



3-Year Quality Assurance Report

**Calendar Years 2008,
2009, and 2010**

**PM_{2.5} Ambient Air
Monitoring Program**

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**3-Year Quality Assurance Report for
Calendar Years 2008, 2009, and 2010
PM_{2.5} Ambient Air Monitoring Program**

**Ambient Air Monitoring Group
Office of Air Quality Planning and Standards
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Foreword

This document is available as a PDF file on the Internet under the Ambient Monitoring Technical Information Center (AMTIC) Homepage (www.epa.gov/ttn/amtic/pmqa.html). The document can be read and printed using Adobe Acrobat Reader software, which is freeware that is available from many Internet sites (including the EPA web site).

Abstract

This report documents quality assurance activities for PM_{2.5} environmental data operations for 2008-2010, for those monitors required to adhere to the quality assurance requirements described in *40 CFR 58 Appendix A*. The report summarizes the data quality indicators of precision, accuracy, bias, and completeness.

The criteria pollutant particulate matter (PM) is defined as a broad class of substances that exist as liquid or solid particles over a wide range of sizes. EPA measures two particle size fractions: those less than or equal to [a nominal] 10 micrometers and those less than or equal to [a nominal] 2.5 micrometers, hereafter referred to as PM₁₀ or PM_{2.5}, respectively. In general, the measurement goal of the PM_{2.5} Ambient Air Quality Monitoring Program is to estimate the concentration, in units of micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), of particulates less than or equal to 2.5 micrometers that have been collected on a 46.2 mm polytetrafluoroethylene (PTFE) filter. These concentrations are compared to the annual and 24-hour National Ambient Air Quality Standard (NAAQS). During 2008-2010, the national primary ambient air quality standards for PM_{2.5} were 15.0 $\mu\text{g}/\text{m}^3$ for the annual mean concentration averaged over 3 years and 35 $\mu\text{g}/\text{m}^3$ for the annual 98th percentile concentration averaged over 3 years.

A quality system for the PM_{2.5} program was developed in order to achieve the data quality objectives (DQOs) that were developed for this program. In order to meet these DQOs, measurement quality objectives were developed for the data quality indicators of precision, bias, accuracy, and completeness. This report defines the data quality indicators, explains the derivation of the goals for each indicator, and summarizes the estimates for these indicators in the 2008-2010 timeframe.

This report focuses on monitors that are required to meet the CFR QA requirements. These are those with monitor type “SLAMS” and, in most cases, monitor types “NCORE” or “TRIBAL”. Data from monitors collecting PM_{2.5} for other purposes may or may not need to adhere to the QA requirements and are not summarized in this report except for overall data completeness and accuracy.

In general, the results show that the monitoring program quality systems, for the most part, are meeting the measurement quality objectives. From a national standpoint, about 73% of the samplers operating all three years met the CFR requirement of 75% completeness in all 12 quarters. This is an improvement from 2005-2007, when only 68% of the samplers operating all three years met the CFR completeness requirement in all 12 quarters. The average capture rate of all samplers is 92%, which indicates that the samplers are operating properly. The precision, accuracy, and bias objectives are being met at 77%, 100%, and 57% of the PQAOs. This is a noted reduction for precision and bias from the 2005-2007 QA report. Nationwide, the samplers seem to be showing slightly more imprecision and markedly more negative bias. At this point, the cause for the trend towards more negative bias is unclear. The cause for the slightly larger imprecision is also unclear, but it does not appear to be related to the type of separator used to achieve the 2.5 micron cut.

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List of Abbreviations

AQS	Air Quality System
CFR	Code of Federal Regulations
CV	coefficient of variation
DQA	data quality assessment
DQOs	data quality objectives
EDO	environmental data operation
EPA	Environmental Protection Agency
ESAT	Environmental Services Assistance Team
FEM	Federal Equivalent Method
FRM	Federal Reference Method
FS	field scientist- Performance Evaluation Program
MQAG	Monitoring and Quality Assurance Group
MQOs	measurement quality objectives
NAAQS	National Ambient Air Quality Standards
NAMS	national air monitoring stations
NERL	National Exposure Research Laboratory
NIST	National Institute of Standards and Technology
OAQPS	Office of Air Quality Planning and Standards
ORD	Office of Research and Development
PE	performance evaluation
PEP	Performance Evaluation Program
PM _{2.5}	particulate matter ≤ 2.5 micrometers
PTFE	polytetrafluoroethylene
PQAO	primary quality assurance organization
QA	quality assurance
QAPP	quality assurance project plan
QA/QC	quality assurance/quality control
QMP	quality management plan
R&P	Rupprecht and Patashnick
SLAMS	state and local monitoring stations
SOP	standard operating procedure
TSA	technical systems audit

Executive Summary

This report documents the quality assurance activities that were undertaken for EPA's PM_{2.5} environmental data operations for the calendar years 2008, 2009 and 2010. The Office of Air Quality Planning and Standards (OAQPS) 3-year data quality assessment indicates that the ambient air monitoring network, in general, has operated in a manner so that decisions can be made within acceptable levels of uncertainty.

In general, the measurement goal of the PM_{2.5} SLAMS Ambient Air Quality Monitoring Program is to estimate the concentration, in units of micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), of particulate matter less than or equal to [a nominal] 2.5 micrometers (μm) that have been collected on a 46.2mm polytetrafluoroethylene (PTFE) filter. For the State and Local Air Monitoring Network (SLAMS) and designated Tribal monitors, the primary goal is to compare the PM_{2.5} concentrations to the annual and 24-hour National Ambient Air Quality Standard (NAAQS). For 2008-2010, the national primary and secondary ambient air quality standards for PM_{2.5} are 15.0 $\mu\text{g}/\text{m}^3$ annual arithmetic mean concentration and 35 $\mu\text{g}/\text{m}^3$ 98th percentile 24-hour average concentration measured in ambient air.

The ambient air monitoring network collects measurements to provide an estimate or a representation of the true ambient air concentration. It is impossible to know with certainty the true value for any measured quantity or estimate. This is due to the potential for measurement uncertainty (measure the same thing twice and you will probably get two different answers) and to population uncertainty (does the measurement here represent the value 4 feet away or does the measurement today represent the value tomorrow). As a result, we may report an estimate that is above some important limit (e.g., the level of an air quality standard) when in fact the true value is below, or we may sometimes report an estimate that is below some important limit when in fact the true value is above. There is no way around this. Incorrect decisions can and will be made.

To reduce the number of incorrect decisions and estimate their probability of occurrence, we carefully design monitoring networks and quality systems. By conducting quality control measurements and periodically evaluating them, we can estimate, in the long run, the proportion of incorrect decisions made. We emphasize *in the long run*. A decision based on an individual measurement or an estimate (such as an annual average) at any individual site may or may not be correct. We cannot know the "truth" about one particular decision. But as we make many decisions we will know the percentage of the time that we are making the correct decision. Therefore, we should not try to defend an individual measurement or an aggregate of measurements from an individual monitor. Instead, we ensure that the monitoring network has been designed and is being operated in a manner so that the errors in the decisions are within an acceptable level.

The data quality objectives (DQOs) process, a seven-step planning approach to develop sampling designs for data collection activities that support decision making, was used to provide a framework for linking measurement uncertainty, population uncertainty and the decision makers' tolerance for making a decision error. Once the DQOs were determined, OAQPS developed a quality system to control and assess completeness, precision, bias, and accuracy in order to ensure an acceptable percentage of correct decisions. Table 1 summarizes data completeness and estimates of the primary data quality indicators of precision, accuracy, and bias at a national level. Comments about

these tables follow. In addition, Table 2 provides QA summary information at the EPA Region, State, and primary quality assurance organization (PQAO) level. The data evaluated in this report were extracted from the Air Quality System (AQS) between March 2012 and May 2013.

Table 1. National 3-year data summary for calendar years 2008, 2009, and 2010.

Data Type	Completeness 3-Year Average	Acceptance Criteria	PQAO Meeting Acceptance Criteria	3-Year Estimate
Routine Data (699)	73%*			
Average Capture Rate	92%			
Collocation Precision	89%	10%	77%	7.9%
Flow Rate Accuracy	88%	4%/5%	100%	0.048%
Performance Evaluations	79%	± 10%	57%	-8.9%

* 699 sites collected data in the 12 quarters from 2008-2010. The 3-year average completeness information is based on this value.

Completeness – Completeness is the percentage of data collected from the amount that were expected or required to be collected. For this report, routine data completeness has been assessed by two methods. The first method is based upon the strictest interpretation of the completeness requirement in *40 CFR 50, App N* that a site must collect 75% valid data in every quarter (12 quarters for the 3-year period) for comparison to the NAAQS. As Table 1 indicates, the 3-year average routine completeness percentage is 73%, a value slightly higher than the percentage of 68% obtained for the 3 years 2005-2007. The number of sites on which this completeness is based decreased from 750 in 2005-2007 to 699 in 2008-2010. Of the 699 samplers reporting data in all 3 years, 513 samplers operated at 75% or greater completeness in every quarter, a count very similar to that reported in 2005-2007, when 510 samplers operated at 75% or greater in every quarter. The second method of estimating routine data completeness is called average capture and is related to completeness during actual operation of a sampler (based on the sampler's start date and end date listed in AQS). The national 3-year average capture rate is 92%, the same as in the previous 3-year QA report. The high capture rates indicate that once a site is operating, it generally maintains a high level of completeness.

Completeness for the collocated precision and flow rate accuracy checks are reasonable and very similar to prior 3-year QA reports. However, a few individual PQAOs need to improve collocated precision completeness. For the bias assessment (Performance Evaluation Program), data completeness averaged 79%, continuing a downward trend seen for the past QA reports: a drop of approximately 2% from 3-year period to 3-year period. The lower completeness rates result in fewer available samples with which to understand the ongoing trend in bias by method.

Precision, Accuracy, Bias Assessments

Precision Assessment (Collocated Precision Data)

Precision is the measure of mutual agreement among individual measurements of the same property. The precision data quality objective (DQO) is based on three years of precision data (75% complete). Therefore, any year or quarter may exceed the 10% precision criteria and still meet the precision data quality objectives across the three year period. The national precision estimate is 7.9% CV and is based on over 26,000 collocated paired values where both routine and collocated QA values are $> 3 \mu\text{g}/\text{m}^3$. Nearly 1,500 pairs are excluded because they involve low concentrations.

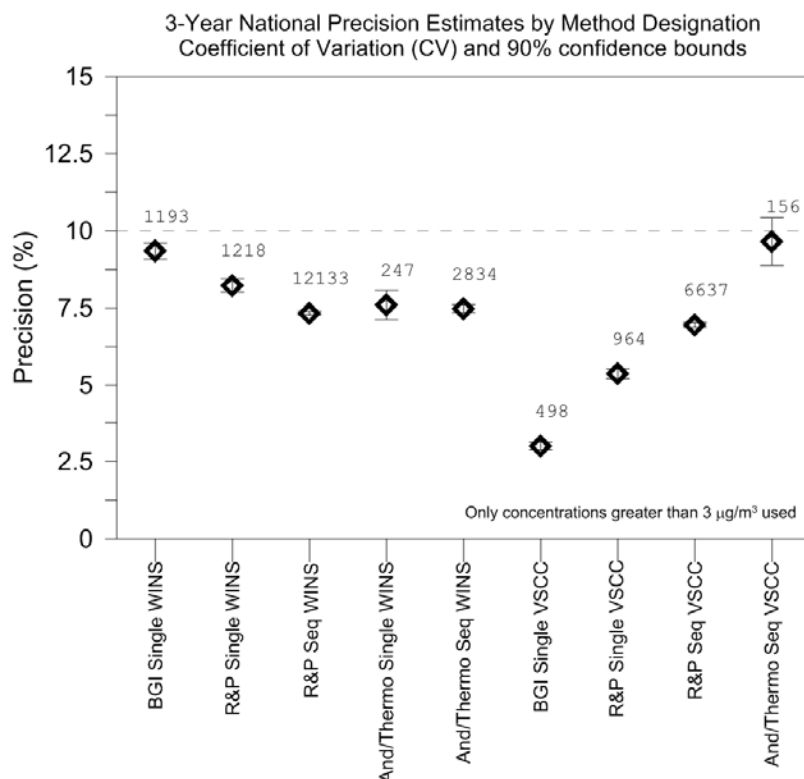


Figure 1. Mean and 90% confidence intervals of 3-year precision estimates by method designation.

Also, approximately 200 (less than 1% of the database) pairs of samples had absolute percent differences greater than 50%, which can skew the results. Excluding these large differences reduces the national estimate from 7.9% to 6.4%; thus, these points are highly influential. In this report, though, all precision pairs are included since the purpose of this report is to summarize all data that are listed in AQS as valid.

Figure 1 provides national 3-year precision estimates for all federal reference and equivalent methods for which precision data are available for 2008-2010. Numbers above the whiskers are the number of pairs included in the estimate. Precision estimates (the upper whisker) range between 3% and 11%. Estimates are below the DQO except for the Andersen/Thermo sequential sampler with a VSCC.

Of the 87 PQAOs, only 20 (23%) had precision CVs equal to or greater than the 10% DQO goal. Compared to the three previous QA Reports, the precision data show a slight increase in the average CV and a decrease in the number of PQAOs achieving the 10% DQO.

Accuracy Assessment (Quarterly Flow Rate Audit Data)

88% of the samplers received at least 5 out of the 6 required audits, and average completeness for flow rate audits was 75% or better at all PQAOs. These numbers are consistent with those seen in

previous 3-year QA Reports.

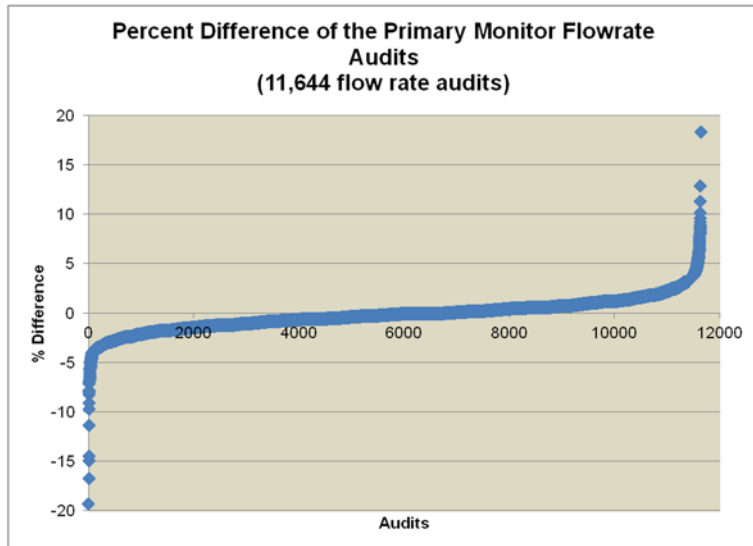


Figure 2. Flow rate audit data for 2008-2010.

Figure 2 displays flow rate audits from the 2008-2010 period. Six high or low outlier values were removed in order to provide a better view of the values within the $\pm 5\%$ design value acceptance criteria. Of the 11,644 audits performed, 98% of the audits were within $\pm 4\%$ of the audit standard and 99% of the audits were within $\pm 5\%$ of the 16.67 L/min design flow rate.

Bias Assessment - (Performance Evaluation Program and Routine Data)

Bias is the systematic or persistent distortion of a measurement process that causes errors in one direction. As with precision, the bias DQO is based on three years of bias data. At a national level, the average bias is estimated at -8.9%. This is markedly more negative than the -3% reported in the 2005-2007 QA Report.

There are approximately 15 large paired differences (slightly more than 1% of the database) with absolute percent differences greater than 50%. Excluding these large differences has minimal impact on the national bias estimate.

Figure 3 provides 3-year bias estimates and 95% confidence intervals for all federal reference and equivalent methods for which bias data is available in 2008-2010. Almost all of the methods have shown a marked change in bias, namely more negative biases in 2008-2010 compared to previous

years. The R&P single and sequential samplers with WINS impactors show the most negative biases, near -12%. Samplers with the very sharp cut cyclone (VSCC) have the least negative biases. To date, the cause for the more negative biases is unclear, since all methods in all seasons are showing this shift in bias.

Summary Table

On the following two pages, Table 2 summarizes the completeness and data quality indicators by EPA Region for 2008-2010 data. The statistics are presented at the PQAQ level. Details of how the estimates were generated are explained in Section 2 and Attachments 1-6. Data from both complete and incomplete sites are used to estimate the data quality indicators.

For data completeness, highlighted boxes indicate that the PQAQ has an average data completeness that is less than 75%. For the data quality estimates, highlighted boxes indicate that the PQAQ has a precision estimate that is > 10% or a bias estimate that is > 10% or < -10%.

The intent of this table is to help focus on where improvements to the quality system can be made. Incomplete data or data exceeding the acceptance criteria decrease one's certainty in a mass estimate. One should not construe highlighted cells in Table 2 as implying that the data are invalid.

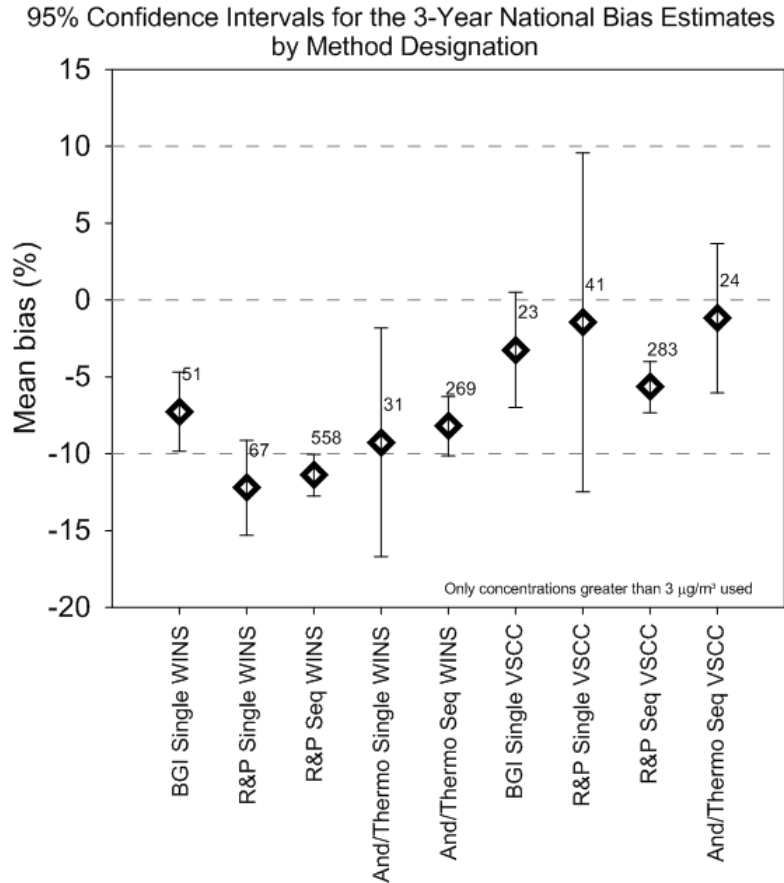


Figure 3. Mean and 95% confidence intervals of 3-year bias estimates by method designation.

