Direction to RR <u>S</u> <input type="checkbox"/> NA	
Distance of site to nearest power pole w/transformer				(m) <u>283</u> Direction <u>SE</u>	
Distance between site and drip line of water tower (m)				Direction from site to water tower <input checked="" type="checkbox"/> 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.					
<u>Cultivated Fields</u>					

#### ANSWER ALL APPLICABLE QUESTIONS:

Parameters	Monitoring Objective	Scale	Site Type
<input type="checkbox"/> NA <input type="checkbox"/> SO <sub>2</sub> (NAAQS) <input type="checkbox"/> SO <sub>2</sub> (trace-level) <input type="checkbox"/> NO <sub>x</sub> (NAAQS) <input type="checkbox"/> HSN <sub>2</sub> O <sub>y</sub> <input type="checkbox"/> O <sub>3</sub> <input checked="" type="checkbox"/> NH <sub>3</sub> <input type="checkbox"/> Hydrocarbon <input type="checkbox"/> Air Toxics <input type="checkbox"/> HSCO (Not Micro) <input type="checkbox"/> CO (trace-level)	<input type="checkbox"/> General/Background <input type="checkbox"/> Highest Concentration <input type="checkbox"/> Max O <sub>3</sub> Concentration <input type="checkbox"/> Population Exposure <input type="checkbox"/> Source Oriented <input checked="" type="checkbox"/> Transport <input type="checkbox"/> Upwind Background <input type="checkbox"/> Welfare Related Impacts	<input type="checkbox"/> Micro <input type="checkbox"/> Middle <input type="checkbox"/> Neighborhood <input type="checkbox"/> Urban <input checked="" type="checkbox"/> Regional	<input type="checkbox"/> SLAMS <input type="checkbox"/> NCORE <input checked="" type="checkbox"/> SPM <input type="checkbox"/> SPM/OPN <input type="checkbox"/> NONREGULATORY
Probe inlet height (from ground) 2-15 m? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Give actual measured height from ground (meters) <u>4</u>			
Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Actual measured distance from probe to supporting structure (meters) <u>2</u>			
Distance of probe inlet from other monitoring probe inlets > 1 m? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/>			
Is probe > 20 m from the nearest tree drip line? Yes <input checked="" type="checkbox"/> *No <input type="checkbox"/> (answer *'d questions)			
*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/>			
*Distance from probe to tree (m) _____ Direction from probe to tree _____			
*Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *'d questions) No <input checked="" type="checkbox"/>			
*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 <input type="checkbox"/> No <input type="checkbox"/>			
Distance of probe to nearest traffic lane (m) <u>241</u> Direction from probe to nearest traffic lane <u>E</u>			

## Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
<input checked="" type="checkbox"/> NA <input type="checkbox"/> CO (Micro Only)	<input type="checkbox"/> Highest Concentration _____ <input type="checkbox"/> Population Exposure _____ <input type="checkbox"/> Source Oriented _____ <input type="checkbox"/> Transport _____ <input type="checkbox"/> Welfare Related Impacts _____	<input type="checkbox"/> Micro _____	<input type="checkbox"/> SLAMS _____ <input type="checkbox"/> SPM _____ <input type="checkbox"/> SPM/OPN _____ <input type="checkbox"/> NONREGULATORY
Probe inlet height (from ground) 2.5 - 3.5 m? Yes <input type="checkbox"/> No <input type="checkbox"/> 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 <input type="checkbox"/> No <input type="checkbox"/> Actual measured distance from probe to supporting structure (meters) _____			
Distance of probe inlet to nearest intersection > 10 m? Yes <input type="checkbox"/> No <input type="checkbox"/> Distance of probe inlet to nearest traffic lane 2 - 10 m? Yes <input type="checkbox"/> No <input type="checkbox"/>			
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *'d questions)			
*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/>			
*Distance from probe to tree (m) _____ Direction from probe to tree ____			
*Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *'d questions) No <input type="checkbox"/>			
*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 <input type="checkbox"/> No <input type="checkbox"/>			
Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ____			

Parameters	Monitoring Objective	Scale	Site Type
<input checked="" type="checkbox"/> NA <input type="checkbox"/> NO <sub>y</sub> (trace-level)	<input type="checkbox"/> General/Background _____ <input type="checkbox"/> Highest Concentration _____ <input type="checkbox"/> Max O <sub>3</sub> Concentration _____ <input type="checkbox"/> Population Exposure _____ <input type="checkbox"/> Source Oriented _____ <input type="checkbox"/> Transport _____ <input type="checkbox"/> Upwind Background _____ <input type="checkbox"/> Welfare Related Impacts _____	<input type="checkbox"/> Micro _____ <input type="checkbox"/> Middle _____ <input type="checkbox"/> Neighborhood _____ <input type="checkbox"/> Urban _____ <input type="checkbox"/> Regional _____	<input type="checkbox"/> SLAMS _____ <input type="checkbox"/> NCORE _____ <input type="checkbox"/> SPM _____ <input type="checkbox"/> SPM/OPN _____ <input type="checkbox"/> NONREGULATORY
Probe inlet height (from ground) 10-15 m? Yes <input type="checkbox"/> No <input type="checkbox"/> Actual measured distance from probe inlet to ground (meters) _____			
Distance of probe inlet from horizontal and/or vertical supporting structure > 1 m? Yes <input type="checkbox"/> No <input type="checkbox"/> Actual measured distance from probe to supporting structure (meters) _____			
Distance of probe inlet from other monitoring probe inlets > 1 m? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>			
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *'d questions)			
*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/>			
*Distance from probe to tree (m) _____ Direction from probe to tree ____			
*Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *'d questions) No <input type="checkbox"/>			
*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 <input type="checkbox"/> No <input type="checkbox"/>			
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
<input checked="" type="checkbox"/> NA <input type="checkbox"/> NO <sub>2</sub> (Near Road only) <input type="checkbox"/> CO (Near Road only)	<input type="checkbox"/> Highest Concentration _____ <input type="checkbox"/> Population Exposure _____ <input type="checkbox"/> Source Oriented _____ <input type="checkbox"/> Transport _____ <input type="checkbox"/> Welfare Related Impacts _____	<input type="checkbox"/> Micro _____	<input type="checkbox"/> SLAMS _____ <input type="checkbox"/> SPM _____ <input type="checkbox"/> NONREGULATORY _____
Probe inlet height (from ground) 2-15 m? Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual measured height from ground (meters) _____ Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes <input type="checkbox"/> No <input type="checkbox"/> Actual measured distance from probe to supporting structure (meters) _____ Distance of probe inlet from other monitoring probe inlets > 1 m? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>			
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *'d questions) *Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/> *Distance from probe to tree (m) _____ Direction from probe to tree _____ *Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *'d questions) No <input type="checkbox"/> *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 <input type="checkbox"/> No <input type="checkbox"/> Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane _____			

