Five-Year Network Assessment of Louisiana's Ambient Air Monitoring Network

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INTRODUCTION

This report provides an assessment of the existing monitoring network and proposed changes in the Louisiana Ambient Air Quality Network that will continue to meet the data requirements necessary for air quality management and to adjust for resource and financial constraints. The assessment incorporates: 1) current monitoring regulatory requirements, 2) newly proposed air monitoring regulations, and 3) requirements under both State Implementation and Maintenance Plans. This assessment focuses on National Ambient Air Quality Standard (NAAQS) pollutants that exceed or approach any standard in populated areas. The proposed network reduces the monitoring of selected pollutants that clearly meet the standard, consolidates monitoring of different pollutants in a region at fewer sites, and eliminates redundant monitors measuring the same air mass.

This proposed network meets or exceeds current monitoring regulatory requirements for the numbers and types of air monitors in each region of the state and will meet the minimum requirements in EPA's proposed air network regulations. In addition it provides a foundation for the future that will be more effective in providing information to develop air pollution control strategies and to inform the public on air quality conditions.

AIR QUALITY OVERVIEW

The national primary ambient air quality standards define levels of air quality that are necessary, with an adequate margin of safety, to protect human health. There are six common pollutants that are referred to as the criteria pollutants. For each the State and EPA track the concentration in the ambient air. The Louisiana Ambient Air Quality Network provides these measurements to insure public health is protected.

This air quality review provides an overview of current air quality conditions of each criteria pollutant. This provides a perspective on the pollutants of greatest concern and the regions of the state with the most risk. The table below lists the criteria pollutants and current standards. A discussion of current air quality conditions follows.

Table 1. Criteria Pollutant Standards

	Primary Standards		Secondary Standards	
Pollutant	**Level**	**Averaging Time**	**Level**	**Averaging Time**
Carbon Monoxide	9 ppm	8-hour	None	
	35 ppm	1-hour		
Lead	0.15 µg/m^3	Rolling 3-Month Average	Same as Primary	
	1.5 µg/m^3	Quarterly Average	Same as Primary	
Nitrogen Dioxide	53 ppb	Annual (Arithmetic Average)	Same as Primary	
	100 ppb	1-hour	None	
Particulate Matter (PM_{10})	150 µg/m^3	24-hour	Same as Primary	
Particulate Matter ($PM_{2.5}$)	15.0 µg/m^3	Annual (Arithmetic Average)	Same as Primary	
	35 µg/m^3	24-hour	Same as Primary	
Ozone	0.075 ppm (2008 std)	8-hour	Same as Primary	
	0.08 ppm (1997 std)	8-hour	Same as Primary	
Sulfur Dioxide	0.03 ppm	Annual (Arithmetic Average)	0.5 ppm	3-hour
	0.14 ppm	24-hour		
	75 ppb	1-hour	None	

Ozone

Louisiana meets all of the current National Ambient Air Quality Standards except ozone. Only five of the State's 64 parishes exceeded the 1997 ozone standard and these form the Baton Rouge non-attainment area; however, ozone concentrations statewide are close enough to the current standard and the currently proposed standard range to be of concern. Statewide ozone concentrations are within 15% of the eight-hour ozone standard and will require close monitoring for the foreseeable future.

Fine Particulate Matter 2.5

After ozone, fine particulate matter represents the second greatest air quality health concern for Louisiana. At this time concentrations of fine particulate matter currently meet the existing standard.

Particulate Matter 10

Louisiana has met the current PM_{10} standard for many years and had reduced the number of monitors in anticipation of the revocation of the standard. After the standard was retained, the number of PM_{10} monitors in the state was increased to meet the regulatory requirements.

Sulfur Dioxide

The standard for sulfur dioxide is clearly being met statewide. The sulfur dioxide annual mean standard is 30 ppb. The new 75 ppb 1-hour standard may be exceeded in the parishes of East Baton Rouge, Ouachita, Calcasieu, and Bossier.

Oxides of Nitrogen

Oxides of nitrogen also clearly meet the standard. While not of direct concern, this pollutant is also important for the major role it plays in ozone formation.

Lead

Lead concerns are directed toward individual point sources of lead emissions. Currently there are two facilities in Louisiana that require source-specific monitoring. Exide located in Baton Rouge and Arcelor-Mittor which is located in LaPlace. The Exide facility is not operating at this time. Modeling results do not predict any violations of the standard at these facilities.