The acceptance criteria are simply goals and are not limits by which one would consider the data unusable.

Table 2. 2008-2010 PM_{2.5} Data Quality Summary

Region	State	PQAO	Routine %	Precision %	CV	Bias % Comp	Bias %	Bias Outlier (A)
			Comp	Comp				
1	CT	0251	95%	100%	10.5	83%	-12.4	
1	MA	0660	97%	100%	8.3	100%	0.2	
1	ME	0635	85%	90%	8.0	71%	-8.8	
1	NH	0762	99%	100%	7.6	100%	-9.0	
1	RI	0907	86%	64%	6.9	72%	-6.4	
1	VT	1119	97%	100%	4.3	100%	-8.1	
2	NJ	0764	88%	100%	9.5	96%	-15.7	
2	NY	0768	91%	100%	5.7	79%	-9.4	
2	PR	0889	46%	70%	7.6	71%	-37.1	
2	VI	1124	97%	84%	37.0	7%	-29.8	
3	DC	0350	95%	100%	5.8	93%	-13.3	
3	DE	0294	91%	100%	9.0	96%	-5.2	*
3	MD	1002	84%	75%	5.0	88%	-10.9	
3	PA	0021	91%	100%	8.0	87%	-8.3	
3	PA	0851	82%	84%	11.5	71%	-5.0	
3	PA	0861	78%	100%	10.5	100%	-3.7	
3	VA	1127	92%	100%	4.0	88%	-14.1	
3	WV	1150	97%	91%	5.4	88%	-6.4	
4	AL	0013	92%	100%	3.2	92%	-9.7	
4	FL	1328	88%	100%	7.6	100%	-24.8	
4	GA	0437	87%	95%	9.5	88%	-7.6	*
4	KY	0584	95%	100%	5.2	79%	-10.5	
4	MS	0703	89%	100%	6.9	92%	-3.5	
4	NC	001	85%	100%	12.5	67%	-17.4	
4	NC	0776	93%	100%	8.2	83%	-14.1	
4	SC	0971	66%	100%	5.1	71%	-13.6	
4	TN	1025	94%	100%	8.4	96%	-16.1	*
5	IL	0258	93%	100%	12.3	75%	-3.9	
5	IL	0513	94%	100%	9.1	100%	-5.1	
5	IN	0520	89%	100%	5.4	100%	-8.1	
5	MI	0685	95%	98%	6.0	100%	-13.1	
5	MI	W44	44%	4%	87.3	13%	92.2	
5	MN	0700	94%	93%	5.2	79%	-13.3	
5	MN	407	30%	Omitted*	N/A	7%	-21.1	
5	OH	0012	81%	100%	9.8	100%	-2.2	
5	OH	0151	77%	100%	4.4	87%	-4.9	
5	OH	0220	84%	100%	10.3	87%	-13.7	
5	OH	0229	92%	100%	6.8	100%	-7.0	*
5	OH	0287	97%	100%	4.2	100%	-1.7	
5	OH	0595	93%	100%	7.2	100%	-3.3	
5	OH	0634	97%	100%	4.2	87%	-8.6	
5	OH	0805	86%	100%	4.7	67%	-16.3	*
5	OH	0807	96%	100%	7.9	20%	-14.7	
5	OH	0809	90%	100%	7.8	60%	-6.8	
5	OH	0880	87%	100%	13.8	100%	-5.8	*
5	OH	1259	95%	100%	5.2	96%	0.8	
5	WI	1175	91%	97%	6.9	96%	-1.8	*

* precision calculated only for sites active for 6 or more quarters.

(A) astericks after Bias % indicates bias includes absolute percent difference > 50%.

Table 2. 2008-2010 PM_{2.5} Data Quality Summary

Region	State	PQAO	Routine %	Precision %	CV	Bias % Comp	Bias %	Bias Outlier (A)
			Comp	Comp				
6	AR	0055	96%	100%	2.6	92%	-10.1	*
6	LA	1001	94%	80%	8.9	100%	-22.5	
6	NM	0017	93%	100%	9.5	100%	4.3	*
6	NM	0765	83%	100%	8.3	83%	-12.7	*
6	OK	0812	96%	100%	8.9	88%	1.2	*
6	OK	807	92%	100%	8.8	27%	3.2	
6	OK	905	31%	100%	10.1	13%	-3.5	
6	OK	920	94%	100%	4.7	13%	-18.0	
6	TX	1035	92%	100%	7.4	58%	-7.4	
7	IA	0613	98%	100%	5.9	53%	-7.1	
7	IA	0874	95%	100%	8.5	100%	-8.6	
7	IA	1080	95%	100%	8.5	38%	2.8	
7	KS	0563	91%	100%	6.5	100%	-8.9	
7	MO	0588	81%	100%	3.9	83%	-5.1	
7	NE	0752	80%	100%	9.7	93%	-10.6	
7	NE	0816	75%	81%	16.4	80%	-1.9	
8	CO	0240	94%	100%	7.0	54%	-10.9	
8	CO	750	71%	100%	5.5	27%	0.8	*
8	MT	0730	83%	90%	4.9	79%	-4.7	
8	ND	0782	79%	100%	17.1	83%	2.1	
8	SD	0973	96%	82%	9.4	67%	-7.0	
8	UT	1113	91%	100%	9.9	79%	-0.2	
8	WY	1188	89%	100%	8.8	71%	-10.4	
9	AZ	0053	95%	100%	7.6	63%	-11.9	
9	AZ	0643	89%	96%	8.7	87%	-8.5	
9	AZ	0864	97%	87%	18.8	100%	-20.3	
9	AZ	0865	97%	100%	10.3	87%	15.0	*
9	AZ	615	96%	100%	9.5	60%	-15.8	
9	AZ	780	74%	100%	13.7	None	N/A	
9	CA	0086	83%	100%	6.1	96%	-3.8	
9	CA	0145	82%	86%	11.6	100%	-10.7	
9	CA	0942	71%	90%	11.5	63%	-8.3	
9	CA	0972	89%	100%	5.4	100%	-14.4	
9	CA	577	28%	85%	13.3	None	N/A	
9	HI	0481	91%	Omitted*	N/A	33%	-19.2	
9	NV	0226	76%	100%	10.4	100%	-2.6	
9	NV	1138	98%	100%	3.8	93%	-9.2	
10	AK	0015	85%	100%	7.4	93%	-19.6	
10	ID	0511	82%	100%	6.0	96%	-12.5	
10	ID	180	48%	100%	13.2	53%	-9.6	
10	OR	0821	87%	67%	6.4	96%	-16.4	
10	WA	1136	76%	91%	6.4	50%	-14.4	

* precision calculated only for sites active for 6 or more quarters.

(A) astericks after Bias % indicates bias includes absolute percent difference > 50%.

1. Introduction

The Quality Assurance (QA) Report is a 3-year evaluation to determine whether or not the PM_{2.5} monitoring network is providing data of acceptable quality for its primary use: the comparison of routine ambient air quality data to the national ambient air quality standards (NAAQS). The Report evaluates adherence to the quality assurance requirements described in *40 CFR 58 Appendix A* and assesses the data quality indicators of completeness, precision, accuracy, and bias for the calendar years 2008, 2009 and 2010.

Data used in this report were extracted from the Air Quality System (AQS) between March 2012 and May 2013 for SLAMS, Tribal, and NCore sites reporting PM_{2.5} data that are collected using Federal Reference or Federal Equivalent method designation codes.

Most of the data quality indicator evaluations are at the national and the primary quality assurance organization (PQAO) level of aggregation, with some evaluations occurring at the method designation and site level.

Organization of QA Report

The report is organized into two main sections:

Section 1: Overview of the PM_{2.5} monitoring program and the implementation aspects of the quality system compared to the quality assurance requirements described in *40 CFR 58 Appendix A*.

Section 2: Results of the data quality assessment and preliminary conclusions.

In addition, five attachments provide more information at the site and PQAO level of aggregation that could not be explained in any detail in the sections, and a sixth attachment details the development of the databases used for the assessment.

Program Overview

The criteria pollutant defined as “particulate matter” consists of a broad class of substances that exist as liquid or solid particles over a wide range of sizes. As part of the ambient air quality monitoring program, two particle size fractions are measured: those less than or equal to [a nominal] 10 micrometers (μm) in aerodynamic diameter and those less than or equal to [a nominal] 2.5 μm in aerodynamic diameter, hereafter referred to as PM₁₀ and PM_{2.5}, respectively. This report summarizes findings for PM_{2.5} only.

The background and rationale for the implementation of the PM_{2.5} ambient air monitoring can be found in the *Federal Register 40 CFR 50 July 18, 1997*. In general, the measurement goal of the PM_{2.5} network is to estimate the concentration, in units of micrograms per cubic meter (μg/m³), of PM_{2.5} collected over 24-hour periods.

A major objective for the collection of the data is to compare PM_{2.5} concentrations to the PM_{2.5} NAAQS. Prior to December 12, 2012, the PM_{2.5} NAAQS were 15.0 μg/m³ for annual arithmetic

mean concentrations and 35 µg/m³ for 24-hour average concentrations; these were the standards in place during the collection of the data summarized in this report. The PM_{2.5} NAAQS were revised December 12, 2012, to a new primary standard of 12 µg/m³ for the annual arithmetic mean concentration. The primary standard for the 24-hour average concentrations remains 35 µg/m³.

As described in the following section on Data Quality Objectives (DQOs), OAQPS designed a quality system based upon the network's primary objective, which was comparison of data to the NAAQS. For this comparison, State, Tribal, and Local monitoring organizations are required to sample using a Federal Reference Method (FRM) or Federal Equivalent Method (FEM). The description of the PM_{2.5} FRM is included in *40 CFR 50, App. L*, published as a final rule in the *Federal Register* on July 18, 1997. Since that time, additional FRM and many FEM sampling methods have been designated, and their descriptions may be found on the AMTIC Website.¹ All PM_{2.5} sampling sites that provide data for comparison to either the 24-hour or the annual PM_{2.5} NAAQS for the purpose of addressing attainment and nonattainment decisions must employ designated FRM or FEM sampling techniques.

PM_{2.5} Data Quality Objectives

DQOs are qualitative and quantitative statements derived from the DQO Process that clarify the monitoring objectives, define the appropriate type of data, and specify the tolerable levels of potential decision errors that will be used as the basis for establishing the quality and quantity of data needed to support decisions. The PM_{2.5} DQOs are based on the desire of the decision maker(s) to estimate the concentration at a site (be it a 24-hour estimate or a mean) within acceptable levels of error, especially when concentrations are near the NAAQS.

The DQO Process is an iterative, statistics-based process which allows the decision maker to balance tolerable decision errors with the costs of increased data certainty (i.e., more precise or unbiased data, higher sampling frequencies, or larger networks). In order to provide the decision makers information on the various data quality tradeoffs, the DQO Process often uses power curves. The 1999-2001 PM_{2.5} QA Report² provides a detailed description of the process that was employed to develop the PM_{2.5} DQOs.

Data Quality Indicators

Once a DQO is established, the quality of the data must be measured and evaluated to ensure that it is maintained within the established acceptance criteria. Measurement quality objectives are designed to evaluate and control various phases (sampling, preparation, analysis) of the measurement process to ensure that total measurement uncertainty is within the range prescribed by the DQOs. The quality of data in a database can be summarized in terms of the following data quality indicators:

Completeness – A measure of the amount of valid data obtained from a measurement system compared to the amount that was expected to be obtained under correct, normal conditions. Data

¹ <http://www.epa.gov/ttn/amtic/pmfrm.html>

² Year Quality Assurance Report for Calendar Years 1999, 2000, and 2001 -- The SLAMS PM_{2.5} Ambient Air Monitoring Program <http://www.epa.gov/ttnamti1/files/ambient/pm25/qa/qarept9901.pdf>

completeness requirements are included in the reference methods (*40 CFR 50*). The completeness goal for both routine data and QA data was established at 75%.

Precision – A measure of mutual agreement among individual measurements of the same property usually under prescribed similar conditions. This is the random component of error. Precision is estimated using collocated instruments. The measurement precision goal was 10% coefficient of variation (CV) aggregated over a 3-year period for each PQAQO.

Bias – The systematic or persistent distortion of a measurement process which causes error in one direction. Bias will be determined by estimating the positive and negative deviation from the true value as a percentage of the true value. Bias is estimated using collocated instruments that are set up by a group independent of the monitoring organization. This independent program implementing the audits is called the Performance Evaluation Program (PEP). The measurement bias goal was $\pm 10\%$ aggregated over a 3-year period for each reporting organization

Comparability – A measure of confidence with which one data set can be compared to another. Comparability will not be addressed in this document, but it can be assessed by using the bias information.

Representativeness – A measure of the degree to which data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, a process condition, or an environmental condition. Representativeness, which deals mainly with the population variability indicators (spatial and temporal variability), will not be addressed in this document.

Accuracy – This term has frequently been used to represent closeness to “truth” and includes a combination of precision and bias error components; the term has been used throughout the CFR. In this report, however, “accuracy” refers to errors in flow rate only.

The results of the assessments of the data quality indicators—completeness, precision, accuracy (flow rate) and bias—will be discussed in Section 2.

Changes in CFR

In 2006, revisions were made to *40 CFR Part 58 Appendix A*. The changes took effect in CY2007; thus, this is the first 3-year report based wholly on data collected after these changes took effect. The following discussion summarizes the changes that affect PM_{2.5}:

Use of the Term Primary Quality Assurance Organization

With the signing of the Ambient Air Monitoring Regulation by the Administrator on October 17, 2006, the term “Reporting Organization” was replaced with the term “Primary Quality Assurance Organization (PQAQO)” in *40 CFR Part 58 Appendix A section 3.1*. EPA believed that there had been some confusion over a number of years about how the term “reporting organization” was used. It appeared that some organizations used the term as it is currently defined, and some used it to identify itself as the agency reporting data to AQS. Therefore, EPA believed that the term “reporting organization” had two applications. By adding the term PQAQO

that focuses specifically on QA requirements and leaving the term “reporting organization” for other uses, EPA can now identify sites that are aggregated for data quality assessment purposes.

Changes in Collocation Requirement

The 2006 regulation (implemented in 2007) reduced the collocation frequency from 1-in-6 day to 1-in-12 day sampling. The precision completeness assessments take this reduced frequency into account.

Changes in PEP Implementation Requirement

The 2006 regulation (implemented in 2007) reduced the PEP audit requirements from 25% of the sites (4 audits per site) within a PQAQ each year to 5 audits for PQAQs with 5 sites or less and 8 audits for PQAQs with more than 5 sites. The bias completeness assessments take this reduced frequency into account.

Change in Flow Rate Audit Requirements

The 2006 regulation (implemented in 2007) reduced the flow rate audit requirement from auditing each site 4 times a year (once per quarter) to twice a year (every 6 months). The flow rate completeness assessments take this reduced frequency into account.

2. Assessment of Data Quality Indicators

This section provides an assessment of the data quality indicators of completeness, precision, accuracy, and bias for the calendar years 2008, 2009, and 2010. All assessments were performed on data extracted from AQS between March 2012 and May 2013 for SLAMS, Tribal, and NCore sites reporting PM_{2.5} data that were operating federal reference or federal equivalent methods.

Data Completeness

This section evaluates the completeness of routine PM_{2.5} concentration data, quarterly flow rate audits, quality assurance data used for estimating precision, and quality assurance data used for estimating bias.

Completeness – Routine PM_{2.5} Data

Table 2-1 provides an estimate of 3-year routine data completeness for sites operating samplers designated as SLAMS, NCore, or Tribal and which are designated as primary (indicating they are to be compared to the PM_{2.5} NAAQS). Attachment 1 provides a listing of completeness at the site level, and Attachment 6 provides details about the data processing steps to calculate the values in Table 2-1 and Attachment 1. Compared to values reported for 2005-2007, there are approximately 50 more samplers reporting data in 2008-2010, 50 fewer samplers reporting data in all 3 years, and nearly the same number of samplers with all quarters 75% complete. The percent completeness is higher in 2008-2010 (73%, up from 67%) and the data capture is the same as in 2005-2007.

Table 2.1. 2008-2010 routine PM_{2.5} data completeness summary for primary samplers.

Monitor Type	Samplers Reporting Data 08-10	Samplers Reporting Data All 3 Years	Samplers with All Quarters 75% Complete	% Completeness Samplers 75% Complete to Samplers Reporting Data All 3 years	Data Capture Rate of Sampler Reporting Data in All 3 years
SLAMS	978	699	513	73% (= 513 / 699)	92%
Tribal	24	10	2	20% (= 2 / 10)	77%
Total	1002	709	515	73% (= 515 / 709)	92%

Completeness was assessed by two methods: (1) as it relates to the strictest requirement in the Code of Federal Regulations for use in comparison to the NAAQS, and (2) by capture rate. Table 2-1 shows that during some part of the 3-year time period, 1,002 SLAMS, Tribal, or NCore samplers reported data. However, within the 3-year period, nearly 300 samplers either started up after the first quarter of 2008 or shut down before the fourth quarter of 2010. Of the 709 samplers that operated all 3 years, 515 or 73% met the CFR completeness criteria of maintaining 75% completeness in each quarter (12 quarters). Note that nonattainment decisions can be made with less information than the 75% completeness requirement. Information on completeness using these exceptions are not generated for this report but are described in design value reports.