Parameters	Monitoring Objective	Scale	Site Type
<input checked="" type="checkbox"/> NA Air flow > 200 L/min <input type="checkbox"/> PM10 <input type="checkbox"/> TSP <input type="checkbox"/> Pb	<input type="checkbox"/> Highest Concentration _____ <input type="checkbox"/> Population Exposure _____ <input type="checkbox"/> Source Oriented _____ <input type="checkbox"/> Background _____ <input type="checkbox"/> Transport _____ <input type="checkbox"/> Welfare Related Impacts _____	<input type="checkbox"/> Micro _____ <input type="checkbox"/> Middle _____ <input type="checkbox"/> Neighborhood _____ <input type="checkbox"/> Urban _____ <input type="checkbox"/> Regional _____	<input type="checkbox"/> SLAMS _____ <input type="checkbox"/> NCORE _____ <input type="checkbox"/> SPM _____ <input type="checkbox"/> NONREGULATORY _____
Probe inlet height (from ground) <input type="checkbox"/> < 2 m _____ <input type="checkbox"/> 2-7m _____ <input type="checkbox"/> 7-15 m _____ <input type="checkbox"/> > 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 <input type="checkbox"/> No <input type="checkbox"/> Actual measured distance from probe to supporting structure (meters) _____			
Distance between collocated PM-10, TSP or Pb sampler inlets = 2 to 4 m? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/> Actual measured distance between collocated probes (meters) _____			
Distance between any high volume inlet and any other high or low volume inlet ≥ 2 m? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>			
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *'d questions) *Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/> *Distance from probe to tree (m) _____ Direction from probe to tree _____ *Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *'d questions) No <input type="checkbox"/> *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 <input type="checkbox"/> No <input type="checkbox"/> 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
<input checked="" type="checkbox"/> NA Air flow < 200 L/min <input type="checkbox"/> PM2.5 <input type="checkbox"/> PM10 <input type="checkbox"/> PM10-2.5 <input type="checkbox"/> PM10 Lead (PB) <input type="checkbox"/> PM2.5 Cont. (TEOM) <input type="checkbox"/> PM2.5 Cont. (BAM) <input type="checkbox"/> PM2.5 Spec. (SASS) <input type="checkbox"/> PM2.5 Spec. (URG) <input type="checkbox"/> PM2.5 Cont. Spec.	<input type="checkbox"/> General/Background <input type="checkbox"/> Highest Concentration <input type="checkbox"/> Population Exposure <input type="checkbox"/> Source Oriented <input type="checkbox"/> Transport <input type="checkbox"/> Upwind Background <input type="checkbox"/> Welfare Related Impacts	<input type="checkbox"/> Micro <input type="checkbox"/> Middle <input type="checkbox"/> Neighborhood <input type="checkbox"/> Urban <input type="checkbox"/> Regional	<input type="checkbox"/> SLAMS <input type="checkbox"/> N CORE <input type="checkbox"/> SPM <input type="checkbox"/> NONREGULATORY
Probe inlet height (from ground) <input type="checkbox"/> < 2 m <input type="checkbox"/> 2-7m <input type="checkbox"/> 7-15 m <input type="checkbox"/> > 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 <input type="checkbox"/> No <input type="checkbox"/>			
Distance between inlets of any low volume monitor and any other low volume monitor at the site = 1 m or greater?			Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Distance between all low volume monitor inlets and any Hi-Volume PM-10 or TSP inlet = 2 m or greater?			Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Are collocated PM2.5 Monitors (Two FRMs, FRM & BAM, FRM & TEOM, BAM & TEOM) Located at Site?		*Yes <input type="checkbox"/> (answer *d questions) No <input type="checkbox"/> NA <input type="checkbox"/>	
*Distance between collocated PM 2.5 sampler inlets = 1 to 4 m?		Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual (meters) _____	
*Are collocated PM2.5 sampler inlets within 1 m vertically of each other?		Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual (meters) _____	
Is an URG 3000 monitor collocated with a SASS monitor at the site?		*Yes <input type="checkbox"/> (answer *d questions) No <input type="checkbox"/> NA <input type="checkbox"/>	
*Distance between collocated speciation sampler inlets = 1 to 4 m?		Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual (meters) _____	
*Are collocated speciation sampler inlets within 1 m vertically of each other?		Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual (meters) _____	
Is a low-volume PM10 monitor collocated with a PM2.5 monitor at the site to measure PM10-2.5?		*Yes <input type="checkbox"/> (answer *d questions) No <input type="checkbox"/> NA <input type="checkbox"/>	
*Distance between collocated PM10 and PM2.5 inlets for PM10-2.5 samplers = 1 to 4 m?		Yes <input type="checkbox"/> No <input type="checkbox"/>	
*Are collocated PM10 and PM2.5 sampler inlets within 1 m vertically of each other?		Yes <input type="checkbox"/> No <input type="checkbox"/>	
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *d questions)			
*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/>			
*Distance from probe to tree (m) _____ Direction from probe to tree _____			
*Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *d questions) No <input type="checkbox"/>			
*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 <input type="checkbox"/> No <input type="checkbox"/>			
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 Neil Joyner Date December 14, 2011

Ambient Monitoring Coordinator Mitchell Revels Date December 14, 2011

Revised 2012-01-12

## Site Review Form Calendar Year 2011

### Site Information

<b>Region</b> <u>FRO</u>		<b>Site Name</b> <u>Golfview</u>		<b>AQS Site #</b> <u>37-051-1003</u>	
<b>Street Address</b> <u>3625 Golfview Dr</u>			<b>City</b> <u>Hope Mills</u>		
<b>Urban Area</b> <u>FAYETTEVILLE</u>		<b>Core-based Statistical Area</b> <u>Fayetteville, NC</u>			
<b>Enter Exact</b>					
<b>Longitude</b> <u>-78.96250</u>		<b>Latitude</b> <u>34.96889</u>		<b>Method of Measuring</b>	
In Decimal Degrees		In Decimal Degrees		<b>Interpolation</b> <u>Explanation: Google Earth</u>	
<b>Elevation Above/below Mean Sea Level (in meters)</b>				<u>50</u>	
Name of nearest road to inlet probe <u>Golfview Dr</u> ADT <u>13000</u> Year latest available <u>2010</u>					
Comments: _____					
Distance of site to nearest major road (m) <u>483.00</u> Direction from site to nearest major road <u>NNE</u>					
Name of nearest major road <u>Rockfish Rd</u> ADT <u>11000</u> Year latest available <u>2010</u>					
Comments: _____					
Site located near electrical substation/high voltage power lines?					Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Distance of site to nearest railroad track			(m) <u>1263</u> Direction to RR <u>E</u> <input type="checkbox"/> NA		
Distance of site to nearest power pole w/transformer			(m) <u>45</u> Direction <u>NNE</u>		
Distance between site and drip line of water tower (m)			Direction from site to water tower <input checked="" type="checkbox"/> 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.					
<u>None expected. This site is located at a golf course.</u>					