Carbon Monoxide

Carbon monoxide levels have remained consistently below the standard in Louisiana. Currently carbon monoxide is only monitored at the NCORE station in Baton Rouge.

CURRENT AMBIENT MONITORING NETWORK

The following table provides a summarized view of the general size of the ambient monitoring network in Louisiana by current DEQ Region designation.

Looking at the Louisiana monitoring network from the perspective of current federal monitor classifications, the following table represents the monitor breakdown by each of the criteria pollutants and for the photochemical pollutants (PAM).

Table 2. Current Monitor Breakdown by Pollutant

	CO	NO_X	O_3	SO_2 ALL TYPES	$PM_{2.5}$ ALL TYPES	PM_{10}	$PM_{10-2.5}$	PAM	LEAD
TOTAL	1	14	26	6	31	6	1	4	3

ASSESSMENT PROCESS

The development of this assessment report included fours steps.

A. The review of current federal regulations, Louisiana Implementation Plan and Maintenance Plans
B. The review of proposed revisions to current NAAQS.
C. Determine monitors that are well below their applicable NAAQS or redundant.

Based on the review of air quality conditions across the state, ozone, sulfur dioxide, and fine particulate matter are the primary air quality concerns for Louisiana. The focus of the monitoring network reflects these concerns now and into the future. Monitoring needs for an ozone control strategy go beyond just ozone and include precursors such as hydrocarbons and oxides of nitrogen. Particulate pollution solutions must have speciation information on the particulate as well as time series data provided from continuous monitors.

The focus of the redesigned network will be on the pollutants of concern: ozone, the precursors of ozone, sulfur dioxide, and fine particulate matter. The final network design must be useful for air quality management planning and be protective of human health. In the long run, the network must be able to accommodate changes in population, emission levels, and resources.

CURRENT AND PROPOSED MONITORING REQUIREMENTS

The first step in the process was to establish what is required of the state in terms of monitoring. Monitoring requirements are contained in federal regulations, State Implementation Plans and State Maintenance Plans. Of these, federal regulations and the State Implementation Plan for Baton Rouge are probably the least flexible and are used to tabulate the list of required monitors (Table 4). The State Maintenance Plan commitments are flexible and monitoring requirements can be modified with EPA regional approval (Table 5).

The monitoring requirements for the NAAQS pollutants are contained in CFR 40, Parts 53 to 59. These regulations describe monitoring objectives and general criteria to be applied in establishing State Air Monitoring Stations (SLAMS), Photochemical Assessment Monitoring Stations (PAMS), and NCORE Stations.

SLAMS criteria for number of sites are based on MSA population. The primary objective of the SLAMS network is to monitor areas where the pollution concentrations and the population exposure are expected to be the highest. These sites are considered by EPA to be long term monitoring sites to support national air quality assessments and trends. Changes in this network are usually difficult to obtain and require EPA Administrator approval. Table 3 includes a summary of monitors required by current and proposed regulations. MSA population determines the number of monitors required.

In 1993, EPA promulgated requirements for states to establish PAMS in certain ozone non-attainment areas. These monitoring requirements are specifically outlined in the current regulations. Two to four PAMS are required for the Baton Rouge area based on the ozone nonattainment classification.

The Baton Rouge State Implementation Plan (SIP) includes monitoring requirements; however, these monitoring requirements are not stated in the plan but are implied.

Maintenance Plans include specific monitoring commitments made by the State. The State may elect to change the maintenance plans with concurrence with EPA. These changes must go through the administrative procedures process. Because the State has the ability to modify the monitoring requirements contained in the Maintenance Plans, these requirements are not considered as mandatory. However, some of the monitoring commitments may remain in the revised Maintenance Plans because of other requirements, future requirements or if the state feels it is prudent to maintain these sites. In short, they were not considered as mandatory in this network assessment.

Special purpose sites are established by the state and are controlled by the state. EPA approval for the removal or relocation of monitors is not required.