A second method of estimating completeness is called “capture rate.” Average capture for a site is calculated starting from the first data point submitted to AQS and ending at either the end of CY2010 or the sampling end date for that sampler. As an example, if a sampler started reporting data midway through a quarter, the completeness estimate would not be based on the number of

values expected in the full quarter but only the number of values expected from the sampler start date to the end of the quarter (based on the site's identified sampling frequency). This completeness estimate is not related to the data requirements for comparison to the NAAQS; however, it can provide a more technical evaluation of data collection performance and can be used to show improvement over time. Attachment 1 provides capture rates for each sampler at quarterly, annual, and 3-year levels of aggregation. The national average capture rate was 92%, exactly the same rate as for the 3-year period 2005-2007. In general, the data seem to indicate that once a site was operating, it maintained an acceptable level of completeness for most quarters. However, the 73% completeness, relative to the CFR requirement, indicates that more than 25% of the primary PM_{2.5} monitors do not meet the 75% completeness for 12 consecutive quarters (3-year period).

Completeness – Flow Rate Audits

As of 2007, monitoring organizations are required to perform and submit flow rate accuracy audits on all their routine samplers twice a year, with 1 audit every 6 months. Attachments 4a and 4b present the flow rate completeness information for the 3 years of data collection at the site level. Attachment 4a is for any monitors designated as POC-1; any flow rate data in AQS for monitors greater than POC-1 are in Attachment 4b. Table 2-2 summarizes across all POC values and presents 3-year estimates of flow rate completeness. Attachment 6 provides details about the data processing steps to calculate the values in Table 2-2 and Attachment 4a and 4b. Completeness is based on each sampler's start and end date.

Flow rate audits are generally very complete. Only 12% of the routine samplers fail to meet the 75% completeness criteria for the period of operation (between start and end date) for 2008-2010, and only 5 (6%) of the 89 PQAOs fail to meet the 75% completeness. The 88% completeness estimate at the sampler level is very similar to the 2005-2007 QA Report where completeness was 86%. The number of PQAOs meeting completeness has improved from 89% in 2005-2007 to 94% in 2008-2010.

Table 2.2. Flow rate completeness by sampler and PQAQ.

Type	Total Number	Number < 75% Complete	Completeness
Routine Sampler (all POCs)	1085	133	88%
PQAQs	89	5	94%

Completeness – Collocated Precision

Monitoring organizations are required to collocate 15% of the sites of each method designation used in their routine monitoring network and to collect a collocated precision sample every 12 days. For Federal Reference Methods, a sampler of the same method is to be used for the collocated sampler. Prior to calendar year 2007, the collocation frequency was one sample every 6 days.

Table 2-3 provides the 3-year collocated precision completeness information by EPA Region for the number of sites collocated in 2008-2010. Attachments 2 and 3 provide 3-year site precision information for each collocated site to show adherence to the sampling frequency requirement.

To provide a more equitable estimate of the number of sites required to be collocated for precision, only sites operating for 6 quarters (18 months) were counted when determining the number of required collocation sites.

Also, even though similar methods are supposed to be collocated, this requirement was not enforced in the data reported in Table 2-3 and Attachments 2 and 3. As part of the development of this QA Report, sites with dissimilar methods were identified and shared with the EPA Regions with the goal that these sites would change samplers so that similar methods are collocated in the future.

Table 2.3. 2008-2010 PM_{2.5} collocated precision completeness aggregated by EPA region (excluding continuous methods).

Region	Number of Sites ¹	# of Required Collocated Sites ²	# of Collocated Sites	Average PQAQ Completeness ³
1	45	10	13	92%
2	52	9	7	85%
3	82	14	17	94%
4	167	29	56	94%
5	181	39	41	84%
6	66	13	17	100%
7	41	9	12	100%
8	56	12	15	79%
9	104	26	25	85%
10	39	8	9	80%
Total	833	169	212	89%⁴

1= Total number of sites operating for at least 6 quarters.

2= Number derived by aggregating number required for each method in each PQAQ.

3=Region percent complete is average of percent complete for PQAQ in each region, having first averaged across methods within each PQAQ.

4=Total percent complete is average of percent complete for each PQAQ, not average of Region percent complete.

The total number of collocated sites (212) indicates that more collocated sites were operated than required (169). This has been seen in prior reports and might be explained by the fact that the collocation requirement was initially 25% when the PM_{2.5} regulation was first promulgated. Some PQAQs may still be collocating at the higher 25% rate instead of the lower 15% rate as is currently required. The average percent completeness is less than 100% because some methods are under-collocated, despite the total number of collocated sites exceeding the required number.

The last column in Table 2-3 provides an estimate of the average collocation completeness of the PQAQs within each region. Details of the collocation completeness values for each PQAQ can be found in Attachments 2 and 3. The 89% average completeness in the total row was estimated by averaging the completeness percentages from each PQAQ and method (not by Region). From a national average perspective, the 75% completeness goal has been met. However, 18 out of 88 PQAQs fell short of the 75% completeness goal.

Completeness – Bias - Performance Evaluation Program (PEP) and Routine Data Pairs

The bias data completeness estimate is based on data collected from two different organizations, the Environmental Services Assistance Team (ESAT) contractors who collect the PEP data, and the monitoring organizations that collect the routine data. In addition, some PQAQs implement PEP outside the ESAT contract. Completeness based first upon PEP data completeness and then upon the completeness of the PEP/routine data bias pairs is discussed below. Figure 2.3

represents the 2008-2010 PEP completeness estimates. A complementary 3-year QA report for the PEP will provide more detailed information on PEP data completeness.

PEP Data Completeness

In 2005 and 2006, the completeness goal of the PEP was to collect data from 25% of each method designation in a PQAQ 4 times per year (once per quarter). In 2007, the audit frequency changed to 5 audits for PQAQs with less than or equal to 5 monitoring sites and 8 audits for PQAQs with more than 5 sites. For a national estimate, the number of active sites operating in each year were 993 for 2008, 995 for 2009, and 990 for 2010 (Figure 2.1), and these numbers were used for the completeness assessment. Active sites were defined as follows:

- PM_{2.5} sites identified as SLAMS, PAMS, Tribal, NCore (no monitors designated as “other”),
- sites using a method designated as FRM or FEM (speciation monitors are not counted because they are not considered FRM/FEM),
- sites providing at least one value in the year, and
- sites associated with the PQAQ for at least 1 day within the calendar year.

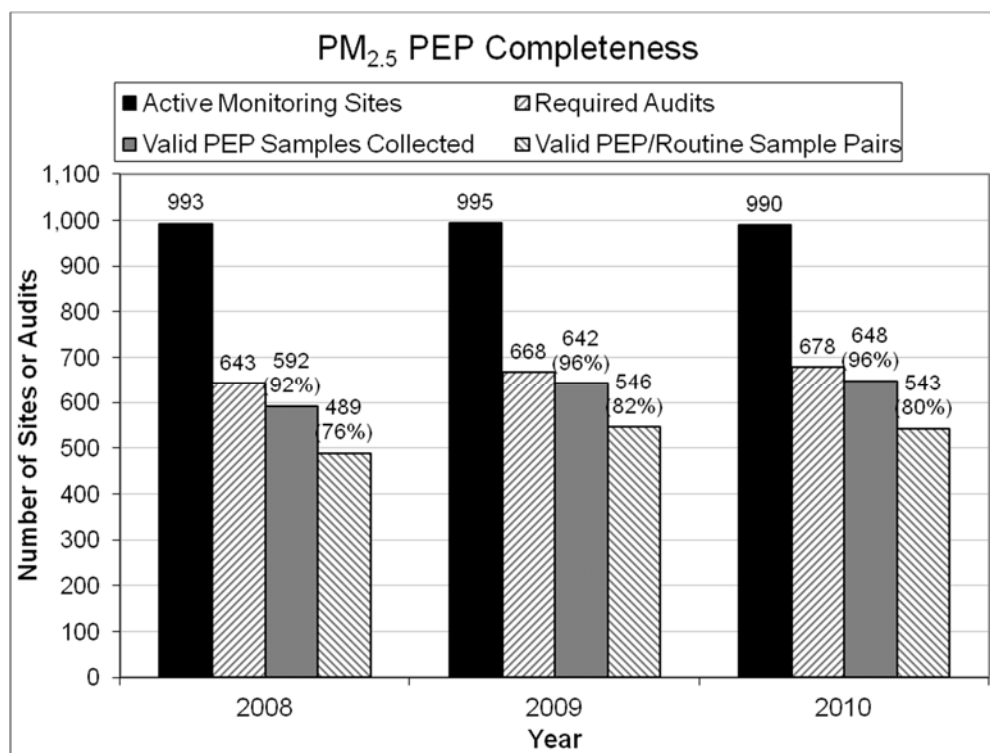


Figure 2.1. PEP completeness, national assessment.

Sites that were discontinued in a particular year were counted in this analysis as active for the entire year, possibly causing an overestimate in the required number of audits for that particular PQAQ. There may also be sites that were transferred from one monitoring organization to another that were not reported to AQS, also possibly

affecting the analysis. In light of these issues, the information provided is a reasonable assessment, and provides some assurance that the PEP is providing audits at reasonable levels of completeness for most PQAQs.

In Figure 2.1, the second column for each year, the number of required audits, is the total number of audits that should have been performed. This is calculated as the sum of required audits by PQAO where PQAOs with 5 or fewer active monitoring sites are required to have 5 audits, and PQAOs with more than 5 monitoring sites are required to have 8 audits, per year. The third column represents the number of valid PEP audits for each year. Valid audits are considered any audit in which the PEP measured a valid sample, including samples that were below the 3 $\mu\text{g}/\text{m}^3$ cut-off value. PEP completeness is very high—92% in 2008, 96% in 2009, and 96% in 2010—where PEP completeness is defined as the number of valid PEP samples collected (regardless of concentration) compared to the number of required audits.

PEP/Routine Sample Completeness

For every PEP value, a corresponding valid routine value is needed in order to calculate bias. The fourth column for each year in Figure 2.1 represents the number of valid PEP/routine pairs. Completeness of the PEP/routine pairs for the years 2008-2010 was 76%, 82%, and 80%, respectively, where completeness is defined as the ratio of the number of valid PEP/routine pairs (regardless of concentration) to the number of required audits.

Table 2.4 presents the completeness estimates of the PEP/routine data pairs and shows the percentage of data retained as validation and concentration limit restrictions are applied.

Table 2.4. PM_{2.5} PEP and routine data comparison.							
Year	Required Audits	Valid PEP Samples Collected	Valid PEP /Routine Sample Pairs	Final Pairs $\geq 3 \mu\text{g}/\text{m}^3$	% of PEP and Routine Data Retained (Lost)		
					Valid PEP Samples	Valid PEP/Routine Pairs	Pairs $\geq 3 \mu\text{g}/\text{m}^3$
2008	643	592	489	465	92% (8%)	76% (24%)	72% (28%)
2009	668	642	546	508	96% (4%)	82% (18%)	76% (24%)
2010	678	648	543	507	96% (4%)	80% (20%)	75% (25%)
Total	1,989	1,882	1,578	1,480	95% (5%)	79% (21%)	74% (26%)

As mentioned in the previous section, 5% of the required audits do not have valid PEP samples, as shown in column 6 of Table 2.4. To estimate bias, valid PEP and routine data must be paired. Column 7 of Table 2.4 shows that approximately 20% of the required audits do not have valid PEP/Routine pairs. Five percent is due to no valid PEP sample, and the remaining 16% is due to no matching valid routine sample, a percentage that is smaller than that observed during 2005-2007, when 23% was lost. Possible causes for lost valid pairs include:

- the PEP program making visits on a day when the routine monitor was not operating,
- data entry problems in either monitoring program so that routine and PEP samples do not match (usually problems with sample date or AQS site ID), or
- data invalidation or subsequent loss of data from the routine monitoring program.

To estimate bias, it is also required that both the PEP and routine concentrations be greater than or equal to 3 $\mu\text{g}/\text{m}^3$. Column 8 of Table 2.4 shows that approximately 26% of the required audits do not have valid PEP/Routine pairs with both concentrations greater than or equal to 3 $\mu\text{g}/\text{m}^3$. That is, an additional 5% of data is lost due to the minimum concentration requirement, a loss rate consistent with that observed in 2005-2007.

Attachment 5 provides information at the PQA level including number of active sites, number of required PEP audits, and number of reported valid pairs. Of the 87 PQAOs, 28, or approximately one-third, have fewer than 75% of the required number of valid pairs.

Precision - Collocated Sampling

National Precision Estimates

The collocated precision results are estimated using collocated paired data of the same method designation when both concentration values are greater than 3 µg/m³. All percent differences were retained in all calculations, even large percent differences such as those greater than 50%.

Data are included only for monitors identified as “primary” in AQS that operated for at least 6 quarters in 2008-2010.

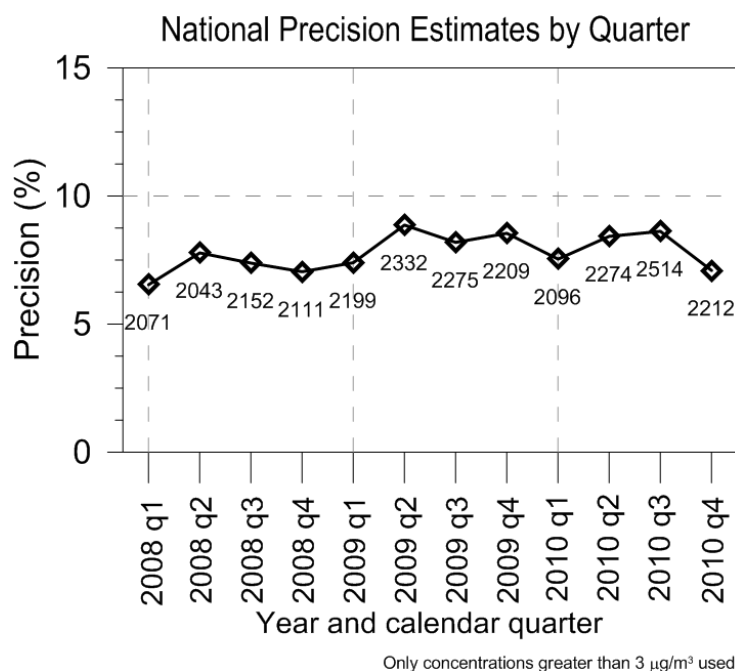


Figure 2.2. National 3-year PM_{2.5} collocated precision estimates.

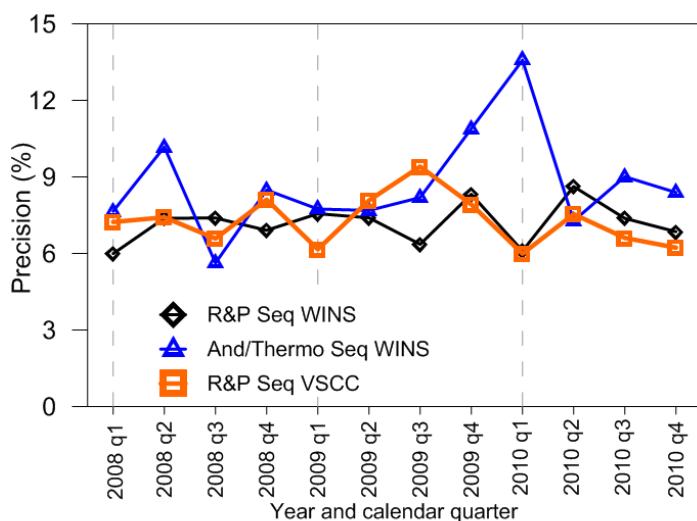


Figure 2.3. National 3-year PM_{2.5} collocated precision estimates for the most common method designations.

Figure 2.2 provides national estimates of precision for each quarter for calendar years 2008, 2009 and 2010. Specifically, the precision value denoted by each diamond represents the upper bound of the 90% confidence interval for the national estimate of precision for each quarter of each year, as per Equation 11 in 40 CFR Part 58 Appendix A. The values listed below each quarterly data point represent the number of precision pairs from which the precision estimates were derived. Note that each quarterly precision estimate consists of pairs of collocated measurements from multiple sampling methodologies, and trends may therefore be due to changes in precision, changes in the mixture of sampling methodologies, or a combination of both.

For the 3-year time period, quarterly precision estimates are below the 10% DQO and are consistently around 7%-8% coefficient of variation. That is, precision does not appear to be trending towards larger or smaller imprecision. Variability in PM_{2.5} measurements appears to be stable over time.

Figure 2.3 illustrates the upper bound of the 90% confidence interval for the national estimate of precision for each quarter of each year for the three most commonly used method designations: the R&P sequential with WINS, the R&P sequential with a VSCC, and the Andersen sequential with WINS.

The R&P instruments are producing precision results below the 10% goal for all quarters. The Andersen/Thermo sequential with WINS has 3 quarters with precision estimates at or above the 10% goal.

Figure 2.4 provides 3-year precision estimates for all federal reference and federal equivalent methods that reported precision data in 2008-2010. For this figure, the center of the diamond is the national CV estimate, the lower whisker is the lower bound of the 90% confidence interval, and the upper whisker is the upper bound. Thus the upper whisker in this plot corresponds to the

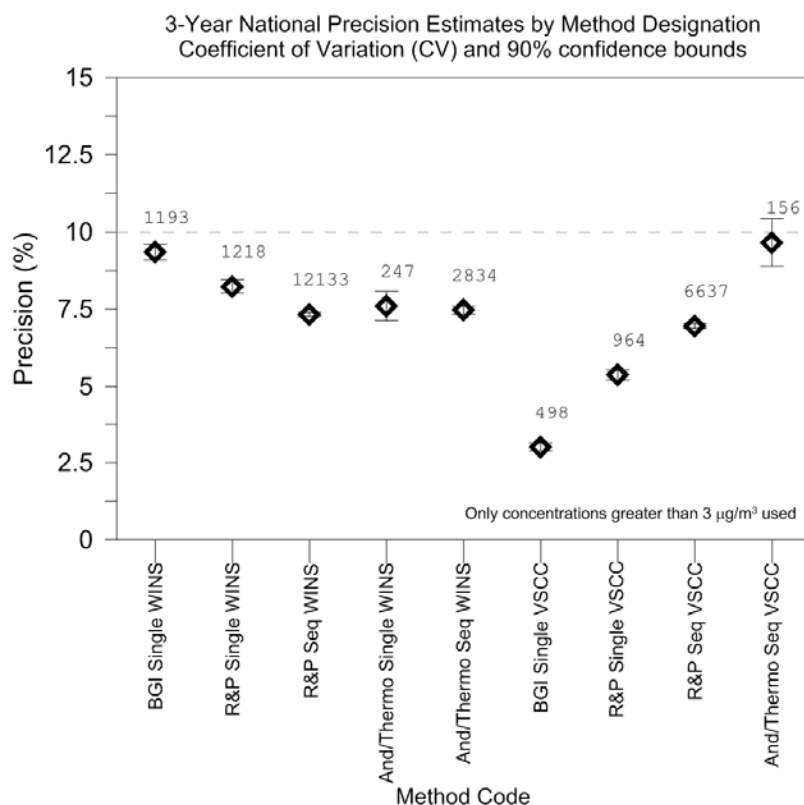


Figure 2.4. Mean and 90% confidence intervals of 3-year precision estimates by method designation.

estimates graphed in Figures 2.2 and 2.3. (Note that the whiskers may not extend outside the diamond, which indicates that the confidence interval is narrower than the diameter of the diamond.) The numbers above the whiskers indicate the number of paired collocated values that were used in the precision estimates.