#### ANSWER ALL APPLICABLE QUESTIONS:

Parameters	Monitoring Objective	Scale	Site Type
<input type="checkbox"/> NA <input type="checkbox"/> SO <sub>2</sub> (NAAQS) <input type="checkbox"/> SO <sub>2</sub> (trace-level) <input type="checkbox"/> NO <sub>x</sub> (NAAQS) <input type="checkbox"/> HSN <sub>2</sub> O <sub>y</sub> <input checked="" type="checkbox"/> O <sub>3</sub> <input type="checkbox"/> NH <sub>3</sub> <input type="checkbox"/> Hydrocarbon <input type="checkbox"/> Air Toxics <input type="checkbox"/> HSCO (Not Micro) <input type="checkbox"/> CO (trace-level)	<input type="checkbox"/> General/Background <input type="checkbox"/> Highest Concentration <input type="checkbox"/> Max O <sub>3</sub> Concentration <input checked="" type="checkbox"/> Population Exposure <input type="checkbox"/> Source Oriented <input type="checkbox"/> Transport <input type="checkbox"/> Upwind Background <input type="checkbox"/> Welfare Related Impacts	<input type="checkbox"/> Micro <input type="checkbox"/> Middle <input checked="" type="checkbox"/> Neighborhood <input type="checkbox"/> Urban <input type="checkbox"/> Regional	<input checked="" type="checkbox"/> SLAMS <input type="checkbox"/> NCORE <input type="checkbox"/> SPM <input type="checkbox"/> SPM/OPN <input type="checkbox"/> NONREGULATORY
Probe inlet height (from ground) 2-15 m? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Give actual measured height from ground (meters) <u>3.73</u>			
Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Actual measured distance from probe to supporting structure (meters) <u>1.016</u>			
Distance of probe inlet from other monitoring probe inlets > 1 m? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>			
Is probe > 20 m from the nearest tree drip line? Yes <input checked="" type="checkbox"/> *No <input type="checkbox"/> (answer *d questions)			
*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/>			
*Distance from probe to tree (m) _____ Direction from probe to tree _____			
*Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *d questions) No <input checked="" type="checkbox"/>			
*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 <input type="checkbox"/> No <input type="checkbox"/>			
Distance of probe to nearest traffic lane (m) <u>139</u> Direction from probe to nearest traffic lane <u>NW</u>			

## Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
<input checked="" type="checkbox"/> NA <input type="checkbox"/> CO (Micro Only)	<input type="checkbox"/> Highest Concentration _____ <input type="checkbox"/> Population Exposure _____ <input type="checkbox"/> Source Oriented _____ <input type="checkbox"/> Transport _____ <input type="checkbox"/> Welfare Related Impacts _____	<input type="checkbox"/> Micro _____	<input type="checkbox"/> SLAMS _____ <input type="checkbox"/> SPM _____ <input type="checkbox"/> SPM/OPN _____ <input type="checkbox"/> NONREGULATORY
Probe inlet height (from ground) 2.5 - 3.5 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></span> Actual measured distance from probe inlet to ground (meters) _____			
Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></span> Actual measured distance from probe to supporting structure (meters) _____			
Distance of probe inlet to nearest intersection > 10 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></span> Distance of probe inlet to nearest traffic lane 2 - 10 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></span>			
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *'d questions)			
*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/>			
*Distance from probe to tree (m) _____ Direction from probe to tree ____			
*Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *'d questions) No <input type="checkbox"/>			
*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 <input type="checkbox"/> No <input type="checkbox"/>			
Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ____			

Parameters	Monitoring Objective	Scale	Site Type
<input checked="" type="checkbox"/> NA <input type="checkbox"/> NO <sub>y</sub> (trace-level)	<input type="checkbox"/> General/Background _____ <input type="checkbox"/> Highest Concentration _____ <input type="checkbox"/> Max O <sub>3</sub> Concentration _____ <input type="checkbox"/> Population Exposure _____ <input type="checkbox"/> Source Oriented _____ <input type="checkbox"/> Transport _____ <input type="checkbox"/> Upwind Background _____ <input type="checkbox"/> Welfare Related Impacts _____	<input type="checkbox"/> Micro _____ <input type="checkbox"/> Middle _____ <input type="checkbox"/> Neighborhood _____ <input type="checkbox"/> Urban _____ <input type="checkbox"/> Regional _____	<input type="checkbox"/> SLAMS _____ <input type="checkbox"/> NCORE _____ <input type="checkbox"/> SPM _____ <input type="checkbox"/> SPM/OPN _____ <input type="checkbox"/> NONREGULATORY
Probe inlet height (from ground) 10-15 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></span> Actual measured distance from probe inlet to ground (meters) _____			
Distance of probe inlet from horizontal and/or vertical supporting structure > 1 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></span> Actual measured distance from probe to supporting structure (meters) _____			
Distance of probe inlet from other monitoring probe inlets > 1 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/></span>			
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *'d questions)			
*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/>			
*Distance from probe to tree (m) _____ Direction from probe to tree ____			
*Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *'d questions) No <input type="checkbox"/>			
*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 <input type="checkbox"/> No <input type="checkbox"/>			
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
<input checked="" type="checkbox"/> NA <input type="checkbox"/> NO <sub>2</sub> (Near Road only) <input type="checkbox"/> CO (Near Road only)	<input type="checkbox"/> Highest Concentration _____ <input type="checkbox"/> Population Exposure _____ <input type="checkbox"/> Source Oriented _____ <input type="checkbox"/> Transport _____ <input type="checkbox"/> Welfare Related Impacts _____	<input type="checkbox"/> Micro _____	<input type="checkbox"/> SLAMS _____ <input type="checkbox"/> SPM _____ <input type="checkbox"/> NONREGULATORY _____
Probe inlet height (from ground) 2-15 m? Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual measured height from ground (meters) _____ Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes <input type="checkbox"/> No <input type="checkbox"/> Actual measured distance from probe to supporting structure (meters) _____ Distance of probe inlet from other monitoring probe inlets > 1 m? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>			
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *d questions) *Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/> *Distance from probe to tree (m) _____ Direction from probe to tree _____ *Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *d questions) No <input type="checkbox"/> *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 <input type="checkbox"/> No <input type="checkbox"/> Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane _____			