Table 3. MONITORS REQUIRED BY CURRENT OR PROPOSED REGULATION

MSA/POP	O_3	NO_X	CO	SO_2	$PM_{2.5}$	PM_{10}	$PM_{10-2.5}$	PAM	Lead
Baton Rouge 717,924	**4**	**5**	**1**	**2**	**4**	**1-2**	**1**	**2-4**	**2**
Houma/Thibodaux 109,291	**1**								
Lafayette 210,954	**1**								
Lake Charles 187,554	**1**			**1**					
Monroe/Alexandria 285,439	**1**				**1**	**0-1**			
New Orleans 1,070,342	**2**	**2**		**1**	**3**	**2-4**			
Shreveport 365,115	**2**			**1**		**0-1**			
St. Charles Parish 51,611									
St. John the Baptist Parish 47,086									**1**
Pointe Coupee Parish 22,447									
St. James Parish 21,054									
Tangipahoa Parish 118,688									
Total Required Monitors	**12**	**7**	**1**	**5**	**8**	**3-8**	**1**	**2-4**	**3**

*This does not include monitors to fulfill co-location requirements and monitors specific to NCORE

Table 4. NAAQS MONITORS IN 2010 NETWORK

MSA/POP	O_3	NO_X	CO	SO_2	$PM_{2.5}$	PM_{10}	$PM_{10-2.5}$	PAM	Lead
Baton Rouge 717,924	**10**	**12**	**1**	**2**	**9**	**2**	**1**	**4**	**2**
Houma/Thibodaux 109,291	**1**				**2**				
Lafayette 210,954	**1**				**2**	**1**			
Lake Charles 187,554	**3**	**1**		**1**	**3**				
Monroe/Alexandria 285,439	**1**				**4**				
New Orleans 1,070,342	**4**	**1**		**3**	**7**	**2**			
Shreveport 365,115	**2**				**3**	**1**			
St. Charles Parish 51,611	**1**								
St. John the Baptist Parish 47,086	**1**								**1**
Pointe Coupee Parish 22,447	**1**								
St. James Parish 21,054	**1**								
Tangipahoa Parish 118,688					**1**				
Total Monitors in Network	**26**	**14**	**1**	**6**	**31**	**6**	**1**	**4**	**3**

*This does not include monitors to fulfill co-location requirements and monitors specific to NCORE

REDUCTION AND ELIMINATION OF MONITORS

This portion of the assessment deals with elimination of criteria pollutant monitors. The proposed monitoring regulations stress that any SO_2, CO, PM_{10} or NO_x monitor which has shown attainment during the previous 5 years, that has a probability of less than 10 percent of exceeding 80 percent of NAAQS during the next 3 years based on the levels, trends and the variability observed in the past may be removed from the statewide network. Although this is the case for some monitors, the SO_2, CO, and PM_{10} network in Louisiana provides a good overall picture of air quality in respect to these pollutants throughout the state and the new SO_2 1-hr standard will require monitoring for possible control strategies.
The $PM_{2.5}$ network in Louisiana is slightly redundant in the Baton Rouge and New Orleans areas, but additional $PM_{2.5}$ monitors in other areas support AQI reporting and forecasting. The department is moving toward automation of the $PM_{2.5}$ network in order to free up manpower

resources for other areas and ultimately reduce the redundant monitors in the Baton Rouge and New Orleans area.
The most needed pollutant for reduction and reallocation of monitors is ozone. Many ozone monitors in the Baton Rouge MSA were originally sited in order to study transport. Due to the wording of the federal regulations these monitors can not be removed although many of them are redundant and provide the same information as other nearby monitors. This redundancy was statistically proved by network assessment tools provided by EPA.(see appendix) DEQ would like to work with the EPA administration towards a reduction of ozone monitors in the Baton Rouge MSA from 10 to 7 in order to free up resources toward other monitoring goals. The location of the proposed seven sites within this region needs further study. The NO_x monitors associated with these ozone monitors would also be removed, bringing the number of NO_x monitors in the Baton Rouge MSA to 9.

SUMMARY

An assessment of the current ambient air quality monitoring network indicates that Louisiana is at a pivotal point. Decisions must be made relative to the resources available to the Department to operate the extensive air monitoring network. The Baton Rouge area could see a reconfiguration of the existing network into seven sites, one of which is an NCore multi-pollutant monitoring site.

This proposed monitoring concept was developed using the following guiding objectives

1. Assess current regulations, state implementation and maintenance plans and eliminate monitors that are not required or needed.
2. Continue efforts related to ozone to address potential non-attainment areas, potential PM Fine non-attainment areas, and potential sulfur dioxide 1-hr non-attainment areas. These issues pose the most pressing environmental health concerns for the State.
3. Eliminate monitors that clearly demonstrate that the standard is met and are not useful for other purposes.