In 2005, federal equivalent method (FEM) designations were approved for samplers using the very sharp cut cyclone (VSCC). The precision data was evaluated separately for these instruments to determine if there might be any difference in precision using the VSCC. The last four methods plotted (far right) are method designations using VSCC. In some cases, a method using a

VSCC has a larger CV and in other cases a smaller CV than the same method using a WINS. Precision does not appear to vary consistently by type of separator used to achieve the 2.5 micron cut.

EPA Region/PQAO Precision

The DQO for precision is established using 3 years of data at the PQAO level. Attachment 2

presents 3-year precision estimates for each site within each PQAQ and for each PQAQ. PQAQ estimates are calculated by weighting the precision estimates from each site by the number of pairs associated with each site. Attachment 3 presents 3-year precision estimates for each PQAQ in each EPA Region and for each EPA Region. Aggregating to the regional level weighted each of the PQAQs within each Region equally so that the Regional estimate was not overly influenced by one or a few PQAQs. To aggregate to the Regional level, the CVs were pooled, not averaged, which is consistent with the protocol for dealing with statistics of variation. In these attachments, the upper bound of the 90% confidence interval for CV is what is reported, as per Equation 11 of 40 CFR 58 Appendix A.

The national precision estimate is 7.9 % CV and is based on over 26,000 collocated paired values where both values are greater than or equal to 3 $\mu\text{g}/\text{m}^3$. In calculating this national precision estimate, only those paired values collected using identical method designations were included, so as to represent variability only. At the PQAQ level, all paired values were used to maximize the size of the precision database at the PQAQ level. Of the 87 PQAQs that collected precision data, 20 had precision CVs greater than the 10% DQO goal. Four PQAQs reported no precision data, reported data for monitors that were denoted “Special Purpose,” or operated for less than 6 quarters. Therefore, precision estimates were not developed for these 4 PQAQs. Compared to the three previous QA Reports, the data show a slight increase in the national CV estimate as well as a slight increase in the number of PQAQs not achieving the 10% DQO, as shown in Tables 2-6 and 2-7 later in this section.

Accuracy - Flow Rate Audits

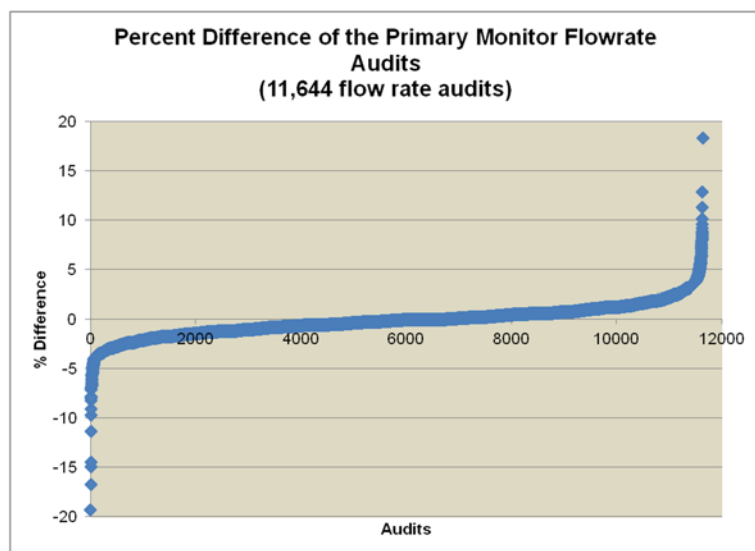


Figure 2.5. Flow rate audit data for 2008-2010.

There are two acceptance criteria for flow rate: (1) the flow rate measured by the FRM must be within 4% of the flow rate measured by an independent transfer standard, and (2) the flow rate measured by the FRM instrument must be within 5% of the 16.67 L/min design flow rate. Because previous assessments demonstrated consistent acceptable results for flow rate audits, EPA reduced the assessments from 4 times per year to 2 times per year. The accuracy data from the flow rate audits for 2008-2010 continue to indicate that the federal reference

method samplers are operating within the acceptance requirements. Figure 2.5 provides a 3-year summary of the instruments providing flow rate data to AQS. The vertical axis (% difference) is restricted to show from -20% to +20% to provide a better view of the values within the $\pm 5\%$ design value acceptance criteria. This eliminates 6 flow rate audits. Of the 11,644 audits performed, 98% of the audits were within $\pm 4\%$ of the audit standard, and 99% of the audits were within $\pm 5\%$ of the 16.67 L/min design flow rate. The average percent difference in flow rate

and the percentage of PQAOs meeting the acceptance criteria for flow rate has been nearly constant for the past QA Reports, as shown in Tables 2-6 and 2-7 later in this section.

Bias- Performance Evaluation Program and Routine Data

National Bias Estimates

The bias results are estimated using collocated paired data where one of the instruments is operated by a State, Local, or Tribal entity and the other is operated by the Performance Evaluation Program. Both concentrations must be greater than 3 $\mu\text{g}/\text{m}^3$ to be included in the following figures. All percent differences were retained in all calculations, even large percent differences such as those greater than 50% or less than -50%. Data are included only for monitors identified as “primary” in AQS.

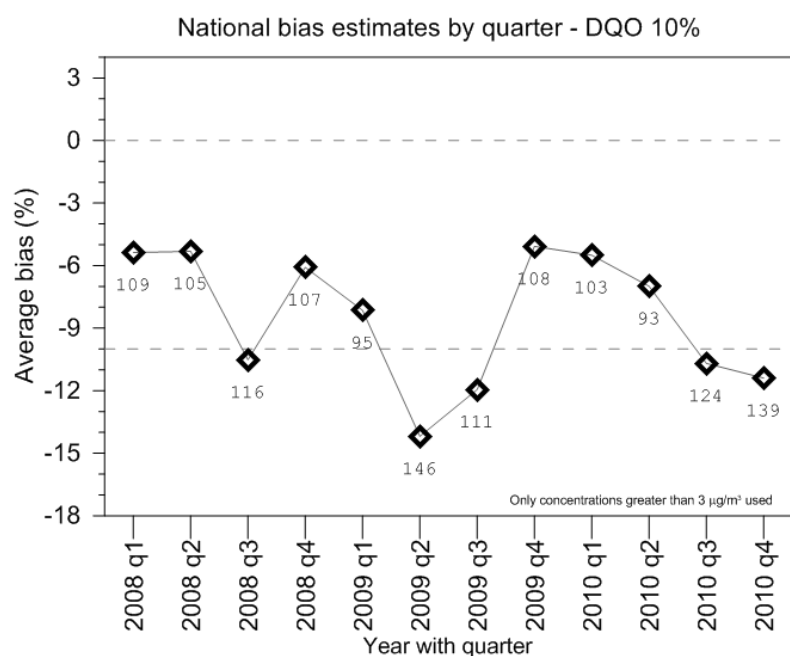


Figure 2.6. National 3-year PM_{2.5} bias estimates.

Figure 2.6 provides 3-year national bias estimates for calendar years 2008, 2009, and 2010. Specifically, the bias value denoted by each diamond represents the national mean bias estimate for each quarter of each year, as per Equation 12 in 40 CFR Part 38 Appendix A. The values listed below each quarterly data point represent the number of bias pairs from which the bias estimates were derived. It is noted that each quarterly bias estimate consists of pairs from multiple sampling methodologies, and trends may therefore be due to changes in bias, changes in the mixture of sampling methodologies, or a combination of both.

Figure 2.6 shows that quarterly national bias is between -14% and -4% and that there are several quarters in which the national bias estimate is below the DQO of -10%. For 2008-2010, the national estimate of bias is -8.9% and is based on approximately 1,300 paired values. Large biases, those greater than 50% or less than -50%, play a limited role in the national bias. Exclusion of these extreme values reduces the data set by approximately 15 values (a little more than 1% of the database) and results in a national bias estimate of -9.2% for 2008-2010.

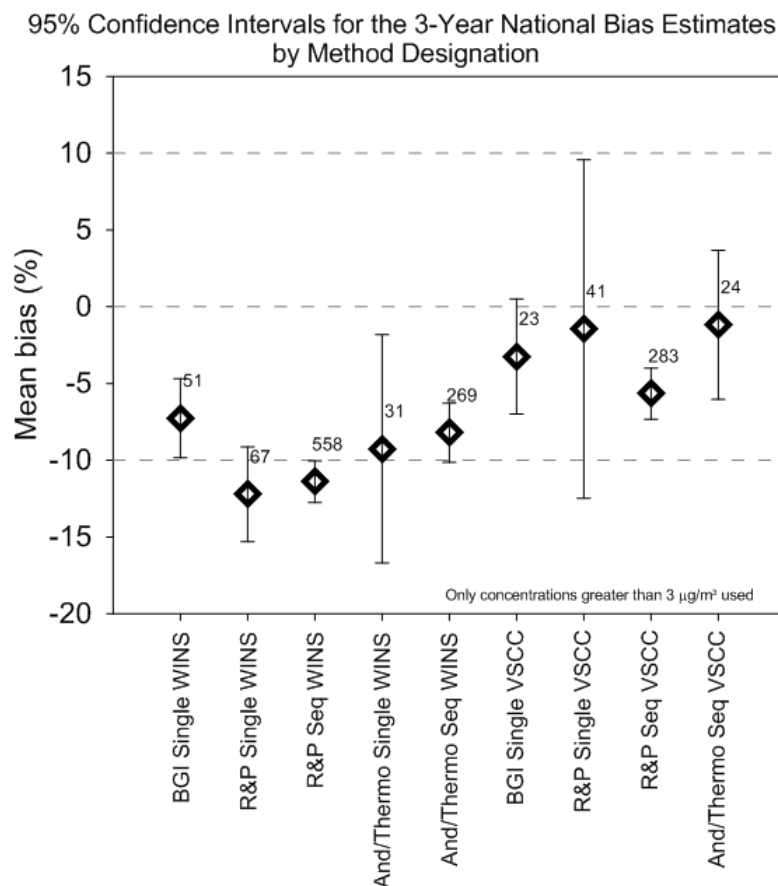


Figure 2.7. Mean and 95% confidence intervals of 3-year bias estimates by method designation.

Figure 2.7 provides mean bias estimates and 95% confidence intervals for all federal reference and equivalent methods reporting bias data during 2008-2010. This shows that all biases are negative and that they vary greatly by method, from a low of -12% for R&P single or sequential samplers with a WINS to bias close to 0 for the R&P single sampler with a VSCC and the Andersen/Thermo sequential samplers with a VSCC, although the confidence intervals for these methods' bias estimate is wide due to the small sample size.

Figure 2.7 also shows that the biases for samplers operating with a WINS have different biases than samplers operating with a VSCC. In fact, this difference is statistically significant, with biases for WINS being more negative than biases for VSCC.

Figure 2.8 provides further temporal detail for the three most commonly used methods by showing bias estimates for each quarter from 1999 to 2010. This figure shows that the samplers with the WINS had fairly stable quarterly biases from early 2000 until approximately the beginning of 2007 and then bias began to trend downward. For the R&P sequential with a VSCC, bias seems to have been generally trending down since 2004. Preliminary bias information suggests the downward trend did not continue into 2011, although that needs to be confirmed and checked with bias data from 2012.

Currently, the cause for the trend towards more negative biases is unknown. Given that the trend is being seen in all seasons, for all sampler types with sufficient data, and in all parts of the country, the underlying cause is not obvious.

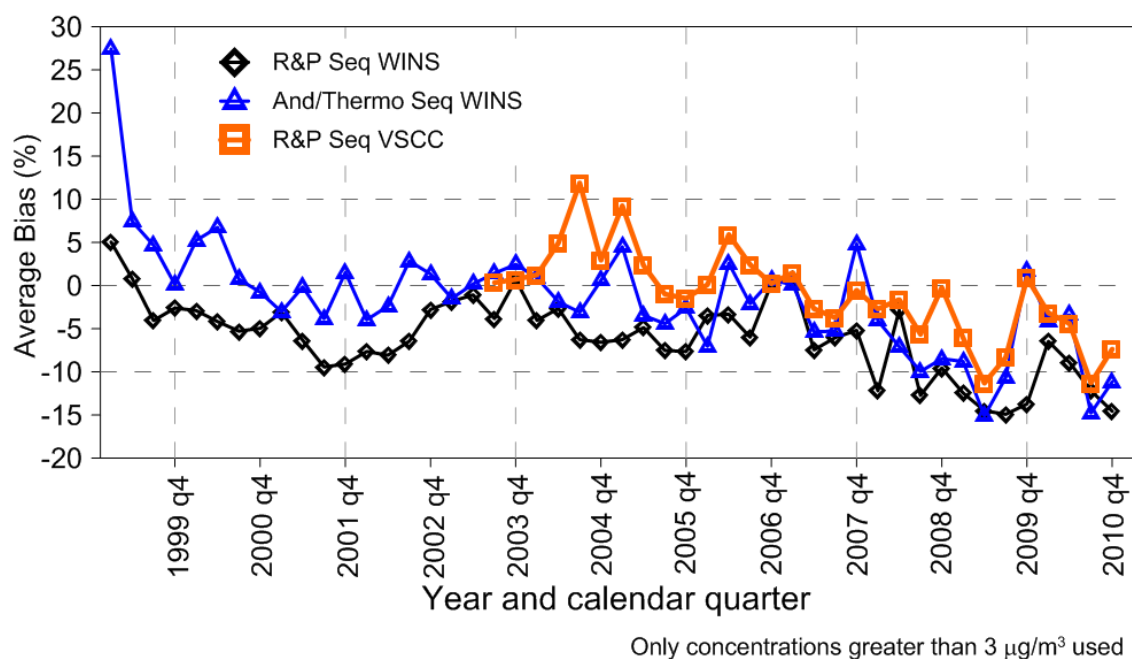


Figure 2.8. National 12-year bias estimates by major method designation.

State/PQAO Bias

As with the precision DQO, the bias DQO is established using three years of data aggregated at the PQAO level. Attachment 5 provides 3-year bias estimates for each PQAO. Of the 87 PQAOs that had valid PEP/routine audit pairs, there were 38 PQAOs that exceeded the $\pm 10\%$ DQO. Two of these PQAOs had large positive biases and 36 had large negative biases. There were also 2 PQAOs with no pairs from which bias could be calculated, as shown in Table 2. Based on the previous QA Reports, the data show a consistent trend in bias towards more negative values and in the number of PQAOs not achieving the $\pm 10\%$ bias DQO, as shown in Tables 2-6 and 2-7 later in this section.

Conclusions

In order to provide a better temporal perspective of the PM_{2.5} quality system, the following three tables compare completeness, data quality indicators, and percentage of PQAOs meeting DQOs for all 3-year QA Reports (1999-2001, 2002-2004, 2005-2007, and 2008-2010).

Data Completeness – Table 2-5 indicates that routine data completeness has improved over the 12-year period, and in general the DQOs for completeness for precision, accuracy, and bias continue to be met at national levels. However, completeness for bias has been slowly but consistently declining over the 12-year period, a decline that is approaching the 75% completeness goal.

Table 2.5. Data completeness 12-year summary.

Data Type	Completeness 3-Year Average			
	1999-2001	2002-2004	2005-2007	2008-2010
Routine Data	28%	64%	68%	73%
Average Capture Rate	Not calculated	92%	92%	92%
Collocation Precision	67%	90%	91%	89%
Flow Rate Accuracy	76%	83%	86%	88%
Performance Evaluations	85%	83%	81%	79%

Data Quality – Tables 2-6 and 2-7 provide assessments of the data from collocated precision, flow rate, and bias. Table 2-6 shows from a national perspective that flow rate accuracy has been consistent for all four 3-year reports, precision has been increasing slowly, and bias is becoming more negative. Table 2-7 presents the number of PQAOs meeting the acceptance criteria and shows that fewer PQAOs are meeting the precision and bias goals, as expected from the results presented in Table 2-6. Reasons for this could be attributed to:

- aging equipment and standards
- fewer data quality values, which allows a small number of high values to skew the precision and bias estimates

To date, it is unclear why bias has declined so rapidly since 2007, since all methods in all seasons have been similarly declining.

EPA will continue to watch precision and bias results, especially for the PQAOs showing higher than expected estimates. EPA produces annual precision and bias reports which are posted on AMTIC.³ The reports are generated from AQS using the AMP 255 report, which can be run frequently (e.g., quarterly) to track results. EPA will run these reports quarterly to track progress on the achievement of DQOs.

Table 2.6. 12-year precision, accuracy, and bias estimates.

Data Type	Acceptance Criteria	3-Year Estimates			
		1999-2001	2002-2004	2005-2007	2008-2010
Collocation Precision	10%	7.2%	6.9%	7.6%	7.9%
Flow Rate Accuracy	4%/5%	0.2%	0.15%	0.007%	0.048%
Performance Evaluations	± 10%	-2.0%	-2.1%	-3.0%	-8.9%

³ <http://www.epa.gov/ttn/amtic/qareport.html>

Table 2.7. Percentage of PQAOs meeting acceptance criteria.