Parameters	Monitoring Objective	Scale	Site Type
<input checked="" type="checkbox"/> NA Air flow > 200 L/min <input type="checkbox"/> PM10 <input type="checkbox"/> TSP <input type="checkbox"/> Pb	<input type="checkbox"/> Highest Concentration _____ <input type="checkbox"/> Population Exposure _____ <input type="checkbox"/> Source Oriented _____ <input type="checkbox"/> Background _____ <input type="checkbox"/> Transport _____ <input type="checkbox"/> Welfare Related Impacts _____	<input type="checkbox"/> Micro _____ <input type="checkbox"/> Middle _____ <input type="checkbox"/> Neighborhood _____ <input type="checkbox"/> Urban _____ <input type="checkbox"/> Regional _____	<input type="checkbox"/> SLAMS _____ <input type="checkbox"/> NCORE _____ <input type="checkbox"/> SPM _____ <input type="checkbox"/> NONREGULATORY _____
Probe inlet height (from ground) <input type="checkbox"/> < 2 m _____ <input type="checkbox"/> 2-7m _____ <input type="checkbox"/> 7-15 m _____ <input type="checkbox"/> > 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 <input type="checkbox"/> No <input type="checkbox"/> Actual measured distance from probe to supporting structure (meters) _____ ----- Distance between collocated PM-10, TSP or Pb sampler inlets = 2 to 4 m? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/> Actual measured distance between collocated probes (meters) _____ ----- Distance between any high volume inlet and any other high or low volume inlet ≥ 2 m? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>			
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *d questions) *Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/> *Distance from probe to tree (m) _____ Direction from probe to tree _____ *Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *d questions) No <input type="checkbox"/> *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 <input type="checkbox"/> No <input type="checkbox"/> 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
<input checked="" type="checkbox"/> NA Air flow < 200 L/min <input type="checkbox"/> PM2.5 <input type="checkbox"/> PM10 <input type="checkbox"/> PM10-2.5 <input type="checkbox"/> PM10 Lead (PB) <input type="checkbox"/> PM2.5 Cont. (TEOM) <input type="checkbox"/> PM2.5 Cont. (BAM) <input type="checkbox"/> PM2.5 Spec. (SASS) <input type="checkbox"/> PM2.5 Spec. (URG) <input type="checkbox"/> PM2.5 Cont. Spec.	<input type="checkbox"/> General/Background <input type="checkbox"/> Highest Concentration <input type="checkbox"/> Population Exposure <input type="checkbox"/> Source Oriented <input type="checkbox"/> Transport <input type="checkbox"/> Upwind Background <input type="checkbox"/> Welfare Related Impacts	<input type="checkbox"/> Micro <input type="checkbox"/> Middle <input type="checkbox"/> Neighborhood <input type="checkbox"/> Urban <input type="checkbox"/> Regional	<input type="checkbox"/> SLAMS <input type="checkbox"/> NCORE <input type="checkbox"/> SPM <input type="checkbox"/> NONREGULATORY
Probe inlet height (from ground) <input type="checkbox"/> < 2 m <input type="checkbox"/> 2-7m <input type="checkbox"/> 7-15 m <input type="checkbox"/> > 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 <input type="checkbox"/> No <input type="checkbox"/>			
Distance between inlets of any low volume monitor and any other low volume monitor at the site = 1 m or greater?			Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Distance between all low volume monitor inlets and any Hi-Volume PM-10 or TSP inlet = 2 m or greater?			Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Are collocated PM2.5 Monitors (Two FRMs, FRM & BAM, FRM & TEOM, BAM & TEOM) Located at Site?		*Yes <input type="checkbox"/> (answer *d questions) No <input type="checkbox"/> NA <input type="checkbox"/>	
*Distance between collocated PM 2.5 sampler inlets = 1 to 4 m?		Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual (meters) _____	
*Are collocated PM2.5 sampler inlets within 1 m vertically of each other?		Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual (meters) _____	
Is an URG 3000 monitor collocated with a SASS monitor at the site?		*Yes <input type="checkbox"/> (answer *d questions) No <input type="checkbox"/> NA <input type="checkbox"/>	
*Distance between collocated speciation sampler inlets = 1 to 4 m?		Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual (meters) _____	
*Are collocated speciation sampler inlets within 1 m vertically of each other?		Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual (meters) _____	
Is a low-volume PM10 monitor collocated with a PM2.5 monitor at the site to measure PM10-2.5?		*Yes <input type="checkbox"/> (answer *d questions) No <input type="checkbox"/> NA <input type="checkbox"/>	
*Distance between collocated PM10 and PM2.5 inlets for PM10-2.5 samplers = 1 to 4 m?		Yes <input type="checkbox"/> No <input type="checkbox"/>	
*Are collocated PM10 and PM2.5 sampler inlets within 1 m vertically of each other?		Yes <input type="checkbox"/> No <input type="checkbox"/>	
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *d questions)			
*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/>			
*Distance from probe to tree (m) _____ Direction from probe to tree _____			
*Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *d questions) No <input type="checkbox"/>			
*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 <input type="checkbox"/> No <input type="checkbox"/>			
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 Jennifer McHone Sides Date 1/4/12

Ambient Monitoring Coordinator Mitchell Revels Date January 19, 2012

Revised 2012-01-12

## Site Review Form Calendar Year 2011

### Site Information

<b>Region</b> <u>FRO</u>	<b>Site Name</b> <u>Wade</u>	<b>AQS Site #</b> <u>37-051-0008</u>	
<b>Street Address</b> <u>7112 Covington Lane</u>		<b>City</b> <u>Wade</u>	
<b>Urban Area</b> <u>FAYETTEVILLE</u>	<b>Core-based Statistical Area</b> <u>Fayetteville, NC</u>		
<b>Enter Exact</b>			
<b>Longitude</b> <u>-78.72804</u>	<b>Latitude</b> <u>35.15869</u>	<b>Method of Measuring</b>	
In Decimal Degrees	In Decimal Degrees	<b>Interpolation</b>	<b>Explanation:</b> <u>Google Earth</u>
Elevation Above/below Mean Sea Level (in meters)		<u>45</u>	
Name of nearest road to inlet probe <u>Dunn Rd (Hwy 301)</u> ADT <u>1600</u> Year <u>2010</u>			
Comments: <u>Wade-Steadman Rd (1600), Covington Lane (190) -both 2010</u>			
Distance of site to nearest major road (m) <u>771.00</u> Direction from site to nearest major road <u>SE</u>			
Name of nearest major road <u>I-95</u> ADT <u>47000</u> Year <u>2010</u>			
Comments: _____			
Site located near electrical substation/high voltage power lines?			Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Distance of site to nearest railroad track		(m) <u>841</u> Direction to RR <u>NW</u> <input type="checkbox"/> NA	
Distance of site to nearest power pole w/transformer		(m) <u>99</u> Direction <u>W</u>	
Distance between site and drip line of water tower (m) <u>165</u>		Direction from site to water tower <u>NW</u> <input type="checkbox"/> 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.			
<u>cultivated fields</u>			