This consolidation of the network will provide an advantage in the future. The reduction in the number of monitoring sites will facilitate the ability to remotely operate much of the network from a central location. The integration and automation of network operations can result in cost savings and provide real time data to air managers and the public.

Appendix A

2010-2011 LOUISIANA
CRITERIA POLLUTANT
AMBIENT AIR MONITORING SITES

Site Name AQS ID #	Address/ Location	Latitude/ Longitude Coordinates	Pollutant Measured	Station Type	Sampling Method	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA Represented
Alexandria 22-079-0002	8105 Tom Bowman Dr	Lat = 31.18 Long = -92.41	PM2.5	SPMS	Sequential FRM	24 hrs every 3rd day	General Background	Regional	Yes	Alexandria
			PM2.5	SPMS	Continuous	Continuous	General Background		No	
Baker 22-033-1001	Hwy 964	Lat = 30.59 Long = -91.21	NOx	SLAMS	Chemilum-inescence	Continuous	General Background	Urban	Yes	Baton Rouge
			Ozone	SLAMS	U.V. Absorption	Continuous	Highest Concentration		Yes	
			VOC	SPMS	Canisters; Trigger Canisters	24 hrs every 6th day; 25 min when triggered	Population Oriented		No	
Baker LSP 22-033-0014	1400 West Irene Rd		Lead	SLAMS	Gravimetric	Every 6th day	Source Oriented	Neighbor-hood	No*	Baton Rouge
Capitol 22-033-0009	1061-A Leesville Ave.	Lat = 30.46 Long = -91.18	PM2.5	SLAMS	Sequential FRM	24 hrs every day	High Pop. Density	Neighbor-hood	Yes	Baton Rouge
			PM2.5	SLAMS	Sequential FRM (Collocated)	24 hrs every 12th day	High Pop. Density		Yes	
			PM2.5	SPMS	Continuous	Continuous	High Pop. Density		No	
			PM10	SLAMS	Continuous	Continuous	High Pop. Density		Yes	
			PM2.5	STN	Chemical Speciation	24 hrs every 3rd day	High Pop. Density		No	

Site Name AQS ID #	Address/ Location	Latitude/ Longitude Coordinates	Pollutant Measured	Station Type	Sampling Method	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA Represented
Capitol (cont.)			SO_2	SLAMS	U.V. Fluorescence	Continuous	High Pop. Density	Neighbor-hood	No	Baton Rouge
			Ozone	SLAMS	U.V. Absorption	Continuous	High Pop. Density		Yes	
			CO	SLAMS	Nondispersive Infrared	Continuous	High Pop. Density		No	
			NOx	SLAMS	Chemilumin-escence	Continuous	High Pop. Density		Yes	
			NOy	PAMS	Chemiluminesence	Continuous	High Pop. Density		No	
			VOC	PAMS	Canisters; Trigger Canisters	8 3-hr samples daily during ozone season and every 6th day otherwise, also 24 hrs every 6th day; 25 min when triggered	High Pop. Density		No	
			Lead	SLAMS	Sequential FRM	Every 6th day	High Pop. Density		No*	
			PM Coarse	SLAMS	Continuous	Continuous	High Pop. Density		No*	
LSU 22-033-0003	East End Aster Lane	Lat = 30.42 Long = -91.18	NOx	SLAMS	Chemilumin-escence	Continuous	High Concentration	Middle	Yes	Baton Rouge

Site Name AQS ID #	Address/ Location	Latitude/ Longitude Coordinates	Pollutant Measured	Station Type	Sampling Method	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA Represented
LSU (cont)			Ozone	SLAMS	U.V. Absorption	Continuous	High Concentration	Middle	Yes	
			VOC	SPMS	Trigger GC	25 min when triggered	High Concentration		No	
Bayou Plaquemine 22-047-0009	65180 Belleview Rd.	Lat = 30.22 Long = -91.32	Ozone	PAMS	U.V. Absorption	Continuous	High Concentration	Neighbor-hood	Yes	Baton Rouge
			NOx	PAMS	Chemilumin-escence	Continuous	High Pop. Density		Yes	
			PM2.5	SPMS	Sequential FRM	24 hrs every 3rd day	Population Oriented		Yes	
			NOy	PAMS	Chemilumin-escence	Continuous	High Pop. Density		Yes	
			VOC	PAMS	Canisters; Trigger Canisters	4 3-hr samples daily during ozone season and 8 3-hr samples every 6th day otherwise; also 24 hrs every 6th day; 25 min when triggered	Population Oriented		No	