Data Type	Acceptance Criteria	% of PQAOs Meeting Criteria			
		1999-2001	2002-2004	2005-2007	2008-2010
Collocation Precision	10%	86%	89%	81%	77%
Flow Rate Accuracy	4%/5%	99%	100%	100%	100%
Performance Evaluations	$\pm 10\%$	91%	84%	76%	57%

Attachment 1

2008-2010 PM_{2.5} SLAMS and Tribal Data Completeness by Quarter, Year, and 3-Year Period

Notes:

Estimates of quarterly completeness are based on the start date of the site. For example, if a sampler started on May 1 (31 days from the beginning of the second quarter), its completeness would be based upon the remaining 61 days in that quarter.

The use of zeros (“0”) in a quarter represent quarters when samplers were considered active in AQS. Quarters with neither a zero nor a value represent quarters where the samplers were not considered active.

A “Yes” in the field “all Q 75%” either at the annual level or 3-Year level indicates that the sampler was at least 75% complete for the year or 3-year period.

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Meta Data											2008 Completeness								2009 Completeness								2010 Completeness								3-Year Information		
State	Site	POC	Monitor begin date	Monitor end date	Last sampling date	Monitor Type (from AQS AMP-240)	MT SLAMS	MT TRIBAL MONITOR	MT NCORE	MT NON-REG	EPA REG	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	All Qtrs 75%+	Avg. Capture			
ALABAMA	010030010	1	1/1/2000		12/29/2012	SLAMS	01/01/2000,				4	118	93	60	55	70	70		118	30	90	77	72		67	118	100	100	100	100	Y	100		79			
	010270001	1	1/1/1999		12/29/2012	SLAMS	01/01/1999,				4	118	100	100	97	63	90		118	97	94	100	100	Y	98	118	93	90	97	91	Y	93		94			
	010331002	1	1/1/1999		12/29/2012	SLAMS	01/01/1999,				4	118	94	97	94	93	Y	94	118	89	91	100	64		86	118	93	100	97	87	Y	94		91			
	010550010	1	1/1/2000		12/29/2012	SLAMS	01/01/2000,				4	118	88	97	80	82	Y	87	118	84	96	97	96	Y	93	118	97	100	100	100	Y	99	Y	93			
	010690003	1	1/7/2005		12/29/2012	SLAMS	01/07/2005,				4	118	91	90	90	100	Y	93	118	82	97	100	93	Y	93	118	80	83	100	61		81		89			
	010730023	1	1/1/1999		12/29/2012	SLAMS	01/01/1999,		07/01/2010,		4	0	99	98	99	100	Y	99	0	100	96	97	99	Y	98	0	100	98	99	96	Y	98	Y	98			
	010730023	2	1/1/1999		12/29/2012	SLAMS	01/01/1999,		07/01/2010,		4	142	78	87	87	73		81	142	85	88	80	73		82	142	80	87	100	100	Y	92		85			
	010732003	1	1/1/1999		12/29/2012	SLAMS	01/01/1999,				4	0	99	98	97	100	Y	99	0	99	99	98	99	Y	99	0	100	95	99	97	Y	98	Y	99			
	010732003	2	1/1/1999		12/29/2012	SLAMS	01/01/1999,				4	142	70	87	80	67		76	142	78	82	80	73		79	142	93	93	88	100	Y	94		83			
	010735002	1	1/3/1999	12/31/2011	12/29/2011	SLAMS	01/03/1999,12/31/2011				4	142	96	100	97	97	Y	97	142	100	100	93	100	Y	98	0	100	100	100	100	Y	100	Y	98			
	010735002	2	1/3/1999	12/31/2011	12/29/2011	SLAMS	01/03/1999,12/31/2011				4	142	58	73	47	47		56	142	73	70	67	67		69	142	87	100	100	100	Y	97		74			
	010890014	1	1/1/1999		12/29/2012	SLAMS	01/01/1999,				4	0	98	86	100	99	Y	96	145	100	100	100	100	Y	100	145	100	93	100	100	Y	98	Y	98			
	010970003	1	7/19/2002		12/29/2012	SLAMS	07/19/2002,				4	118	97	93	78	90	Y	90	118	77	97	90	97	Y	90	118	97	80	80	94	Y	88	Y	89			
	011010007	1	1/1/1999	1/15/2009	1/15/2009	SLAMS	01/01/1999,01/15/2009				4	118	76	93	92	90	Y	88	118	60					60												
	011011002	1	1/16/2009		12/29/2012	SLAMS	01/16/2009,				4								118	74	56	97	94		80	118	93	83	80	87	Y	86		83			
	011030011	1	8/7/2001		12/29/2012	SLAMS	08/07/2001,				4	118	100	93	97	97	Y	97	118	97	97	97	100	Y	98	118	100	100	100	100	Y	100	Y	98			
	011130001	1	1/1/1999		12/29/2012	SLAMS	01/01/1999,				4	118	86	93	96	70		86	118	94	80	97	62		83	118	90	100	100	100	Y	97		89			
	011170006	1	1/1/1999		12/29/2012	SLAMS	01/01/1999,				4	118	97	100	94	97	Y	97	118	100	90	97	97	Y	96	118	100	97	48	100		86		93			
	011210002	1	1/1/1999		12/29/2012	SLAMS	01/01/1999,				4	118	100	97	94	60		88	118	90	36	100	94		80	118	97	90	97	100	Y	96		88			
	011250004	1	10/1/2002		12/29/2012	SLAMS	10/01/2002,				4	118	79	90	90	73		83	118	96	87	90	94	Y	92	118	100	100	100	100	Y	100		92			
	011270002	1	1/1/1999	12/1/2011	11/29/2011	SLAMS	01/01/1999,12/01/2011				4	118	100	100	93	100	Y	98	118	100	91	97	100	Y	97	118	100	97	97	77	Y	93	Y	96			
ALASKA	020200018	1	11/10/1998	6/30/2011	6/26/2011	SLAMS	11/10/1998,				10	117	94	100	100	87	Y	95	117	88	82	87	80	Y	84	117	87	87	81	93	Y	87	Y	89			
	020200018	2	11/10/1998	10/10/2008	10/9/2008	SLAMS	11/10/1998,				10	117	11	47	67	100		47																			
	020200018	3	1/1/2009		9/30/2012	PECIAL PURPOS	01/01/2012,				10								170	99	100	94	99	Y	98	170	100	99	95	100	Y	98		98			
	020201004	3	1/1/2009		9/30/2012	PECIAL PURPOS	01/01/2012,				10								170	100	99	93	99	Y	98	170	97	75	94	100	Y	91		95			
	020900010	1	10/23/1998		12/29/2012	SLAMS	10/23/1998,				10	117	87	100	100	100	Y	97	117	97	94	100	97	Y	97	117	90	90	100	100	Y	95	Y	96			
	020900010	2	10/23/1998		12/29/2012	SLAMS	10/23/1998,				10	117	67	100	100	87		88	117	100	88	100	87	Y	94	117	93	87	93	100	Y	93		92			
	021100004	1	11/19/1998	3/31/2011	3/28/2011	PECIAL PURPOS	11/19/1998,08/20/2009				10	117	93	80	85	87	Y	86	117	88	88	57	93		81	117	100	100	100	93	Y	98		88			
	021100004	3	8/21/2009		12/31/2012	SLAMS	08/21/2009,				10								170	0	0	64	97		40	170	99	95	100	99	Y	98		69			
	021700008	1	12/19/1998		9/30/2012	SLAMS	12/19/1998,08/10/2011				10	117	100	87	87	83	Y	89	117	97	93	87	12		72	117	60	97	90	84		83		81			
ARIZONA	040011235	1	11/1/1986		7/26/2011	RIBAL MONITORS		11/01/1986,			9	117	0	20	40	73		33	117	93	93	80	100	Y	92	117	100	100	93	100	Y	98		74			
	040011235	2	11/1/1986		7/26/2011	RIBAL MONITORS		11/01/1986,			9	117	0	27	67	47		35	117	94	94	80	100	Y	92	117	93	73	82	93		86		71			
	040031005	1	1/12/1999		6/26/2012	SLAMS	01/12/1999,				9	143	94	93	87	80	Y	89	143	86	100	100	100	Y	97	143	93	100	93	100	Y	97	Y	94			
	040051008	1	1/6/1999		6/26/2012	SLAMS	01/06/1999,				9	143	94	100	97	100	Y	90	143	94	100	100	100	Y	99	143	100	100	100	100	Y	99		96			
	040130019	1	6/13/2000		11/29/2012	SLAMS	01/01/2004,				9	145	100	100	93	100	Y	98	145	100	90	100	100	Y	98	145	97	100	100	100	Y	99	Y	98			
	040130019	2	1/1/2004		11/29/2012	SLAMS	01/01/2004,				9	145	89	100	100	100	Y	97	145	100	100	100	100	Y	100	145	89	100	100	83	Y	93	Y	97			
	040130019	3	5/1/2010		11/30/2012	SLAMS	05/01/2010,				9								181	0	57	98	98		63	181	0	57	98	98		63					

Meta Data										2008 Completeness										2009 Completeness										2010 Completeness										3-Year Information		
State	Site	POC	Monitor begin date	Monitor end date	Last sampling date	Monitor Type (from AQS AMP-240)	MT SLAMS	MT TRIBAL MONITOR	MT NCORE	MT NON-REG	EPA REG	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	All Qtrs 75%+	Avg. Capture								
	060190008	2	1/6/1999	1/31/2012	1/31/2012	SLAMS	01/06/1999,01/31/2012		07/01/2010,01/31/2012		9	118	100	93	100	100	Y	98	118	100	100	100	93	Y	98	118	100	93	100	100	Y	98	118	100	93	100	100	Y	98	Y	98	
	060195001	1	1/1/1999	9/28/2009	9/10/2009	SLAMS	01/01/1999,09/28/2009				9	120	80	93	87	100	Y	90	120	97	100	80		92	120	97	100	100	80		92	118	100	93	100	100	Y	98	Y	91		
	060195025	1	1/1/2000		6/26/2012	SLAMS	01/01/2000,				9	120	90	93	100	100	Y	96	120	100	100	100	88	Y	97	120	87	93	88	87	Y	89	120	87	93	88	87	Y	89	Y	94	
	060231002	1	1/1/1999		11/29/2012	SLAMS	01/01/1999,				9	117	78	100	100	83	Y	90	117	97	93	100	100	Y	98	117	97	100	100	94	Y	98	117	97	100	100	94	Y	98	Y	95	
	060250005	1	1/1/1999		12/29/2012	SLAMS	01/01/1999,				9	118	68	97	97	40		75	118	0	13	93	97		51	118	93	80	97	97	Y	92	118	93	80	97	97	Y	92	73		
	060250005	2	1/1/1999		12/29/2012	SLAMS	01/01/1999,				9	0	0	0	0	0		0	118	0	31	0	0		8	118	87	93	100	100	Y	95	118	87	93	100	100	Y	95	34		
	060250007	1	12/15/2003		12/29/2012	SLAMS	12/15/2003,				9	118	91	93	100	93	Y	94	118	49	100	97	100		87	118	93	93	93	65		86	118	93	93	93	65		86	89		
	060251003	1	1/1/1999		12/29/2012	SLAMS	01/01/1999,				9	118	74	100	90	90		89	118	100	100	100	97	Y	99	118	100	93	97	87	Y	94	118	100	93	97	87	Y	94	94		
	060271003	1	9/1/1998		9/30/2012	SLAMS	09/01/1998,				9	118	94	100	100	90	Y	96	118	80	97	97	81	Y	89	0	90	100	100	71		90	92	118	80	97	97	81	Y	89	92	
	060271003	2	1/1/1999		9/30/2012	SLAMS	01/01/1999,				9	118	100	100	100	78	Y	94	118	72	61	83	50		67	0	56	100	100	56		78	80	118	72	61	83	50		67	80	
	060271003	3	9/10/2009		12/31/2012	SLAMS	09/10/2009,				9	181	0	0	0	0			181	0	0	32	99		33	181	99	99	99	98	Y	99	66	181	99	99	99	98	Y	99	66	
	060290010	1	1/1/1999	10/12/2009	10/10/2009	SLAMS	01/01/1999,				9	120	85	87	47	93		78	120	90	88	100	100	Y	93	120	90	88	100	100		93	86	120	90	88	100	100		93	86	
	060290010	3	8/27/2006	1/31/2010	1/5/2010	SLAMS	08/27/2006,01/31/2010				9	0	0	0	0	0		0	170	0	28	95	94		54	170	14					14	23	170	14				14	23		
	060290011	1	1/1/1999		6/26/2012	SLAMS	01/01/1999,				9	118	48	40	42	50		45	118	43	52	43	45		46	118	43	47	48	35		43	45	118	43	47	48	35		43	45	
	060290014	1	1/1/1999		12/31/2012	SLAMS	01/01/1999,				9	118	76	91	90	82	Y	85	118	80	83	99	94	Y	89	120	83	88	90	91	Y	88	118	80	83	88	90	91	Y	88	87	
	060290014	2	1/1/1999		12/29/2012	SLAMS	01/01/1999,				9	118	94	87	100	100	Y	95	118	100	93	93	100	Y	97	120	93	60	100	100		88	118	94	87	100	100		88	93		
	060290015	1	6/1/1999		12/29/2012	SLAMS	06/01/1999,				9	118	51	50	45	43		47	118	46	52	50	48		49	118	43	47	48	48		47	118	43	47	48	48		47	48		
	060290016	1	2/18/2000		6/29/2012	SLAMS	02/18/2000,				9	118	72	73	93	70		77	118	90	100	97	97	Y	96	120	73	97	87	74		83	118	72	73	93	70		77	85		
	060310004	1	1/1/1999	12/16/2010	12/16/2010	SLAMS	01/01/1999,				9	120	85	93	93	97	Y	92	120	93	88	100	93	Y	93	120	97	100	100	88	Y	96	Y	94	120	97	100	100	88	Y	96	
	06031004	3	1/1/2010		8/31/2012	SLAMS	01/01/2010,				9	0	0	0	0	0			120	93	88	100	93	Y	93	120	97	100	100	88	Y	96	Y	94	120	97	100	100	88	Y	96	
	060330001	1	1/1/1999		9/30/2012	SLAMS	01/01/1999,				9	117	100	100	100	87	Y	97	117	100	100	100	100	Y	100	117	100	93	100	100	Y	98	117	100	93	100	100	Y	98	Y	98	
	060370002	1	1/1/1999		6/29/2012	SLAMS	01/01/1999,				9	120	79	96	94	83	Y	88	120	72	85	100	85		86	120	67	90	73		76	120	67	90	73		76	83				
	060371002	1	1/1/1999		6/30/2012	SLAMS	01/01/1999,				9	120	94	97	90	97	Y	94	120	93	73	90	77		83	120	93	79	86	95	Y	88	120	93	79	86	95	Y	88	88		
	060371002	3	1/1/2008		6/30/2012	PECLAL PURPOS	01/01/2008,12/31/2008		01/01/2008,07/31/20		9	0	0	0	0	0		0	170	87	100	100	99	Y	97	170	98	99	99	100	Y	99	65	170	98	99	99	100	Y	99	65	
	060371103	1	1/1/1999		6/30/2012	SLAMS	01/01/1999,		07/01/2010,		9	120	50	99	97	80		81	120	100	93	82	100	Y	94	120	92	72	90	89		86	87	120	92	72	90	89		86	87	
	060371103	2	1/1/1999		6/26/2012	SLAMS	01/01/1999,				9	120	89	87	100	93	Y	92	120	100	93	100	100	Y	98	120	100	100	100	93	Y	98	Y	96	120	100	100	100	93	Y	98	96
	060371103	3	1/1/2008	9/30/2011	9/30/2011	PECLAL PURPOS	01/01/2008,12/31/2008		07/01/2010,09/30/20	1/01/2008,07/31/20	9	0	0	0	0	0		0	170	98	98	98	96	Y	97	170	86	100	94	99	Y	95	64	170	86	100	94	99	Y	95	64	
	060371201	1	1/1/1999		6/29/2012	SLAMS	01/01/1999,				9	120	97	90	94	90	Y	93	120	97	93	83	87	Y	90	120	80	73	90	84		82	88	120	80	73	90	84		82	88	
	060371301	1	1/1/1999	12/2/2008	10/30/2008	SLAMS	01/01/1999,12/02/2008				9	120	96	97	97	30		80	120	96	97	97	30		80	120	96	97	97	30		80	80	120	96	97	97	30		80	80	
	060371302	1	11/2/2008		6/29/2012	SLAMS	11/02/2008,				9	120	0	0	0	10		3	120	94	93	93	94	Y	94	120	90	90	97	87	Y	91	63	120	90	90	97	87	Y	91	63	
	0																																									