#### ANSWER ALL APPLICABLE QUESTIONS:

Parameters	Monitoring Objective	Scale	Site Type
<input type="checkbox"/> NA <input type="checkbox"/> SO <sub>2</sub> (NAAQS) <input type="checkbox"/> SO <sub>2</sub> (trace-level) <input type="checkbox"/> NO <sub>x</sub> (NAAQS) <input type="checkbox"/> HSN <sub>2</sub> O <sub>y</sub> <input checked="" type="checkbox"/> O <sub>3</sub> <input type="checkbox"/> NH <sub>3</sub> <input type="checkbox"/> Hydrocarbon <input type="checkbox"/> Air Toxics <input type="checkbox"/> HSCO (Not Micro) <input type="checkbox"/> CO (trace-level)	<input type="checkbox"/> General/Background <input checked="" type="checkbox"/> Highest Concentration <input type="checkbox"/> Max O <sub>3</sub> Concentration <input type="checkbox"/> Population Exposure <input type="checkbox"/> Source Oriented <input type="checkbox"/> Transport <input type="checkbox"/> Upwind Background <input type="checkbox"/> Welfare Related Impacts	<input type="checkbox"/> Micro <input type="checkbox"/> Middle <input type="checkbox"/> Neighborhood <input checked="" type="checkbox"/> Urban <input type="checkbox"/> Regional	<input checked="" type="checkbox"/> SLAMS <input type="checkbox"/> NCORE <input type="checkbox"/> SPM <input type="checkbox"/> SPM/OPN <input type="checkbox"/> NONREGULATORY
Probe inlet height (from ground) 2-15 m? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Give actual measured height from ground (meters) <u>3.73</u>			
Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Actual measured distance from probe to supporting structure (meters) <u>1.016</u>			
Distance of probe inlet from other monitoring probe inlets > 1 m? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/>			
Is probe > 20 m from the nearest tree drip line? Yes <input checked="" type="checkbox"/> *No <input type="checkbox"/> (answer *'d questions)			
*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/>			
*Distance from probe to tree (m) _____ Direction from probe to tree _____			
*Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *'d questions) No <input checked="" type="checkbox"/>			
*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 <input type="checkbox"/> No <input type="checkbox"/>			
Distance of probe to nearest traffic lane (m) <u>241</u> Direction from probe to nearest traffic lane <u>NW</u>			

## Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
<input checked="" type="checkbox"/> NA <input type="checkbox"/> CO (Micro Only)	<input type="checkbox"/> Highest Concentration _____ <input type="checkbox"/> Population Exposure _____ <input type="checkbox"/> Source Oriented _____ <input type="checkbox"/> Transport _____ <input type="checkbox"/> Welfare Related Impacts _____	<input type="checkbox"/> Micro _____	<input type="checkbox"/> SLAMS _____ <input type="checkbox"/> SPM _____ <input type="checkbox"/> SPM/OPN _____ <input type="checkbox"/> NONREGULATORY
Probe inlet height (from ground) 2.5 - 3.5 m? Yes <input type="checkbox"/> No <input type="checkbox"/> 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 <input type="checkbox"/> No <input type="checkbox"/> Actual measured distance from probe to supporting structure (meters) _____			
Distance of probe inlet to nearest intersection > 10 m? Yes <input type="checkbox"/> No <input type="checkbox"/> Distance of probe inlet to nearest traffic lane 2 - 10 m? Yes <input type="checkbox"/> No <input type="checkbox"/>			
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *'d questions)			
*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/>			
*Distance from probe to tree (m) _____ Direction from probe to tree ____			
*Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *'d questions) No <input type="checkbox"/>			
*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 <input type="checkbox"/> No <input type="checkbox"/>			
Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane ____			

Parameters	Monitoring Objective	Scale	Site Type
<input checked="" type="checkbox"/> NA <input type="checkbox"/> NO <sub>y</sub> (trace-level)	<input type="checkbox"/> General/Background _____ <input type="checkbox"/> Highest Concentration _____ <input type="checkbox"/> Max O <sub>3</sub> Concentration _____ <input type="checkbox"/> Population Exposure _____ <input type="checkbox"/> Source Oriented _____ <input type="checkbox"/> Transport _____ <input type="checkbox"/> Upwind Background _____ <input type="checkbox"/> Welfare Related Impacts _____	<input type="checkbox"/> Micro _____ <input type="checkbox"/> Middle _____ <input type="checkbox"/> Neighborhood _____ <input type="checkbox"/> Urban _____ <input type="checkbox"/> Regional _____	<input type="checkbox"/> SLAMS _____ <input type="checkbox"/> NCORE _____ <input type="checkbox"/> SPM _____ <input type="checkbox"/> SPM/OPN _____ <input type="checkbox"/> NONREGULATORY
Probe inlet height (from ground) 10-15 m? Yes <input type="checkbox"/> No <input type="checkbox"/> Actual measured distance from probe inlet to ground (meters) _____			
Distance of probe inlet from horizontal and/or vertical supporting structure > 1 m? Yes <input type="checkbox"/> No <input type="checkbox"/> Actual measured distance from probe to supporting structure (meters) _____			
Distance of probe inlet from other monitoring probe inlets > 1 m? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>			
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *'d questions)			
*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/>			
*Distance from probe to tree (m) _____ Direction from probe to tree ____			
*Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *'d questions) No <input type="checkbox"/>			
*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 <input type="checkbox"/> No <input type="checkbox"/>			
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
<input checked="" type="checkbox"/> NA <input type="checkbox"/> NO <sub>2</sub> (Near Road only) <input type="checkbox"/> CO (Near Road only)	<input type="checkbox"/> Highest Concentration _____ <input type="checkbox"/> Population Exposure _____ <input type="checkbox"/> Source Oriented _____ <input type="checkbox"/> Transport _____ <input type="checkbox"/> Welfare Related Impacts _____	<input type="checkbox"/> Micro _____	<input type="checkbox"/> SLAMS _____ <input type="checkbox"/> SPM _____ <input type="checkbox"/> NONREGULATORY _____
Probe inlet height (from ground) 2-15 m? Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual measured height from ground (meters) _____ Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes <input type="checkbox"/> No <input type="checkbox"/> Actual measured distance from probe to supporting structure (meters) _____ Distance of probe inlet from other monitoring probe inlets > 1 m? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>			
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *'d questions) *Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/> *Distance from probe to tree (m) _____ Direction from probe to tree _____ *Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *'d questions) No <input type="checkbox"/> *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 <input type="checkbox"/> No <input type="checkbox"/> Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane _____			