Site Name AQS ID #	Address/ Location	Latitude/ Longitude Coordinates	Pollutant Measured	Station Type	Sampling Method	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA Represented
Carlyss 22-019-0002	Hwy 28 & Hwy 108 Hwy 141	Lat = 30.14 Long = -93.37	Ozone	SLAMS	U.V. Absorption	Continuous	General Background	Neighbor-hood	Yes	Lake Charles Baton Rouge
Carville 22-047-0012		Lat = 30.22 Long = -91.13	Ozone	SLAMS	U.V. Absorption	Continuous	General Background	Regional	Yes	
			NOx	SPMS	Chemilumin-escence	Continuous	Source Oriented	Neighbor-hood	Yes	
			VOC	SPMS	Trigger GC	25 min when triggered	Source Oriented		No	
Convent 22-093-0002	St. James Courthouse Hwy 44 @ Canatella	Lat = 29.99 Long = -90.82	Ozone	SLAMS	U.V. Absorption	Continuous	General Background	Neighbor-hood	Yes	St James
Dixie 22-017-0001	Haygood Rd.	Lat = 32.68 Long = -93.86	Ozone	SLAMS	U.V. Absorption	Continuous	High	Urban	Yes	Shreveport
Dutchtown 22-005-0004	11153 Kling Rd.	Lat = 30.2383 Long = -90.97	Ozone	SPMS	U.V. Absorption	Continuous	General Background	Neighbor-hood	Yes	Baton Rouge
			NOx	SPMS	Chemilumin-escence	Continuous	General Background		Yes	
			VOC	PAMS	Canisters; Trigger Canisters	4 3-hr cans every 3rd day ozone season and 8 3-hr cans every 6th day otherwise 25 min when triggered	Population Oriented		No	

Site Name AQS ID #	Address/ Location	Latitude/ Longitude Coordinates	Pollutant Measured	Station Type	Sampling Method	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA Represented
French Settlement 22-063-0002	16627 Perrilloux Ln @ Hwy 16	Lat = 30.32 Long = -90.81	NOx	SLAMS	Chemilumin-escence	Continuous	High Concentration	Neighbor-hood	Yes	Baton Rouge
							General Background			
			Ozone	SPMS	U.V. Absorption	Continuous	High Concentration		Yes	
							General Background			
			PM2.5	SPMS	Continuous	Continuous	General Background		No	
			VOC	SPMS	Canisters; Trigger Canisters	24 hrs every 6th day; 25 min when triggered	Population Oriented		No	
Garyville 22-095-0002	E. Azaela St.	Lat = 30.06 Long = -90.62	Ozone	SLAMS	U.V. Absorption	Continuous	General Background	Regional	Yes	St John the Baptist
Geismar 22-047-0005	Hwy 75	Lat = 30.24 Long = -91.06	PM2.5	SPMS	Sequential FRM	24 hrs every 3rd day	High Pop. Density	Neighbor-hood	Yes	Baton Rouge
Grosse Tete 22-047-0007	19145 Sydney Rd.	Lat = 30.40 Long = -91.42	NOx	SPMS	Chemilumin-escence	Continuous	High Concentration	Urban	Yes	Baton Rouge
							General Background			
			Ozone	SPMS	U.V. Absorption	Continuous	High Concentration		Yes	
							General Background			
			VOC	SPMS	Trigger Canisters	25 min when triggered	Population Oriented		No	