Meta Data											2008 Completeness								2009 Completeness								2010 Completeness								3-Year Information		
State	Site	POC	Monitor begin date	Monitor end date	Last sampling date	Monitor Type (from AQS AMP-240)	MT SLAMS	MT TRIBAL MONITOR	MT NCORE	MT NON-REG	EPA REG	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	All Qtrs 75%+	Avg. Capture			
ALABAMA	060731011	2	5/26/2004		12/29/2012	RIBAL MONITORS		05/26/2004,			9	117	31	33	0	0	16		117	0	0	33	33		17	117	33	53	28	0		29			21		
	060731201	1	8/19/2005		12/31/2012	RIBAL MONITORS		08/19/2005,			9	170	0	0	0	70	18		170	100	100	99	100	Y	100	170	100	100	89	99	Y	97			72		
	060750005	1	1/1/1999	9/30/2009	9/28/2009	SLAMS	01/01/1999,09/30/2009				9	0	98	100	100	83	Y	95	145	97	100	93			97											96	
	060750005	3	10/1/2009		12/31/2012	SLAMS	10/01/2009,				9								170	0	0	0	99		25	170	94	99	96	99	Y	97			61		
	060771002	1	1/3/1999	6/30/2010	6/28/2010	SLAMS	01/03/1999,06/30/2010				9	118	97	97	93	100	Y	97	118	97	93	93	90	Y	93	118	90	97								94	
	060771002	3	5/1/2010		6/30/2012	SLAMS	05/1/2010,				9															170	0	66	94	99						65	
	060772010	3	11/16/2010		11/30/2012	SLAMS	11/16/2010,				9															170	0	0	0	49					12		
	060792004	1	7/1/2009		12/31/2012	SLAMS	07/01/2009,				9								170	0	0	99	99		50	170	99	99	95	99	Y	98			74		
	060792006	1	9/21/2005	3/28/2011	3/28/2011	SLAMS	09/21/2005,03/28/2011				9	120	67	100	100	93		90	120	100	100	100	100	Y	100	117	93	93	100	100	Y	97			96		
	060792007	1	8/1/2010		12/31/2012	SLAMS	08/01/2010,				9															170	0	0	37	99					34		
	060798001	1	1/1/1999	3/27/2010	3/27/2010	SLAMS	01/01/1999,03/27/2010				9	117	75	93	100	100	Y	92	117	100	87	100	93	Y	95	117	93									93	
	060798001	2	1/1/1999	3/27/2010	3/27/2010	SLAMS	01/01/1999,03/27/2010				9	117	86	93	93	87	Y	90	117	93	93	100	93	Y	95	117	100									100	
	060798001	3	6/1/2009		12/31/2012	SLAMS	06/01/2009,				9								170	0	33	98	97		57	170	70	87	83	95					84		
	060811001	1	1/1/1999	9/30/2009	9/28/2009	SLAMS	01/01/1999,09/30/2009				9	0	100	100	100	93	Y	98	145	84	100	100			95											97	
	060811001	3	10/1/2009		12/31/2012	SLAMS	10/01/2009,				9								170	0	0	0	99		25	170	99	93	99	95	Y	96			61		
	060830011	1	5/1/2002	6/25/2010	6/25/2010	SLAMS	05/01/2002,06/25/2010				9	117	100	93	93	100	Y	97	117	86	88	87	60		80	117	100	93								91	
	060830011	3	6/25/2010		8/31/2012	SLAMS	06/25/2010,				9															170	0	31	90	99						55	
	060831008	1	4/12/1999	6/25/2010	6/25/2010	SLAMS	04/12/1999,06/25/2010				9	117	86	93	93	87	Y	90	117	83	100	93	100	Y	94	117	93	100									94
	060831008	3	5/23/2010		8/31/2012	SLAMS	05/23/2010,				9															170	0	5	99	100						51	
	060850002	1	3/1/2007	10/30/2009	10/28/2009	SLAMS	03/01/2007,10/30/2009				9	0	100	100	100	97	Y	99	145	100	100	100	100	Y	100											100	
	060850002	3	10/31/2009		12/31/2012	SLAMS	10/31/2009,				9								170	0	0	0	99		25	170	98	97	91	95	Y	96			61		
	060850005	1	10/5/2002		11/29/2012	SLAMS	10/05/2002,		07/01/2010,		9	0	100	100	100	98	Y	100	145	96	100	93	99	Y	97	145	94	100	93	99	Y	97			98		
	060870007	1	1/1/1999	12/31/2009	12/27/2009	SLAMS	01/01/1999,12/31/2009				9	117	100	100	100	100	Y	100	117	100	100	100	100	Y	100											100	
	060870007	3	1/1/2010		9/30/2012	SLAMS	01/01/2010,				9															170	98	89	98	96	Y	95			95		
	060890004	1	12/19/1998		12/29/2012	SLAMS	12/19/1998,				9	117	94	100	100	100	Y	99	117	100	94	100	100	Y	99	117	100	80	88	100	Y	92			97		
	060932001	1	5/1/2005		12/29/2012	SLAMS	08/21/2008,				9	117	0	0	67	100		42	117	100	94	100	93	Y	97	117	100	100	67	93					76		
	060950004	1	1/1/1999	2/28/2011	2/28/2011	SLAMS	01/01/1999,02/28/2011				9	0	89	100	100	100	Y	97	145	99	93	100	86	Y	95	145	84	87	100	87	Y	89			94		
	060970003	1	1/1/1999	10/22/2009	10/22/2009	SLAMS	01/01/1999,10/22/2009				9	0	97	100	100	100	Y	99	145	100	94	100	63		95											97	
	060970003	3	10/23/2009		12/31/2012	SLAMS	10/23/2009,				9								170	0	0	0	99		25	170	98	99	98	99	Y	98			62		
	060990005	1	1/3/1999		12/23/2012	SLAMS	01/03/1999,				9	118	100	100	97	100	Y	99	118	96	100	97	97	Y	97	118	97	100	100	100	Y	99			98		
	060990005	3	5/1/2010		6/30/2012	SLAMS	05/01/2010,				9															170	0	64	87	95						62	
	060990006	3	11/19/2008		8/31/2012	SLAMS	11/19/2008,				9	170	0	0	0	64		16	170	99	99	96	99	Y	98	170	99	93	74	99					91		
	061010003	1	12/19/1998		12/31/2012	SLAMS	12/19/1998,				9	118	80	97	90	85	Y	88	118	92	99	91	97	Y	95	118	77	93	89	96	Y	89			91		
	061030006	3	1/1/2009		3/31/2012	SLAMS	01/01/2009,				9									0	0	0	0			170	0	30	63	93						23	
	061072002	1	1/3/1999		12/29/2012	SLAMS	01/03/1999,				9	118	94	97	100	100	Y	98	118	100	97	97	100	Y	98	118	100	100	93	100	Y	98			98		
	061110007	1	1/1/1999		12/29/2012	SLAMS	01/01/1999,				9	0	100	100	100	93	Y	98	118	92	100	100	100	Y	98	118	100	100	100	100	Y	100			99		
	061110007	2	1/1/1999		2/15/2012	SLAMS	01/01/1999,				9	0	100	93	100	100	Y	98	118	100	93	100	100	Y	98	118	100	100	100	100	Y	100			99		
	061110009	1	1/31/2000	1/31/2012	1/28/2012	SLAMS	11/01/2000,01/31/2012				9	0	94	100	93	100	Y	97	118	100	94	100	100	Y	99	118	93	100	100	93	Y	97			98		
	061112002	1	1/1/1999		12/29/2012	SLAMS	01/01/1999,				9	0	100	97	97	97	Y	98	118	100	100	100															

Meta Data											2008 Completeness								2009 Completeness								2010 Completeness								3-Year Information	
State	Site	POC	Monitor begin date	Monitor end date	Last sampling date	Monitor Type (from AQS AMP-240)	MT SLAMS	MT TRIBAL MONITOR	MT NCOE	MT NON-REG	EPA REG	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	All Qtrs 75%+	Avg. Capture		
FLORIDA	110010043	1	1/1/1999		12/31/2012	SLAMS	01/01/1999,				3	120	96	92	97	91	Y	94	120	92	97	99	95	Y	96	0	85	98	94	91	Y	92	0	Y	94	
	110010043	4	1/1/1999		10/31/2012	SLAMS	01/01/1999,		01/01/2011,		3	0	0	0	0	0		0	118	0	0	0	0		0	0	0	0	0	0	0	0	0	0		
	120010023	1	1/6/1999		12/29/2012	SLAMS	01/06/1999,				4	118	100	100	90	97	Y	97	118	87	100	100	97	Y	96	118	100	100	100	100	Y	100	Y	98		
	120010023	2	1/6/1999		12/23/2012	SLAMS	01/06/1999,				4	118	100	100	83	61		86	118	100	100	72	100		93	118	89	89	100	100	Y	95		91		
	120010024	1	9/5/1999	9/30/2010	9/29/2010	SLAMS	01/01/2000,09/30/2010				4	118	100	97	100	90	Y	97	118	100	93	80	100	Y	93	118	97	100	80				92		94	
	120051004	1	5/4/2001	11/30/2009	11/30/2009	SLAMS	05/04/2001,11/30/2009				4	118	100	87	100	100	Y	97	118	100	100	100	95	Y	99										98	
	120090007	1	3/1/2000		12/29/2012	SLAMS	03/01/2000,				4	118	93	97	94	97	Y	95	118	97	77	97	77	Y	87	118	93	93	97	75	Y	90	Y	91		
	120111002	1	1/1/1999		9/30/2012	SLAMS	01/01/1999,				4	118	100	100	89	100	Y	97	118	100	98	97	92	Y	97	118	97	100	96	100	Y	98	Y	97		
	120111002	2	1/1/1999		9/30/2012	SLAMS	01/01/1999,				4	118	94	80	67	93		84	118	56	69	93	93		78	118	93	100	94	93	Y	95		86		
	120112003	1	7/9/2010		9/30/2012	SLAMS	07/09/2010,				4																118	0	0	97	94		48		48	
	120112004	1	4/1/1999	6/30/2009	6/30/2009	SLAMS	04/01/1999,06/30/2009				4	118	94	93	89	91	Y	92	118	87	65				76									84		
	120113002	1	4/3/1999	3/31/2009	3/29/2009	SLAMS	04/03/1999,03/31/2009				4	118	100	90	81	90	Y	90	118	87					87									89		
	120115005	1	9/30/2009		9/30/2012	SLAMS	09/30/2009,				4								118	0	0	0	95		24	118	99	75	86	100	Y	90		57		
	120170005	1	2/5/1999		6/29/2012	SLAMS	02/05/1999,06/30/2010				4	118	85	80	94	90	Y	87	118	100	97	80	84	Y	90	118	93	100	94	90	Y	94	Y	90		
	120170005	2	2/5/1999		6/26/2012	SLAMS	02/05/1999,06/30/2010				4	118	100	100	100	89	Y	97	118	100	89	67	78		83	118	100	100	100	83	Y	96		92		
	120310098	1	6/1/1999		7/31/2012	SLAMS	06/01/1999,				4	118	100	85	96	99	Y	95	118	91	99	99	100	Y	97	118	99	99	99	96	Y	98	Y	97		
	120310099	1	6/1/1999		6/30/2012	SLAMS	06/01/1999,				4	118	91	90	96	99	Y	94	118	99	98	93	100	Y	98	118	95	74	91	100	90		94			
	120310099	2	6/1/1999		6/26/2012	SLAMS	06/01/1999,				4	118	100	100	89	100	Y	97	118	100	89	100	100	Y	97	118	100	89	89	100	Y	95	Y	96		
	120330004	1	1/3/1999		12/29/2012	SLAMS	01/03/1999,				4	118	97	93	100	100	Y	98	118	100	100	100	100	Y	100	118	100	100	100	100	Y	100	Y	99		
	120330004	2	1/3/1999		12/23/2012	SLAMS	01/03/1999,				4	118	89	100	100	100	Y	97	118	100	100	100	100	Y	100	118	100	100	100	100	Y	100	Y	99		
	120570030	1	1/1/1999	1/20/2010	1/20/2010	SLAMS	01/01/1999,01/20/2010				4	118	93	96	97	96	Y	95	118	100	93	100	90	Y	96	118	95	98	99	99	99	95		95		
	120570030	2	1/1/1999	1/20/2010	1/20/2010	SLAMS	01/01/1999,01/20/2010				4	118	92	93	93	87	Y	91	118	100	93	93	87	Y	93	118	25					25		70		
	120573002	1	1/1/2004		10/31/2012	OTHER			07/01/2010,			4	118	97	98	98	99	Y	98	118	96	97	99	96	Y	97	118	98	100	92	96	Y	97	Y	97	
	120573002	2	1/26/2010		10/30/2012	ROPOSED NCOE	01/01/2011,		07/01/2010,			4														118	100	93	70	80		86		86		
	120710005	1	1/1/1999		12/29/2012	SLAMS	01/01/1999,				4	118	76	100	97	100	Y	93	118	87	97	100	87	Y	93	118	100	100	100	94	Y	98	Y	95		
	120710005	2	1/21/1999		12/23/2012	SLAMS	01/21/1999,				4	118	67	100	61	72		75	118	78	100	100	78	Y	89	118	83	72	100	100		89		84		
	120730012	1	1/1/1999		12/29/2012	SLAMS	01/01/1999,				4	118	94	87	88	97	Y	91	118	96	100	100	97	Y	98	118	100	100	100	100	Y	100	Y	96		
120730012	2	10/1/2004		12/29/2012	SLAMS	10/01/2004,				4	118	89	78	72	83		81	118	89	89	100	100	Y	95	118	100	100	100	83	Y	96		91			
120814012	1	1/1/1999	1/16/2008	12/29/2007	SLAMS	01/01/1999,01/16/2008				4	0						0																	0		
120860033	1	5/4/2005		9/30/2012	SLAMS	05/04/2005,				4	118	85	97	100	87	Y	92	118	93	100	83	93	Y	92	118	87	53	81	97		80		88			
120861016	1	2/4/1999		9/30/2012	SLAMS	02/04/1999,				4	118	92	91	86	95	Y	91	118	93	96	99	100	Y	97	118	99	100	100	100	Y	100	Y	96			
120861016	2	2/4/1999		9/30/2012	SLAMS	02/04/1999,				4	118	86	87	80	100	Y	88	118	86	93	100	100	Y	95	118	100	100	100	100	Y	100	Y	94			
120866001	1	1/27/1999		9/30/2012	SLAMS	01/27/1999,				4	118	83	96	92	99	Y	93	118	98	100	100	99	Y	99	118	99	100	100	100	Y	100	Y	97			
120951004	1	1/1/1999	12/31/2011	12/31/2011	SLAMS	01/01/1999,12/31/2011				4	118	92	99	100	99	Y	98	118	100	83	98	97	Y	95	118	100	99	93	99	Y	98	Y	97			
120952002	1	1/1/1999		9/30/2012	SLAMS	01/01/1999,				4	118	100	98	93	99	Y	98	118	98	100	99	99	Y	99	118	99	96	89	98	Y	95	Y	97			
120952002	2	1/1/1999		9/30/2012	SLAMS	01/01/1999,				4	118	89	89	56	100		83	118	100	100	100	100	Y	100	118	100	100	100	83	Y	96		93			
120990009	1	12/4/1999		9/30/2012	SLAMS	12/04/1999,				4	118	96	97	95	100	Y	97	118	99	97	98	88	Y	96	118	95	98	99	99	99	Y	98	Y	97		
120990009	2	12/17/2008		9/30/2012	SLAMS	12/17/2008,				4	118	0	0	0	33		8	118	100	100	100	56		89	118	83	100	10								

Meta Data											2008 Completeness								2009 Completeness								2010 Completeness								3-Year Information	
State	Site	POC	Monitor begin date	Monitor end date	Last sampling date	Monitor Type (from AQS AMP-240)	MT SLAMS	MT TRIBAL MONITOR	MT NCORE	MT NON-REG	EPA REG	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	All Qtrs 75%+	Avg. Capture		
IOWA	180970081	1	1/22/1999		1/31/2013	SLAMS	01/22/1999,				5	145	98	98	98	98	Y	98	145	99	88	92	88	Y	92	145	100	100	84	100	Y	96	Y	96	95	
	180970081	2	2/11/1999		1/28/2013	SLAMS	02/11/1999,				5	118	100	100	100	93	Y	98	0	86	100	100	93	Y	95	145	87	100	93	100	Y	95	Y	96	96	
	180970083	1	1/22/1999		1/31/2013	SLAMS	01/22/1999,				5	118	100	87	93	97	Y	94	0	96	81	97	93	Y	92	145	93	97	100	94	Y	96	Y	94	94	
	180970084	1	2/15/2009		1/31/2013	SLAMS	02/15/2009,				5								145	60	78	100	87		81	145	97	97	97	97	Y	97		97	89	
	181050003	1	4/1/2009		1/31/2013	SLAMS	04/01/2009,				5								0	0	85	100	100		71	145	93	97	97	72		90		97	81	
	181270024	1	1/27/1999		1/31/2013	SLAMS	01/27/1999,				5	118	87	93	94	100	Y	94	0	94	94	97	84	Y	92	145	80	97	97	94	Y	92	Y	98	93	
	181410014	1	11/20/1999	12/31/2009	12/30/2009	SLAMS	11/20/1999,12/31/2009				5	145	93	100	100	100	Y	98	145	88	100	100	100	Y	97										98	
	181410015	1	6/1/2006		1/31/2013	SLAMS	06/01/2006,				5	0	94	93	97	100	Y	96	145	96	97	93	78	Y	91	145	100	100	100	100	Y	100	Y	96	90	
	181410015	2	6/1/2006		1/28/2013	SLAMS	06/01/2006,				5	0	100	87	100	87	Y	93	145	94	87	93	87	Y	90	145	87	80	100	87	Y	88	Y	90	90	
	181470009	1	2/1/2000		1/31/2013	SLAMS	02/01/2000,				5	118	100	97	78	93	Y	92	0	93	77	97	97	Y	91	145	97	97	97	91	Y	95	Y	93	93	
	181570008	1	10/1/2002		1/31/2013	SLAMS	10/01/2002,				5	145	93	92	94	92	Y	93	145	84	80	87	100	Y	88	145	93	93	100	69		89		90	90	
	181570008	2	10/1/2002		1/28/2013	SLAMS	10/01/2002,				5	145	100	80	87	80	Y	87	145	100	87	80	93	Y	90	145	87	80	87	87	Y	85	Y	87	87	
	181630006	1	4/15/1999	3/8/2009	3/8/2009	SLAMS	04/15/1999,03/08/2009				5	118	93	90	90	90	Y	91	118	96					96										94	
	181630006	2	4/15/1999	3/9/2009	3/8/2009	SLAMS	04/15/1999,03/09/2009				5	118	75	87	87	100	Y	87	118	100				100												94
	181630012	1	4/15/1999	6/30/2009	6/30/2009	SLAMS	04/15/1999,06/30/2009				5	118	100	93	75	67		84	118	91	93			92												88
	181630016	1	6/5/1999		1/31/2013	SLAMS	06/05/1999,				5	118	84	80	81	97	Y	86	0	90	94	100	85	Y	92	145	100	100	93	97	Y	98	Y	92	92	
	181630020	1	3/10/2009	3/31/2011	3/22/2011	SLAMS	03/10/2009,03/31/2011				5								0	33	100	90	97		80	145	90	90	100	97	Y	94		87	87	
	181630020	2	3/10/2009	3/31/2011	3/22/2011	SLAMS	03/10/2009,03/31/2011				5								0	33	94	100	93		80	145	87	100	100	100	100	Y	97		89	89
	181630021	1	7/8/2009		1/31/2013	SLAMS	07/08/2009,				5								145	0	0	97	100		49	145	100	100	100	100	97	Y	99	Y	94	94
	181670018	1	3/19/1999		1/31/2013	SLAMS	03/19/1999,				5	118	94	100	78	97	Y	92	0	78	77	90	93	Y	85	145	100	97	100	100	Y	99	Y	92	93	
	181670023	1	12/6/1999	12/31/2010	12/31/2010	SLAMS	12/06/1999,12/31/2010				5	145	91	63	83	99		84	145	90	100	97	100	Y	97	145	100	97	100	94	Y	98		93	68	
	181830003	1	4/7/2010		1/31/2013	SLAMS	04/07/2010,				5																145	0	93	87	93		68			68
KANSAS	190130008	1	1/15/1999	12/31/2011	12/29/2011	SLAMS	01/15/1999,12/31/2011				7	145	97	100	90	100	Y	97	145	100	100	93	100	Y	98	145	90	100	100	100	Y	98	Y	98	98	
	190130009	1	1/1/2009		12/29/2012	PECIAL PURPOSE	01/01/2012,				7								145	93	100	100	97	Y	97	145	97	100	100	100	Y	99		98	98	
	191030001	1	1/27/1999		12/31/2012	SLAMS	01/27/1999,				7	145	97	83	99	95	Y	94	145	93	92	100	93	Y	95	145	95	92	98	92	Y	95	Y	95	95	
	191130037	1	1/15/1999	12/31/2011	12/29/2011	SLAMS	01/15/1999,				7	145	100	97	100	100	Y	99	145	100	100	100	100	Y	100	145	97	100	97	100	Y	98	Y	99	99	
	191130040	1	1/15/2008		12/31/2012	PECIAL PURPOSE	01/01/2012,				7	145	94	90	97	96	Y	94	145	89	100	98	97	Y	96	145	99	100	98	99	Y	99	Y	96	96	
	191370002	1	5/30/2002		12/29/2012	SLAMS	05/30/2002,				7	145	100	83	82	97	Y	90	145	93	93	80	85	Y	88	145	97	90	100	97	Y	96	Y	91	91	
	191390015	1	4/1/2000		12/31/2012	SLAMS	01/01/2000,05/31/2009				7	145	84	91	84	94	Y	88	145	98	99	91	94	Y	96	145	95	97	97	99	Y	97	Y	94	94	
	191471002	1	1/1/2005		12/29/2012	SLAMS	01/01/2007,				7	145	94	97	100	90	Y	95	145	90	93	100	100	Y	96	145	80	97	100	94	Y	93	Y	95	95	
	191530030	1	1/1/2002		12/31/2012	SLAMS	01/01/2002,				7	145	85	91	90	95	Y	90	145	99	96	100	96	Y	98	145	90	99	98	100	Y	97	Y	95	95	
	191532510	1	2/1/1999		12/29/2012	SLAMS	02/01/1999,				7	145	97	100	91	100	Y	97	145	97	93	80	97	Y	92	145	90	100	93	97	Y	95	Y	95	95	
	191630015	1	1/27/1999		12/31/2012	SLAMS	01/27/1999,06/30/2010		07/01/2010,		7	145	97	90	91	90	Y	92	145	92	95	91	89	Y	92	145	94	99	99	95	Y	97	Y	94	94	
	191630019	1	1/1/2005		12/31/2012	SLAMS	01/01/2009,				7	145	93	93	98	99	Y	96	145	97	98	97	87	Y	95	145	91	93	91	100	Y	94	Y	95	95	
	191770006	1	11/8/2004		12/29/2012	SLAMS	11/08/2004,				7	145	84	90	87	100	Y	90	145	97	100	90	93	Y	95	145	97	100	81	94	Y	93	Y	93	93	
KENTUCKY	200910007	1	1/21/1999		9/30/2012	SLAMS	01/21/1999,				7	118	84	93	81	90	Y	87	118	93	74	90	97		89	118	80	43	61	25		52		76	76	
	200910010	1	1/1/2004		9/30/2012	SLAMS	01/01/2004,				7	118	85	93	100	87	Y	91	118	87	97	100	87	Y	93	118	83	93	100	79		84		89	89	
	201070002	1	1/21/1999		9/30/2012	SLAMS	01/21/																													