Parameters	Monitoring Objective	Scale	Site Type
<input checked="" type="checkbox"/> NA Air flow > 200 L/min <input type="checkbox"/> PM10 <input type="checkbox"/> TSP <input type="checkbox"/> Pb	<input type="checkbox"/> Highest Concentration _____ <input type="checkbox"/> Population Exposure _____ <input type="checkbox"/> Source Oriented _____ <input type="checkbox"/> Background _____ <input type="checkbox"/> Transport _____ <input type="checkbox"/> Welfare Related Impacts _____	<input type="checkbox"/> Micro _____ <input type="checkbox"/> Middle _____ <input type="checkbox"/> Neighborhood _____ <input type="checkbox"/> Urban _____ <input type="checkbox"/> Regional _____	<input type="checkbox"/> SLAMS _____ <input type="checkbox"/> NCORE _____ <input type="checkbox"/> SPM _____ <input type="checkbox"/> NONREGULATORY _____
Probe inlet height (from ground) <input type="checkbox"/> < 2 m _____ <input type="checkbox"/> 2-7m _____ <input type="checkbox"/> 7-15 m _____ <input type="checkbox"/> > 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 <input type="checkbox"/> No <input type="checkbox"/> Actual measured distance from probe to supporting structure (meters) _____ ----- Distance between collocated PM-10, TSP or Pb sampler inlets = 2 to 4 m? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/> Actual measured distance between collocated probes (meters) _____ ----- Distance between any high volume inlet and any other high or low volume inlet ≥ 2 m? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>			
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *'d questions) *Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/> *Distance from probe to tree (m) _____ Direction from probe to tree _____ *Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *'d questions) No <input type="checkbox"/> *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 <input type="checkbox"/> No <input type="checkbox"/> 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
<input checked="" type="checkbox"/> NA Air flow < 200 L/min <input type="checkbox"/> PM2.5 <input type="checkbox"/> PM10 <input type="checkbox"/> PM10-2.5 <input type="checkbox"/> PM10 Lead (PB) <input type="checkbox"/> PM2.5 Cont. (TEOM) <input type="checkbox"/> PM2.5 Cont. (BAM) <input type="checkbox"/> PM2.5 Spec. (SASS) <input type="checkbox"/> PM2.5 Spec. (URG) <input type="checkbox"/> PM2.5 Cont. Spec.	<input type="checkbox"/> General/Background <input type="checkbox"/> Highest Concentration <input type="checkbox"/> Population Exposure <input type="checkbox"/> Source Oriented <input type="checkbox"/> Transport <input type="checkbox"/> Upwind Background <input type="checkbox"/> Welfare Related Impacts	<input type="checkbox"/> Micro <input type="checkbox"/> Middle <input type="checkbox"/> Neighborhood <input type="checkbox"/> Urban <input type="checkbox"/> Regional	<input type="checkbox"/> SLAMS <input type="checkbox"/> NCORE <input type="checkbox"/> SPM <input type="checkbox"/> NONREGULATORY
Probe inlet height (from ground) <input type="checkbox"/> < 2 m <input type="checkbox"/> 2-7m <input type="checkbox"/> 7-15 m <input type="checkbox"/> > 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 <input type="checkbox"/> No <input type="checkbox"/>			
Distance between inlets of any low volume monitor and any other low volume monitor at the site = 1 m or greater?			Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Distance between all low volume monitor inlets and any Hi-Volume PM-10 or TSP inlet = 2 m or greater?			Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Are collocated PM2.5 Monitors (Two FRMs, FRM & BAM, FRM & TEOM, BAM & TEOM) Located at Site?		*Yes <input type="checkbox"/> (answer *d questions) No <input type="checkbox"/> NA <input type="checkbox"/>	
*Distance between collocated PM 2.5 sampler inlets = 1 to 4 m?		Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual (meters) _____	
*Are collocated PM2.5 sampler inlets within 1 m vertically of each other?		Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual (meters) _____	
Is an URG 3000 monitor collocated with a SASS monitor at the site?		*Yes <input type="checkbox"/> (answer *d questions) No <input type="checkbox"/> NA <input type="checkbox"/>	
*Distance between collocated speciation sampler inlets = 1 to 4 m?		Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual (meters) _____	
*Are collocated speciation sampler inlets within 1 m vertically of each other?		Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual (meters) _____	
Is a low-volume PM10 monitor collocated with a PM2.5 monitor at the site to measure PM10-2.5?		*Yes <input type="checkbox"/> (answer *d questions) No <input type="checkbox"/> NA <input type="checkbox"/>	
*Distance between collocated PM10 and PM2.5 inlets for PM10-2.5 samplers = 1 to 4 m?		Yes <input type="checkbox"/> No <input type="checkbox"/>	
*Are collocated PM10 and PM2.5 sampler inlets within 1 m vertically of each other?		Yes <input type="checkbox"/> No <input type="checkbox"/>	
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *d questions)			
*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/>			
*Distance from probe to tree (m) _____ Direction from probe to tree _____			
*Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *d questions) No <input type="checkbox"/>			
*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 <input type="checkbox"/> No <input type="checkbox"/>			
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 Jennifer McHone Sides Date January 4, 2012

Ambient Monitoring Coordinator Mitchell Revels Date January 10, 2012

Revised 2012-01-12.

# Site Review Form Calendar Year 2011

## Site Information

Region <u>FRO</u>	Site Name <u>William Owen</u>	AQS Site # <u>37-051-0009</u>
Street Address- <u>4533 Raeford Rd</u>		City <u>Fayetteville</u>
Urban Area <u>FAYETTEVILLE</u>	Core-based Statistical Area <u>Fayetteville, NC</u>	
<b>Enter Exact</b>		
Longitude <u>-78.95311</u>	Latitude <u>35.04142</u>	<b>Method of Measuring</b>
In Decimal Degrees	In Decimal Degrees	<b>Interpolation</b>   <b>Explanation: Google Earth</b>
Elevation Above/below Mean Sea Level (in meters)		<u>63</u>
Name of nearest road to inlet probe <u>Raeford Rd</u> ADT <u>46000</u> Year <u>2010</u>		
Comments: _____		
Distance of site to nearest major road (m) <u>210.00</u> Direction from site to nearest major road <u>N</u>		
Name of nearest major road <u>Raeford Rd</u> ADT <u>46000</u> Year <u>2010</u>		
Comments: _____		
Site located near electrical substation/high voltage power lines?		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Distance of site to nearest railroad track	(m) <u>837</u> Direction to RR <u>N</u>	<input type="checkbox"/> NA
Distance of site to nearest power pole w/transformer	(m) <u>28</u> Direction <u>N</u>	
Distance between site and drip line of water tower (m)	Direction from site to water tower	<input checked="" type="checkbox"/> 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.		
<u>None expected</u>		