Site Name AQS ID #	Address/ Location	Latitude/ Longitude Coordinates	Pollutant Measured	Station Type	Sampling Method	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA Represented
Hammond 22-105-0001	21549 Old Covington Hwy	Lat = 30.50 Long = -90.38	PM2.5	SPMS	Sequential FRM	24 hrs every 3rd day	High Pop. Density	Neighbor-hood	Yes	New Orleans
			PM2.5	SPMS	Sequential FRM (Collocated)	24 hrs every 12th day	High Pop. Density		Yes	
Hahnville 22-089-0003	1 River Park Drive	Lat = 29.98 Long = -90.36	Ozone	SLAMS	U.V. Absorption	Continuous	General Background	Neighbor-hood	Yes	St Charles
Houma 22-109-0001	4047 West Park Ave. at Hwy 24	Lat = 29.68 Long = -90.78	PM2.5	SLAMS	Sequential FRM	24 hrs every 3rd day	High Pop. Density	Neighbor-hood	Yes	New Orleans
Kenner 22-051-1001	100 West Temple Pl.	Lat = 30.04 Long = -90.27	NOx	SLAMS	Chemilumin-escence	Continuous	High Pop. Density	Urban	Yes	New Orleans
			Ozone	SLAMS	U.V. Absorption	Continuous	High Concentration		Yes	
			PM2.5	SLAMS	Sequential FRM	24 hrs everyday	High Pop. Density		Yes	
			PM2.5	SPMS	Continuous	Continuous	High Pop. Density		No	
			VOC	SPMS	Trigger GC	25 min when triggered	Population Oriented		No	

Site Name AQS ID #	Address/ Location	Latitude/ Longitude Coordinates	Pollutant Measured	Station Type	Sampling Method	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA Represented
Lafayette USGS 22-055-0007	700 Cajundome	Lat = 30.2383 Long = -92.04	PM2.5	SLAMS	Sequential FRM	24 hrs every 3rd day	High Pop. Density	Neighbor-hood	Yes	Lafayette
			PM2.5	SLAMS	Continuous	Continuous	High Pop. Density		No	
			PM10	SPMS	Continuous	Continuous	High Pop. Denisty		Yes	
			Ozone	SLAMS	U.V. Absorption	Continuous	High Pop. Density		Yes	
Lake Charles McNeese University 22-019-0010	Common & E. McNeese	Lat = 30.18 Long = -93.21	PM2.5	SLAMS	Sequential FRM	24 hrs every 3rd day	High Pop. Density	Neighbor-hood	Yes	Lake Charles
LaPlace 22-095-0003	115 Garden Grove		Lead	SLAMS	Gravimetric	Every 6th day	Source Oriented	Neighbor-hood	No*	St. John the Baptist
			Lead	SLAMS	Gravimetric (Collocated)	Every 12th day			No	
Madisonville 22-103-0002	1421 Hwy 22 West	Lat = 30.43 Long = -90.20	Ozone	SPMS	U.V. Absorption	Continuous	Source Oriented	Neighbor-hood	No*	New Orleans
			PM2.5	SPMS	Continuous	Continuous	Source Oriented		No*	
Marrero 22-051-2001	Patriot & Allo St.	Lat = 29.88 Long = -90.09	PM2.5	SLAMS	Sequential FRM	24 hrs every 6th day	High Pop. Density	Neighbor-hood	Yes	New Orleans
Meraux 22-087-0004	4101 Mistrot Drive	Lat = 29.94 Long = -89.92	Ozone	SPMS	U.V. Adsorption	Continuous	General Background	Urban	No	New Orleans
			SO2	SPMS	U.V. Fluorescence	Continuous	General Background		No*	
			H2S	SPMS	U.V. Fluorescence	Continuous	General Background		No	