Meta Data											2008 Completeness								2009 Completeness								2010 Completeness								3-Year Information	
State	Site	POC	Monitor begin date	Monitor end date	Last sampling date	Monitor Type (from AQS AMP-240)	MT SLAMS	MT TRIBAL MONITOR	MT NCORE	MT NON-REG	EPA REG	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	All Qtrs 75%+	Avg. Capture		
MAINE	221090001	1	1/1/2000		9/30/2012	SLAMS	01/01/2000,				6	118	97	100	74	80		88	118	97	97	100	88	Y	95	118	93	100	100	97	Y	98			94	
	221210001	1	1/1/1999		9/30/2012	SLAMS	01/01/1999,				6	118	80	78	91	94	Y	86	118	95	98	100	100	Y	98	118	98	100	100	100	Y	96			93	
	230010011	1	1/1/1999		12/29/2012	SLAMS	01/01/1999,				1	118	97	97	97	97	Y	97	118	100	87	93	97	Y	94	118	73	100	94	100			92		94	
	230030013	1	1/1/1999	7/1/2009	6/30/2009	SLAMS	01/01/1999,07/01/2009				1	118	97	93	97	30		79	118	80	90	0			73	118	90	100	88	100	Y	94			76	
	230030014	1	7/7/2009		11/29/2012	SLAMS	07/07/2009,				1								118	0	0	37	77		28	118	90	100	88	100	Y	94			61	
	230031011	1	10/1/1997		11/29/2012	SLAMS	10/01/1997,				1	118	87	90	87	83	Y	87	118	85	87	90	90	Y	88	118	73	70	87	90			80		85	
MARYLAND	230090103	1	01/01/1999		12/29/2012	SLAMS	01/01/1999,		07/01/2010,		1	118	92	83	97	100	Y	93	118	100	84	97	100	Y	95	118	100	100	97	100	Y	99			96	
	230190002	1	1/1/1999		12/29/2012	SLAMS	01/01/1999,				1	118	90	100	100	93	Y	96	118	100	97	90	94	Y	95	118	87	93	100	97	Y	94			95	
	240031003	1	1/1/1999		12/29/2012	SLAMS	01/01/1999,				3	120	100	100	100	83	Y	96	0	78	98	93	92	Y	90	118	98	98	99	91	Y	96			94	
	240051007	1	1/1/1999		12/26/2012	SLAMS	01/01/1999,				3	120	85	87	93	100	Y	91	120	97	100	100	100	Y	99	120	100	97	97	93	Y	97			96	
	240053001	1	1/1/1999		12/29/2012	SLAMS	01/01/1999,				3	120	77	92	95	100	Y	91	0	92	94	91	99	Y	94	118	90	93	84	90	Y	89			91	
	240150003	1	1/1/1999	6/30/2010	6/28/2010	SLAMS	01/01/1999,06/30/2010				3	120	93	93	97	97	Y	95	0	100	97	87	80	Y	91	118	87	93						92		
	240150003	3	7/3/2008		12/31/2012	SLAMS	07/01/2010,		07/03/2008,06/30/20		3	170	0	0	94	94		47	170	90	99	91	96	Y	94	170	98	93	94	62					76	
	240230002	3	7/1/2010		12/31/2012	SLAMS	07/01/2010,07/01/2010		07/01/2010,		3															170	0	0	99	93					48	
	240251001	1	1/1/1999	9/6/2011	9/3/2011	SLAMS	01/01/1999,09/06/2011				3	120	96	80	85	97	Y	89	0	97	97	87	93	Y	93	118	90	97	81	93	Y	90			91	
	240290002	3	7/1/2010		12/31/2012	SLAMS	07/01/2010,				3															170	0	0	96	95					48	
	240313001	1	1/1/1999	6/30/2010	6/22/2010	SLAMS	01/01/1999,06/30/2010				3	120	100	97	97	100	Y	98	0	94	100	100	90	Y	96	118	83	83							92	
	240313001	3	8/22/2008		12/31/2012	SLAMS	07/01/2010,		08/22/2008,06/30/20		3	170	0	0	62	66		32	170	93	98	95	98	Y	96	170	98	96	95	98	Y	97			75	
	240330025	1	1/1/2007	12/30/2011	12/29/2011	SLAMS	01/01/2007,12/30/2011				3	120	87	100	97	90	Y	93	0	84	100	97	100	Y	95	118	90	100	87	94	Y	93			94	
	240330030	1	7/10/2004		12/29/2012	SLAMS	07/10/2004,07/01/2010		07/01/2010,		3	120	93	100	93	93	Y	95	0	90	90	93	94	Y	92	118	90	90	71	100					92	
	240330030	2	7/31/2010		12/23/2012	NCORE			07/31/2010,		3															118	0	0	67	40					27	
	240330030	3	7/3/2008		12/31/2012	SLAMS	07/01/2010,		7/03/2008,06/30/20		3	170	0	0	86	92		45	170	99	97	94	98	Y	97	170	92	99	98	94	Y	96			79	
	240338003	1	5/1/2002		12/29/2012	SLAMS	05/01/2002,				3	120	93	97	100	97	Y	97	0	100	93	90	100	Y	96	118	97	93	85	93	Y	92			95	
	240338003	2	7/1/2002		12/29/2012	SLAMS	07/01/2002,				3	120	100	100	100	100	Y	100	120	100	100	100	100	Y	100	120	89	83	100	72					95	
	240430009	1	4/1/1999	6/30/2010	6/28/2010	SLAMS	04/01/1999,06/30/2010				3	120	100	100	97	100	Y	99	120	97	100	100	97	Y	98	120	97	97							98	
	240430009	3	7/1/2010		12/31/2012	SLAMS	07/01/2010,				3															170	0	0	88	89					44	
	245100006	1	1/1/1999	12/30/2011	12/29/2011	SLAMS	01/01/1999,12/30/2011				3	120	94	100	100	97	Y	98	120	94	97	97	100	Y	97	120	97	93	97	97	Y	96			97	
	245100007	1	1/1/1999		12/29/2012	SLAMS	01/01/1999,				3	120	100	90	100	83	Y	93	0	94	88	97	96	Y	94	118	97	93	90	90	Y	93			93	
	245100008	1	6/20/2001		12/29/2012	SLAMS	06/20/2001,				3	120	90	93	97	80	Y	90	0	78	97	97	94	Y	91	118	73	95	95	87					89	
	245100035	1	1/1/1999	8/18/2008	8/17/2008	SLAMS	01/01/1999,08/18/2008				3	120	87	99	90			92																	92	
	245100035	2	1/1/1999	8/10/2008	8/6/2008	SLAMS	01/01/1999,08/10/2008				3	120	100	100	50			88																		88
	245100040	1	1/1/1999		12/31/2012	SLAMS	01/01/1999,				3	120	76	89	91	93	Y	88	120	88	93	87	83	Y	88	120	71	92	83	79					86	
245100040	3	7/3/2008		12/31/2012	SLAMS	07/01/2010,		07/03/2008,06/30/20		3	170	0	0	94	91		46	170	99	99	94	99	Y	98	170	98	99	93	99	Y	97				80	
MASSACHUSETTS	250035001	1	1/3/1999		12/29/2012	SLAMS	12/15/1998,				1	145	96	100	100	97	Y	98	145	100	100	97	97	Y	98	145	100	97	97	97	Y	98			98	
	250051004	1	1/1/2003		12/29/2012	SLAMS	01/01/2003,				1	145	100	100	100	100	Y	100	145	100	97	100	90	Y	97	145	100	100	100	100	Y	100			100	
	250092006	1	1/3/1999		12/29/2012	SLAMS	01/03/1999,				1	145	91	97	97	90	Y	94	145	100	97	97	94	Y	97	145	97	100	82	100	Y	95			95	
	250095005	1	1/3/1999		12/29/2012	SLAMS	01/03/1999,				1	145	100	93	87	100	Y	95	145	100	100	100	91	Y	98	145	100	100	94	97	Y	98			97	
	250096001	1	4/3/1999		12/29/2012	SLAMS	04/03/1999,				1	145	100																							

Meta Data											2008 Completeness								2009 Completeness								2010 Completeness								3-Year Information	
State	Site	POC	Monitor begin date	Monitor end date	Last sampling date	Monitor Type (from AQS AMP-240)	MT SLAMS	MT TRIBAL MONITOR	MT NCORE	MT NON-REG	EPA REG	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	All Qtrs 75%+	Avg. Capture		
NEBRASKA	310550019	1	1/1/1999		12/31/2012	JA COLLOCATE	01/01/1999,09/30/2009		07/01/2010,		7	118	83	95	93	91	Y	91	0	92	82	84	100	Y	90	145	100	93	87	93	Y	93	Y	91		
	310550019	2	1/1/1999		12/29/2012	SLAMS	01/01/1999,09/30/2009		01/01/2011,		7	118	72	83	100	83		85	118	89	100	100	0		72	170	97	96	98	24			79	79		
	310550019	3	9/30/2009	12/31/2010	12/31/2010	SLAMS	10/01/2009,12/31/2010		07/01/2010,12/31/2010		7	170	0	0	0	0		25	118	0	0	0	99		25	170	97	96	98	24			79	52		
	310550052	1	1/1/1999		12/29/2012	SLAMS	01/01/1999,				7	118	88	100	100	93	Y	95	0	100	94	97	87	Y	94	145	73	93	81	81			82	90		
	310790004	1	5/9/2004		9/30/2012	SLAMS	05/09/2004,				7	118	82	100	77	100	Y	90	118	100	97	93	97	Y	97	145	90	83	97	100	Y	93	Y	93		
	311090022	1	1/1/1999		9/30/2012	SLAMS	01/01/1999,				7	118	90	93	100	97	Y	95	118	90	100	100	100	Y	98	145	100	100	100	97	Y	99	Y	97		
	311090022	2	1/1/1999		9/30/2012	SLAMS	01/01/1999,				7	118	44	83	67	100		74	118	100	100	100	89	Y	97	145	100	100	100	100	Y	100	Y	90		
	311530007	1	3/1/1999	6/30/2010	6/28/2010	SLAMS	03/01/1999,06/30/2010				7	118	67	90	97	93		87	0	59	80	97	83		80	145	63	90				77	81			
	311530007	3	7/1/2010		12/31/2012	SLAMS	07/01/2010,				7								118	62	65			63	145	83	77	87	81	Y	82		45			
	311570003	1	3/1/1999	5/13/2009	5/10/2009	SLAMS	03/01/1999,05/13/2009				7	118	93	80	81	90	Y	86	118	0	47	57	22		31	145	100	97	97	100	Y	98	Y	75		
	311570004	1	5/13/2009		9/30/2012	SLAMS	05/13/2009,				7								118	0	84	100	100	97	Y	95	145	100	97	97	100	Y	98	Y	57	
	311770002	1	4/6/1999		12/29/2012	SLAMS	04/06/1999,				7	118	81	93	81	83	Y	85	0	84	100	100	97	Y	95	145	100	97	97	100	Y	98	Y	93		
NEVADA	320030540	1	10/2/2010		12/29/2012	SLAMS	10/02/2010,				9								155	96	100	100	80	Y	94	155	93	97	93	90	Y	93	Y	93		
	320030561	1	4/14/2004		12/29/2012	SLAMS	04/14/2004,				9	155	89	87	100	100	Y	94	155	100	100	100	93	Y	98	155	93	100	100	100	Y	98	Y	97		
	320030561	2	4/14/2004		12/29/2012	SLAMS	04/14/2004,				9	155	88	100	90	87	Y	91	155	93	94	90	87	Y	91	155	90	100	97	90	Y	94	Y	92		
	320031019	1	1/1/1999		12/29/2012	SLAMS	01/01/1999,				9	155	76	83	100	100	Y	90	155	100	100	100	97	Y	99	155	93	100	100	100	Y	98	Y	96		
	320310016	1	1/1/1999	9/29/2010	9/29/2010	SLAMS	01/01/1999,09/29/2010				9	120	100	100	100	100	Y	100	0	96	100	100	100	Y	99	116	87	100	97	100	Y	96	Y	98		
	320310016	2	1/1/1999		9/30/2012	SLAMS	01/01/1999,		07/01/2010,		9	120	100	100	100	100	Y	100	0	100	100	100	100	Y	100	116	100	100	97	100	Y	100	Y	100		
	320310016	3	12/16/2010		9/30/2012	ROPOSED NCOF	01/01/2011,		01/01/2011,		9															170	0	0	0	32		8		8		
	NEW HAMPSHIRE	330012004	1	4/1/2001		10/30/2012	SLAMS	04/01/2001,				1	116	100	100	100	100	Y	100	116	100	100	100	93	Y	98	116	100	100	100	100	Y	100	Y	99	
330012004		2	4/1/2001	12/31/2008	12/26/2008	SLAMS	04/01/2001,12/31/2008				1	116	100	100	100	100	Y	100	116	100	100	100	100	Y	100	116	100	100	100	100	Y	100	Y	100		
330050007		1	1/1/1999		10/30/2012	SLAMS	01/01/1999,				1	116	100	100	93	100	Y	98	116	100	100	100	100	Y	100	116	100	100	100	100	Y	100	Y	99		
330050007		3	10/1/2008		10/31/2012	SLAMS	10/01/2008,				1	170	0	0	0	98		25	170	93	89	98	93	Y	93	170	99	94	99	99	Y	98		72		
330090010		1	1/1/2005		10/24/2012	SLAMS	01/01/2005,12/31/2008				1	116	94	100	100	100	Y	99																99		
330090010		3	12/1/2008		10/31/2012	SLAMS	12/01/2008,				1	170	0	0	0	16		4	170	90	92	92	99	Y	93	170	95	96	83	94	Y	92		63		
330111015		1	1/1/2005		10/30/2012	SLAMS	01/01/2005,				1	116	100	97	93	97	Y	97	116	96	100	97	97	Y	97	0	93	97	100	97	Y	97	Y	97		
330131006		1	1/1/2004		10/30/2012	SLAMS	01/01/2004,				1	0	100	100	100	97	Y	99	118	100	100	93	97	Y	98	0	100	100	100	93	Y	98	Y	98		
330131006		2	1/1/2006		10/30/2012	SLAMS	01/01/2006,				1	117	100	100	100	100	Y	100	0	100	100	100	33		83	0	100	100	100	100	Y	100	Y	94		
330150014		3	4/1/2004		10/31/2012	SLAMS	04/01/2004,12/31/2009				1	0	0	0	0	0		0	0	0	0	0	0	0	0	170	29	73	96	85		71		24		
330190003		1	1/1/1999	12/31/2008	12/26/2008	SLAMS	01/01/1999,12/31/2008				1	116	94	100	100	100	Y	99																99		
NEW JERSEY	340010006	1	1/1/2007		9/30/2012	SLAMS	01/01/2007,				2	118	79	60	90	87		79	118	91	97	100	100	Y	97	118	90	100	100	100	Y	98		91		
	340010006	1	7/27/2001		9/30/2012	SLAMS	07/27/2001,				2	118	82	77	91	67		79	118	100	97	80	61		85	118	100	93	97	87	Y	94		86		
	340030003	1	1/1/1999		9/30/2012	SLAMS	01/01/1999,				2	118	94	83	81	90	Y	87	118	97	97	100	84	Y	94	118	100	97	100	97	Y	98	Y	93		
	340030007	1	9/10/2007	9/21/2008	9/21/2008	SLAMS	09/10/2007,09/21/2008				2	117	89	93	87			90																90		
	340030007	2	9/10/2007	9/21/2008	9/21/2008	SLAMS	09/10/2007,09/21/2008				2	0	0	0	0			0																0		
	340030007	3	9/10/2007	9/21/2008	9/21/2008	SLAMS	09/10/2007,09/21/2008				2	0	0	0	0			0																0		
	340030008	1	9/10/2007	9/21/2008	9/21/2008	SLAMS	09/10/2007,09/21/2008				2	117	86	100	87			91																91		
	340030008	2	9/10/2007	9/21/2008	9/21/2008	SLAMS	09/10/2007,09/21/2008				2	0	0	0	0			0																0		
	340030008	3	9/10/9																																	