**ANSWER ALL APPLICABLE QUESTIONS:**

Parameters	Monitoring Objective	Scale	Site Type
<input checked="" type="checkbox"/> NA <input type="checkbox"/> SO <sub>2</sub> (NAAQS) <input type="checkbox"/> SO <sub>2</sub> (trace-level) <input type="checkbox"/> NO <sub>x</sub> (NAAQS) <input type="checkbox"/> HSNO <sub>y</sub> <input type="checkbox"/> O <sub>3</sub> <input type="checkbox"/> NH <sub>3</sub> <input type="checkbox"/> Hydrocarbon <input type="checkbox"/> Air Toxics <input type="checkbox"/> HSCO (Not Micro) <input type="checkbox"/> CO (trace-level)	<input type="checkbox"/> General/Background <input type="checkbox"/> Highest Concentration <input type="checkbox"/> Max O <sub>3</sub> Concentration <input type="checkbox"/> Population Exposure <input type="checkbox"/> Source Oriented <input type="checkbox"/> Transport <input type="checkbox"/> Upwind Background <input type="checkbox"/> Welfare Related Impacts	<input type="checkbox"/> Micro <input type="checkbox"/> Middle <input type="checkbox"/> Neighborhood <input type="checkbox"/> Urban <input type="checkbox"/> Regional	<input type="checkbox"/> SLAMS <input type="checkbox"/> NCORE <input type="checkbox"/> SPM <input type="checkbox"/> SPM/OPN <input type="checkbox"/> NONREGULATORY
Probe inlet height (from ground) 2-15 m? Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual measured height from ground (meters) _____			
Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes <input type="checkbox"/> No <input type="checkbox"/>			
Actual measured distance from probe to supporting structure (meters) _____			
Distance of probe inlet from other monitoring probe inlets > 1 m? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>			
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *'d questions)			
*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/>			
*Distance from probe to tree (m) _____ Direction from probe to tree _____			
*Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *'d questions) No <input type="checkbox"/>			
*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 <input type="checkbox"/> No <input type="checkbox"/>			
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
<input checked="" type="checkbox"/> NA <input type="checkbox"/> CO (Micro Only)	<input type="checkbox"/> Highest Concentration _____ <input type="checkbox"/> Population Exposure _____ <input type="checkbox"/> Source Oriented _____ <input type="checkbox"/> Transport _____ <input type="checkbox"/> Welfare Related Impacts _____	<input type="checkbox"/> Micro _____	<input type="checkbox"/> SLAMS _____ <input type="checkbox"/> SPM _____ <input type="checkbox"/> SPM/OPN _____ <input type="checkbox"/> NONREGULATORY
Probe inlet height (from ground) 2.5 - 3.5 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></span> Actual measured distance from probe inlet to ground (meters) _____			
Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></span> Actual measured distance from probe to supporting structure (meters) _____			
Distance of probe inlet to nearest intersection > 10 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></span> Distance of probe inlet to nearest traffic lane 2 - 10 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></span>			
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *'d questions)			
*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/>			
*Distance from probe to tree (m) _____ Direction from probe to tree _____			
*Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *'d questions) No <input type="checkbox"/>			
*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 <input type="checkbox"/> No <input type="checkbox"/>			
Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane _____			

Parameters	Monitoring Objective	Scale	Site Type
<input checked="" type="checkbox"/> NA <input type="checkbox"/> NO <sub>x</sub> (trace-level)	<input type="checkbox"/> General/Background _____ <input type="checkbox"/> Highest Concentration _____ <input type="checkbox"/> Max O <sub>3</sub> Concentration _____ <input type="checkbox"/> Population Exposure _____ <input type="checkbox"/> Source Oriented _____ <input type="checkbox"/> Transport _____ <input type="checkbox"/> Upwind Background _____ <input type="checkbox"/> Welfare Related Impacts _____	<input type="checkbox"/> Micro _____ <input type="checkbox"/> Middle _____ <input type="checkbox"/> Neighborhood _____ <input type="checkbox"/> Urban _____ <input type="checkbox"/> Regional _____	<input type="checkbox"/> SLAMS _____ <input type="checkbox"/> NCORE _____ <input type="checkbox"/> SPM _____ <input type="checkbox"/> SPM/OPN _____ <input type="checkbox"/> NONREGULATORY
Probe inlet height (from ground) 10-15 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></span> Actual measured distance from probe inlet to ground (meters) _____			
Distance of probe inlet from horizontal and/or vertical supporting structure > 1 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></span> Actual measured distance from probe to supporting structure (meters) _____			
Distance of probe inlet from other monitoring probe inlets > 1 m? <span style="float: right;">Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/></span>			
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *'d questions)			
*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/>			
*Distance from probe to tree (m) _____ Direction from probe to tree _____			
*Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *'d questions) No <input type="checkbox"/>			
*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 <input type="checkbox"/> No <input type="checkbox"/>			
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
<input checked="" type="checkbox"/> NA <input type="checkbox"/> NO <sub>2</sub> (Near Road only) <input type="checkbox"/> CO (Near Road only)	<input type="checkbox"/> Highest Concentration _____ <input type="checkbox"/> Population Exposure _____ <input type="checkbox"/> Source Oriented _____ <input type="checkbox"/> Transport _____ <input type="checkbox"/> Welfare Related Impacts _____	<input type="checkbox"/> Micro _____	<input type="checkbox"/> SLAMS _____ <input type="checkbox"/> SPM _____ <input type="checkbox"/> NONREGULATORY _____
Probe inlet height (from ground) 2-15 m? Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual measured height from ground (meters) _____ Distance of probe inlet from horizontal (wall) and/or vertical (roof) supporting structure > 1 m? Yes <input type="checkbox"/> No <input type="checkbox"/> Actual measured distance from probe to supporting structure (meters) _____ Distance of probe inlet from other monitoring probe inlets > 1 m? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>			
Is probe > 20 m from the nearest tree drip line? Yes <input type="checkbox"/> *No <input type="checkbox"/> (answer *'d questions) *Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/> *Distance from probe to tree (m) _____ Direction from probe to tree _____ *Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *'d questions) No <input type="checkbox"/> *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 <input type="checkbox"/> No <input type="checkbox"/> Distance of probe to nearest traffic lane (m) _____ Direction from probe to nearest traffic lane _____			