Site Name AQS ID #	Address/ Location	Latitude/ Longitude Coordinates	Pollutant Measured	Station Type	Sampling Method	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA Represented
Lafayette USGS 22-055-0007	700 Cajundome	Lat = 30.2383 Long = -92.04	PM2.5	SLAMS	Sequential FRM	24 hrs every 3rd day	High Pop. Density	Neighbor-hood	Yes	Lafayette
			PM2.5	SLAMS	Continuous	Continuous	High Pop. Density		No	
			PM10	SPMS	Continuous	Continuous	High Pop. Denisty		Yes	
			Ozone	SLAMS	U.V. Absorption	Continuous	High Pop. Density		Yes	
Lake Charles McNeese University 22-019-0010	Common & E. McNeese	Lat = 30.18 Long = -93.21	PM2.5	SLAMS	Sequential FRM	24 hrs every 3rd day	High Pop. Density	Neighbor-hood	Yes	Lake Charles
LaPlace 22-095-0003	115 Garden Grove		Lead	SLAMS	Gravimetric	Every 6th day	Source Oriented	Neighbor-hood	No*	St. John the Baptist
			Lead	SLAMS	Gravimetric (Collocated)	Every 12th day			No	
Madisonville 22-103-0002	1421 Hwy 22 West	Lat = 30.43 Long = -90.20	Ozone	SPMS	U.V. Absorption	Continuous	Source Oriented	Neighbor-hood	No*	New Orleans
			PM2.5	SPMS	Continuous	Continuous	Source Oriented		No*	
Marrero 22-051-2001	Patriot & Allo St.	Lat = 29.88 Long = -90.09	PM2.5	SLAMS	Sequential FRM	24 hrs every 6th day	High Pop. Density	Neighbor-hood	Yes	New Orleans
Meraux 22-087-0004	4101 Mistrot Drive	Lat = 29.94 Long = -89.92	Ozone	SPMS	U.V. Adsorption	Continuous	General Background	Urban	No	New Orleans
			SO2	SPMS	U.V. Fluorescence	Continuous	General Background		No*	
			H2S	SPMS	U.V. Fluorescence	Continuous	General Background		No	

Site Name AQS ID #	Address/ Location	Latitude/ Longitude Coordinates	Pollutant Measured	Station Type	Sampling Method	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA Represented
Pride 22-033-0013	11245 Port Hudson Rd.	Lat = 30.70 Long = -91.05	NOx	PAMS	Chemilumin-escence	Continuous	High Concentration	Neighbor-hood	Yes	Baton Rouge
			Ozone	PAMS	U.V. Absorption	Continuous	High Concentration		Yes	
			PM2.5	SPMS	Continuous	Continuous	High Concentration		No	
			PM10	SLAMS	Continuous	Continuous	High Concentration		Yes	
			VOC	PAMS	Canister; Trigger Canisters	4 3-hr samples every 3rd day ozone season and 8 3-hr samples every 6th day otherwise, also 24 hrs every 6th day; 25 min when triggered	Population Oriented		No	
Shreveport Airport 22-015-0008	1425 Airport Dr.	Lat = 32.53 Long = -93.75	Ozone	SLAMS	U.V. Absorption	Continuous	High Pop. Density	Neighbor-hood	Yes	Shreveport
			PM2.5	SPMS	Continuous	Continuous	General Background		No	
			PM2.5	SPMS	Chemical Speciation	24 hrs every 6th day	General Background		No	
			PM10	SLAMS	Continuous	Continuous	High Pop. Density		Yes	

Site Name AQS ID #	Address/ Location	Latitude/ Longitude Coordinates	Pollutant Measured	Station Type	Sampling Method	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA Represented
Shreveport Calumet 22-017-0008	Midway St.	Lat = 32.47 Long = -93.79	PM2.5	SLAMS	Sequential FRM	24 hrs every 3rd day	High Pop. Density	Neighbor-hood	Yes	Shreveport
			PM2.5	SLAMS	Sequential FRM (Collocated)	24 hrs every 12th day	High Pop. Density		Yes	
Thibodaux 22-057-0004	194 Thorough-bred Park	Lat = 29.76 Long = -90.77	Ozone	SLAMS	U.V. Absorption	Continuous	General Background	Neighbor-hood	Yes	New Orleans
			PM2.5	SPMS	Continuous	Continuous	General Background		No	
Vinton 22-019-0009	2284 Paul Bellow Rd.	Lat = 30.2383 Long = -93.58	PM2.5	SPMS	Sequential FRM	24 hrs every 3rd day	Regional Transport	Neighbor-hood	Yes	Lake Charles
			Ozone	SPMS	U.V. Absorption	Continuous	General Background		Yes	
Westlake 22-019-0008	2646 John Stine Rd.	Lat = 30.26 Long = -93.28	Ozone	SLAMS	U.V. Absorption	Continuous	High Pop. Density	Neighbor-hood	Yes	Lake Charles
			SO2	SLAMS	U.V. Fluorescence	Continuous	High Pop. Density		Yes	
			NOx	SLAMS	Chemilumin-escence	Continuous	High Pop. Density		Yes	
			PM2.5	SPMS	Continuous	Continuous	High Pop. Density		No	
			VOC	SPMS	Canisters; Trigger Canisters	24 hrs every 6th day; 25 min when triggered	Population Oriented		No	