Parameters	Monitoring Objective	Scale	Site Type
<input type="checkbox"/> NA Air flow > 200 L/min <input checked="" type="checkbox"/> PM10 <input type="checkbox"/> TSP <input type="checkbox"/> Pb	<input type="checkbox"/> Highest Concentration _____ <input checked="" type="checkbox"/> Population Exposure _____ <input type="checkbox"/> Source Oriented _____ <input type="checkbox"/> Background _____ <input type="checkbox"/> Transport _____ <input type="checkbox"/> Welfare Related Impacts _____	<input type="checkbox"/> Micro _____ <input type="checkbox"/> Middle _____ <input type="checkbox"/> Neighborhood _____ <input checked="" type="checkbox"/> Urban _____ <input type="checkbox"/> Regional _____	<input checked="" type="checkbox"/> SLAMS _____ <input type="checkbox"/> NCORE _____ <input type="checkbox"/> SPM _____ <input type="checkbox"/> NONREGULATORY _____
Probe inlet height (from ground) <input type="checkbox"/> < 2 m _____ <input checked="" type="checkbox"/> 2-7m _____ <input type="checkbox"/> 7-15 m _____ <input type="checkbox"/> > 15 m _____ Actual measured distance from probe inlet to ground (meters) <u>2.64</u> ----- Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Actual measured distance from probe to supporting structure (meters) <u>2.38</u> ----- Distance between collocated PM-10, TSP or Pb sampler inlets = 2 to 4 m? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/> Actual measured distance between collocated probes (meters) _____ Distance between any high volume inlet and any other high or low volume inlet ≥ 2 m? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>			
Is probe > 20 m from the nearest tree drip line? Yes <input checked="" type="checkbox"/> *No <input type="checkbox"/> (answer *'d questions) *Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/> *Distance from probe to tree (m) _____ Direction from probe to tree _____ *Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *'d questions) No <input checked="" type="checkbox"/> *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 <input type="checkbox"/> No <input type="checkbox"/> Distance of probe to nearest traffic lane (m) <u>210</u> Direction from probe to nearest traffic lane <u>N</u>			

## Site Review Form Calendar Year 2011

Parameters	Monitoring Objective	Scale	Site Type
<input type="checkbox"/> NA Air flow < 200 L/min <input checked="" type="checkbox"/> PM2.5 <input type="checkbox"/> PM10 <input type="checkbox"/> PM10-2.5 <input type="checkbox"/> PM10 Lead (PB) <input checked="" type="checkbox"/> PM2.5 Cont. (TEOM) <input type="checkbox"/> PM2.5 Cont. (BAM) <input type="checkbox"/> PM2.5 Spec. (SASS) <input type="checkbox"/> PM2.5 Spec. (URG) <input type="checkbox"/> PM2.5 Cont. Spec.	<input type="checkbox"/> General/Background <input type="checkbox"/> Highest Concentration <input checked="" type="checkbox"/> Population Exposure <input type="checkbox"/> Source Oriented <input type="checkbox"/> Transport <input type="checkbox"/> Upwind Background <input type="checkbox"/> Welfare Related Impacts	<input type="checkbox"/> Micro <input type="checkbox"/> Middle <input type="checkbox"/> Neighborhood <input checked="" type="checkbox"/> Urban <input type="checkbox"/> Regional	<input checked="" type="checkbox"/> SLAMS <input type="checkbox"/> NCORE <input type="checkbox"/> SPM <input type="checkbox"/> NONREGULATORY
Probe inlet height (from ground) <input type="checkbox"/> < 2 m <input checked="" type="checkbox"/> 2-7m <input type="checkbox"/> 7-15 m <input type="checkbox"/> > 15 m Actual measured distance from probe inlet to ground (meters) <u>2.38 FRM</u>			
Distance of inlet from horizontal (wall) and/or vertical (platform or roof) supporting structure > 2 m? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Distance between inlets of any low volume monitor and any other low volume monitor at the site = 1 m or greater?			Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/>
Distance between all low volume monitor inlets and any Hi-Volume PM-10 or TSP inlet = 2 m or greater?			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Are collocated PM2.5 Monitors (Two FRMs, FRM & BAM, FRM & TEOM, BAM & TEOM) Located at Site?		*Yes <input checked="" type="checkbox"/> (answer *d questions) No <input type="checkbox"/> NA <input type="checkbox"/>	
*Distance between collocated PM 2.5 sampler inlets = 1 to 4 m?		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Give actual (meters) <u>4</u>	
*Are collocated PM2.5 sampler inlets within 1 m vertically of each other?		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Give actual (meters) <u>3</u>	
Is an URG 3000 monitor collocated with a SASS monitor at the site? *Yes <input type="checkbox"/> (answer *d questions) No <input type="checkbox"/> NA <input checked="" type="checkbox"/>			
*Distance between collocated speciation sampler inlets = 1 to 4 m? Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual (meters) _____			
*Are collocated speciation sampler inlets within 1 m vertically of each other? Yes <input type="checkbox"/> No <input type="checkbox"/> Give actual (meters) _____			
Is a low-volume PM10 monitor collocated with a PM2.5 monitor at the site to measure PM10-2.5?		*Yes <input type="checkbox"/> (answer *d questions) No <input type="checkbox"/> NA <input checked="" type="checkbox"/>	
*Distance between collocated PM10 and PM2.5 inlets for PM10-2.5 samplers = 1 to 4 m?		Yes <input type="checkbox"/> No <input type="checkbox"/>	
*Are collocated PM10 and PM2.5 sampler inlets within 1 m vertically of each other?		Yes <input type="checkbox"/> No <input type="checkbox"/>	
Is probe > 20 m from the nearest tree drip line? Yes <input checked="" type="checkbox"/> *No <input type="checkbox"/> (answer *d questions)			
*Is probe > 10 m from the nearest tree drip line if tree acts as an obstruction? Yes <input type="checkbox"/> *No <input type="checkbox"/>			
*Distance from probe to tree (m) _____ Direction from probe to tree _____			
*Height of tree (m) _____			
Are there any obstacles to air flow? *Yes <input type="checkbox"/> (answer *d questions) No <input checked="" type="checkbox"/>			
*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 <input type="checkbox"/> No <input type="checkbox"/>			
Distance of probe to nearest traffic lane (m) <u>210</u> Direction from probe to nearest traffic lane <u>N</u>			

**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 Jennifer McHone Sides Date 1/4/12  
 Ambient Monitoring Coordinator Mitchell Revels Date January 10, 2012

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## Appendix E-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