Special Purpose Monitors										
Site Name AQS ID #	Address/ Location	Latitude/ Longitude Coordinates	Pollutant Measured	Station Type	Sampling Method	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA Represented
Chalmette Vista 22-087-0007	24 E. Chalmette Circle	Lat = 29.94 Long = -89.98	PM2.5	SPMS	Sequential FRM	24 hrs every 3rd day	Source Oriented	Neighbor-hood	No*	New Orleans
			PM2.5	SPMS	Continuous	Continuous	Source Oriented		No	
			PM10	SPMS	Gravimetric	24 hrs every 6th day	Source Oriented		No*	
			SO_2	SPMS	U. V. Fluorescence	Continuous	Source Oriented		No*	
			H2S	SPMS	U.V. Fluorescence	Continuous	Source Oriented		No	
			VOC	SPMS	Trigger GC	25 min when triggered	Source Oriented		No	
Lake Charles Lighthouse Lane SPECIAL3	Lighthouse Lane & Bayou D'Inde Pass	Lat = 30.22 Long = -93.31	VOC	SPMS	Trigger GC	25 min when triggered	Population Oriented	Neighbor-hood	No	Lake Charles
Southern University 22-033-2002	Isabel Herson St.	Lat = 30.53 Long = -91.19	VOC	SPMS	Trigger GC	25 min when triggered	Source Oriented	Neighbor-hood	No	Baton Rouge

PAMS Sites

Site Name	Site Type	Pollutant	Sampling Frequency	Sampling Period
Capitol 22-033-0009	2	Speciated VOC	Eight 3-hr canisters daily (0000, 0300, 0600, 0900, 1200, 1500, 1800, 2100 LST)	June-August
		TNMOC	Hourly	January-December
		NO, NO_2, NO_x	Hourly	January-December
		NOy	Hourly	January-December
		CO (ppb level)	Hourly	January-December
		Ozone	Hourly	January-December
		SO_2 (low level)	Hourly	January-December
		Wind Speed*	Hourly	January-December
		Wind Direction*	Hourly	January-December
		Temperature	Hourly	January-December
		Relative Humidity	Hourly	January-December
		UV Radiation	Hourly	January-December
		Barometric Pres.	Hourly	January-December
		Solar Radiation	Hourly	January-December
		Precipitation	Hourly	January-December
		PM10	Hourly	January-December
		Cloud Height	Hourly	January-December
		Lead	Every 6 Days	January-December
Site Name	Site Type	Pollutant	Sampling Frequency	Sampling Period
Bayou Plaquemine 22-047-0009	3/1	Speciated VOC	Four 3-hr canisters daily (i.e. 0300-0600, 0600-0900, 1500-1800, 1800-2100 LST)	June-August
		TNMOC	Hourly	January-December
		NO_y	Hourly	January-December
		Ozone	Hourly	January-December
		Wind Speed*	Hourly	January-December
		Wind Direction*	Hourly	January-December
		Temperature	Hourly	January-December
		Relative Humidity	Hourly	January-December
		Barometric Pres.	Hourly	January-December
		Solar Radiation	Hourly	January-December

Site Name	Site Type	Pollutant	Sampling Frequency	Sampling Period
Bayou Plaquemine (cont.)	3/1	NO, NO_2, NO_x	Hourly	January-December
Pride 22-033-0013	1/3	Speciated VOC	Four 3-hr cans every 3 days (i.e. 0300-0600, 0600-0900, 1500-1800, 1800-2100 LST)	June-August
		TNMOC	Hourly	January-December
		NO, NO_2, NO_x	Hourly	January-December
		Ozone	Hourly	January-December
		Wind Speed*	Hourly	January-December
		Wind Direction*	Hourly	January-December
		Temperature	Hourly	January-December
		Relative Humidity	Hourly	January-December
		Barometric Pres.	Hourly	January-December
		Solar Radiation	Hourly	January-December
Dutchtown 22-005-0004	1/3	Speciated VOC	Four 3-hr cans every 3 days (i.e. 0300-0600, 0600-0900, 1500-1800, 1800-2100 LST)	June-August
		NO, NO_2, NO_x	Hourly	January-December
		Ozone	Hourly	January-December
		Wind Speed*	Hourly	January-December
		Wind Direction*	Hourly	January-December

Appendix B

Correlation Matrix Tool Results for Southeast Louisiana