Meta Data											2008 Completeness								2009 Completeness								2010 Completeness								3-Year Information	
State	Site	POC	Monitor begin date	Monitor end date	Last sampling date	Monitor Type (from AQS AMP-240)	MT SLAMS	MT TRIBAL MONITOR	MT NCORE	MT NON-REG	EPA REG	Method	Qtr1	Qtr2	Qtr3	Qtr4	All 4 Qs 75%+	Year %	Method	Qtr1	Qtr2	Qtr3	Qtr4	All 4 Qs 75%+	Year %	Method	Qtr1	Qtr2	Qtr3	Qtr4	All 4 Qs 75%+	Year %	All Qtrs 75%+	Avg. Capture		
OKLAHOMA	390250022	1	1/1/2005	12/31/2011	12/29/2011	SLAMS	01/01/2005,12/31/2011				5	120	88	100	93	100	Y	95	120	100	97	100	100	Y	99	120	90	100	97	87	Y	94	Y	96		
	390350027	1	1/8/1999	7/6/2009		SLAMS	01/08/1999,07/06/2009				5	120	90	93	87	77	Y	87	120	80	90	100		87	120	90	100	97	87	Y	94	Y	96			
	390350034	1	7/11/2000		12/29/2012	SLAMS	07/11/2000,				5	120	85	100	97	93	Y	94	120	94	100	93	100	Y	97	120	100	83	93	90	Y	92	Y	94		
	390350038	1	1/8/1999		12/31/2012	SLAMS	01/03/1999,				5	120	97	100	97	97	Y	98	120	94	100	93	100	Y	97	120	90	97	87	100	Y	93	Y	96		
	390350045	1	12/14/1999		12/29/2012	SLAMS	12/14/1999,				5	120	91	97	84	90	Y	90	120	97	94	97	100	Y	97	120	100	97	100	94	Y	98	Y	96		
	390350060	1	1/8/1999		12/29/2012	SLAMS	01/08/1999,05/21/2009		07/01/2010,		5	120	56	100	97	97	Y	87	120	90	60	63	97	78	120	83	100	97	94	Y	94	Y	94			
	390350065	1	1/29/1999		12/29/2012	SLAMS	01/29/1999,				5	120	94	100	94	100	Y	97	120	94	97	97	100	Y	97	120	100	97	75	91	Y	91	Y	95		
	390351002	1	1/8/1999		12/29/2012	SLAMS	01/08/1999,				5	120	71	90	97	100	Y	89	120	88	93	73	97	88	120	87	80	100	88	Y	89	Y	89			
	390490024	1	1/1/1999		12/29/2012	SLAMS	01/01/1999,				5	120	90	100	93	93	Y	94	120	84	100	93	97	Y	93	120	97	97	100	94	Y	97	Y	95		
	390490025	3	6/24/2010		12/31/2012	SLAMS	06/24/2010,		06/24/2010,		5																120	100	93	100	93	Y	97	Y	94	
	390490081	1	1/1/1999		12/29/2012	SLAMS	01/01/1999,				5	120	85	93	100	97	Y	94	120	90	100	100	97	Y	97	120	97	97	100	100	Y	98	Y	96		
	390570005	1	10/3/2003		12/29/2012	SLAMS	10/03/2003,				5	0	97	100	93	100	Y	98	142	100	100	100	97	Y	99	142	97	100	43	100	85	94				
	390610006	1	1/1/2005		12/29/2012	SLAMS	01/01/2005,				5	120	96	97	93	97	Y	96	120	100	100	100	100	Y	100	120	93	100	100	67	90					
	390610014	1	1/1/1999		12/29/2012	SLAMS	01/01/1999,				5	120	94	100	97	100	Y	98	120	91	99	99	100	Y	97	120	85	99	99	99	Y	96	Y	97		
	390610040	1	4/3/1999		12/29/2012	SLAMS	04/01/1999,				5	0	90	87	90	83	Y	88	142	89	90	100	100	Y	95	142	93	90	91	88	Y	91	Y	91		
	390610042	1	10/3/2000		12/29/2012	SLAMS	10/03/2000,				5	120	85	90	90	100	Y	91	0	97	88	93	80	Y	89	142	100	97	100	100	Y	99	Y	93		
	390610043	1	10/3/2000	12/31/2008	12/29/2008	SLAMS	10/03/2000,12/31/2008				5	120	93	100	90	100	Y	96																		
	390617001	1	1/30/1999	12/31/2010	12/31/2010	SLAMS	01/30/1999,12/31/2010				5	0	94	97	87	90	Y	92	142	100	93	97	100	Y	98	142	100	97	93	94	Y	96	Y	95		
	390618001	1	3/25/1999	2/7/2010	2/7/2010	SLAMS	03/25/1999,02/07/2010				5	120	84	97	100	97	Y	94	120	100	97	93	93	Y	96	120	79	97	100	100	Y	98	Y	96		
	390810017	1	1/1/2003		12/31/2012	SLAMS	11/01/2003,				5	120	100	83	90	73	Y	87	120	97	94	83	94	Y	92	120	93	93	87	81	Y	89				
	390811001	1	2/1/1999		12/29/2012	SLAMS	02/1/1999,				5	120	94	87	100	93	Y	94	120	93	100	93	93	Y	95	120	87	87	93	87	Y	98	Y	92		
	390850007	1	1/1/2009		12/29/2012	SLAMS	01/01/2009,				5								120	87	93	100	88	Y	92	120	97	97	100	100	Y	98				
	390853002	1	1/1/2006	12/31/2008	12/29/2008	SLAMS	01/1/2006,12/31/2008				5	120	75	100	100	87	Y	91																		
	390870010	1	1/24/1999	2/11/2008	2/9/2008	SLAMS	01/24/1999,02/11/2008				5	120	75					75																		
	390870012	1	2/12/2008		12/29/2012	SLAMS	02/12/2008,				5	120	61	90	97	83	Y	83	120	91	93	97	100	Y	95	120	97	87	100	100	Y	96				
	390933002	1	1/5/2002		12/29/2012	SLAMS	01/05/2002,				5	120	94	97	97	97	Y	96	120	96	100	93	94	Y	96	120	87	100	100	100	Y	97	Y	96		
	390950024	1	2/11/1999		12/29/2012	SLAMS	01/14/1999,				5	120	94	98	92	86	Y	93	120	95	97	100	90	Y	95	120	100	100	83	91	Y	94	Y	94		
	390950025	1	3/1/1999	10/21/2008	10/21/2008	SLAMS	03/01/1999,10/21/2008				5	120	62	93	94	86	Y	83																		
	390950026	1	5/29/1999		12/29/2012	SLAMS	04/1/1999,				5	120	87	97	97	83	Y	91	0	79	97	97	97	Y	92	118	83	100	88	100	Y	93	Y	92		
	390950028	1	10/24/2008		12/29/2012	SLAMS	10/24/2008,				5	0	0	0	0	68	Y	17	0	87	84	93	93	Y	89	118	90	97	81	97	Y	91				
	390990005	1	1/1/1999		12/29/2012	SLAMS	01/01/1999,				5	120	100	100	93	93	Y	97	120	100	100	93	100	Y	98	120	100	87	88	93	Y	92	Y	96		
	390990014	1	10/5/2002		12/29/2012	SLAMS	10/05/2002,				5	120	99	98	97	97	Y	98	120	88	100	100	87	Y	94	120	100	100	100	97	Y	99	Y	97		
	391030003	1	4/1/2005	12/31/2010	12/31/2010	SLAMS	04/01/2005,12/31/2010				5	120	94	100	91	87	Y	93	120	96	91	100	93	Y	95	120	90	93	100	97	Y	95	Y	94		
391030004	3	9/1/2009	2/29/2012	2/29/2012	3N-REGULATORY	01/01/2011,01/31/2011		09/01/2009,02/29/20		5	182	0	0	33	100	Y	33	182	0	0	33	100	Y	33	182	100	0	0	0	0	25	29				
391130032	1	8/1/2001		12/29/2012	SLAMS	08/01/2001,				5	120	93	97	98	94	Y	95	0	95	100	90	100	Y	96	145	93	100	97	100	Y	98	Y	96			
391330002	1	1/30/1999		12/29/2012	SLAMS	01/30/1999,				5	120	97	100	100	83	Y	95	120	94	100	87	97	Y	94	120	87	97	97	97	Y	94	Y	94			
391351001	1	1/21/1999		12/29/2012	SLAMS	01/21/1999,		07/01/2010,		5	120	94	100	100	97	Y	98	0	93	94	100	97	Y	96	145	97	100	100	97	Y	98	Y	97			
391450013	1	1/15/1999		12/29/2012	SLAMS	01/15/1999,				5	120	99	97	87	97	Y</																				

Meta Data											2008 Completeness								2009 Completeness								2010 Completeness								3-Year Information	
State	Site	POC	Monitor begin date	Monitor end date	Last sampling date	Monitor Type (from AQS AMP-240)	MT SLAMS	MT TRIBAL MONITOR	MT NCORE	MT NON-REG	EPA REG	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	All Qtrs 75%+	Avg. Capture		
PENNSYLVANIA	410670004	1	1/28/2005		9/30/2012	SLAMS	12/01/2006,				10	118	94	100	73	73		85	118	90	82	93	93	Y	90	118	100	90	81	83	Y	89	88			
	410670004	2	7/1/2010	4/10/2011	4/9/2011	SLAMS	07/01/2010,04/10/2011				10								118							118	0	0	50	89		35	35			
	420010001	1	1/1/1999	6/30/2009	6/30/2009	SLAMS	01/01/1999,06/30/2009				3	145	91	89	97	95	Y	93	145	91	91				91	170	96	97	93	97	Y	96	92			
	420010001	3	7/1/2009		12/31/2012	SLAMS	07/01/2009,				3	170	0	0	0				170	0	0	95	94		47	170	96	97	93	97	Y	96	72			
	420030008	1	2/23/1999		9/30/2012	SLAMS	01/01/1999,		07/01/2010,		3	118	98	96	92	99	Y	96	118	91	100	98	87	Y	94	118	90	98	88	99	Y	94	Y	95		
	420030008	2	1/1/2005		9/24/2012	SLAMS	01/01/2005,		07/01/2010,		3	118	86	100	100	93	Y	95	118	89	100	100	100	Y	97	118	100	100	100	100	Y	100	Y	97		
	420030064	1	1/23/1999		9/30/2012	SLAMS	01/01/1999,				3	118	99	99	97	97	Y	98	118	91	99	98	87	Y	94	118	85	97	94	98	Y	93	Y	95		
	420030064	2	1/1/2005		9/24/2012	SLAMS	01/01/2005,				3	118	86	93	93	87	Y	90	118	89	100	100	89	Y	95	118	100	100	100	100	Y	100	Y	95		
	420030067	1	4/12/1999		9/27/2012	SLAMS	01/01/1999,				3	118	80	93	91	90	Y	89	118	81	91	90	81	Y	86	118	83	93	91	97	Y	91	Y	89		
	420031008	1	2/13/1999		9/27/2012	SLAMS	02/13/1999,				3	118	84	93	97	77	Y	88	118	84	87	87	74		83	118	83	93	91	97	Y	91	Y	87		
	420031301	1	1/30/1999		9/27/2012	SLAMS	01/30/1999,				3	118	78	83	94	90	Y	86	118	81	94	97	84	Y	89	118	83	80	97	87	Y	87	Y	87		
	420050001	3	7/1/2009		12/31/2012	SLAMS	07/01/2009,				3	170	0	0	100	98			170	0	0	100	98		50	170	93	100	95	97	Y	96	73			
	420070014	1	12/1/1999		9/30/2012	SLAMS	12/01/1999,				3	118	100	87	90	97	Y	93	118	89	93	90	96	Y	92	118	88	77	84	98	Y	87	Y	91		
	420070014	3	10/7/2010		12/31/2012	SLAMS	10/07/2010,				3															181	0	0	0	100		25	25			
	420110011	1	7/1/2007		9/30/2012	SLAMS	07/01/2007,				3	118	91	97	90	100	Y	95	118	89	99	75	100	Y	91	118	100	82	80	79	Y	85	Y	90		
	420110011	3	10/7/2010		12/31/2012	SLAMS	10/07/2010,				3															181	0	0	0	98		25	25			
	420130801	3	6/1/2010		12/31/2012	SLAMS	06/01/2010,				3															170	0	33	96	88		54	54			
	420170012	1	1/1/1999		9/30/2012	SLAMS	01/01/1999,				3	118	84	60	93	100		84	118	83	88	91	88	Y	88	118	96	96	88	97	Y	94	89			
	420170012	3	6/1/2010		12/31/2012	SLAMS	06/01/2010,				3															170	0	33	94	84		53	53			
	420210011	1	1/1/1999	12/31/2010	12/31/2010	SLAMS	01/01/1999,12/31/2010				3	118	100	100	100	100	Y	100	118	83	100	91	96	Y	93	118	99	89	92	89	Y	92	Y	95		
	420210011	3	4/1/2009		12/31/2012	SLAMS	04/01/2009,				3	170	0	99	93	100			170	0	99	93	100		73	170	94	99	86	99	Y	95	84			
	420270100	1	2/1/2000		9/27/2012	SLAMS	02/01/2000,				3	145	100	99	99	95	Y	98	145	85	95	89	97	Y	91	145	99	99	98	90	Y	97	Y	95		
	420270100	3	9/1/2010		12/31/2012	SLAMS	09/01/2010,				3															170	0	0	28	91		30	30			
	420290100	1	1/1/2002		6/30/2009	OTHER	10/01/2012,				3	118	66	83	93	90		83	118	84	89	0	0		43	170	87	99	94	96	Y	94	63			
	420290100	3	7/1/2009		12/31/2012	SLAMS	07/01/2009,				3	170	0	0	98	95			170	0	0	98	95	Y	95	118	98	93	98	95	Y	96	Y	96		
	420410101	1	3/29/2001		9/30/2012	SLAMS	03/29/2001,				3	118	98	97	96	98	Y	97	170	95	94	100	98	Y	96	170	72	99	95	100		92	94			
	420410101	3	1/1/2009		12/31/2012	SLAMS	01/01/2009,				3	145	96	92	99	93	Y	95	170	89	94	99	94	Y	94	170	100	100	95	100	Y	99	95			
	420430401	1	1/1/1999		9/30/2012	SLAMS	01/01/1999,12/31/2008				3	145	96	92	99	93	Y	95	170	89	94	99	94	Y	94	170	100	100	95	100	Y	99	97			
	420430401	3	1/1/2009	12/31/2011	12/31/2011	SLAMS	01/01/2009,12/31/2011				3								170	89	94	99	94	Y	94	170	100	100	95	100	Y	99	97			
	420450002	1	1/1/1999	3/31/2009	3/31/2009	SLAMS	01/01/1999,03/31/2009				3	118	82	83	87	93	Y	86	118	93					93	170	90	99	97	95	Y	95	90			
	420450002	3	4/1/2009		12/31/2012	SLAMS	04/01/2009,				3	170	0	97	94	100			170	0	97	94	100		73	170	90	99	97	95	Y	95	84			
	420490003	1	1/1/1999	6/30/2009	6/28/2009	SLAMS	01/01/1999,06/30/2009				3	145	99	97	88	89	Y	93	145	61	87				74	170	67	100	100	86		88	84			
	420490003	3	7/1/2009		12/31/2012	SLAMS	07/01/2009,				3	145	89	99	100	94	Y	95	145	88	98				93	170	96	95	100	92	Y	96	72			
	420692006	1	1/1/1999	6/30/2009	6/29/2009	SLAMS	01/01/1999,06/30/2009				3	118	100	97	90	83	Y	93	118	76	99	96	98	Y	92	118	86	98	91	99	Y	94	Y	93		
	420692006	3	7/1/2009		12/31/2012	SLAMS	07/01/2009,				3	170	0	0	99	90			170	0	0	99	90		47	170	96	95	100	92	Y	96	85			
	420710007	1	1/1/1999		9/30/2012	SLAMS	01/01/1999,				3	118	100	97	90	83	Y	93	118	76	99	96	98	Y	92	118	100	87	100	93	Y	95	93			
	420710007	2	1/1/1999		9/30/2012	SLAMS	01/01/2009,				3	118	63	76	87	73			118	63	76	87	73		75	181	0	0	0	98		24	24			
	420710007	3	10/7/2010		12/31/2012	SLAMS	10/07/2010,				3															181	0	0	0	98		24	24			
	420850100	1	2/1/2000		9/30/2012	SLAMS	02/01/2000,				3	145	79	98	91	97	Y	91	145	93	97	98	99	Y	97	145	81	70	95	97		86	91			
	420850100	3	11/3/2010		12/31/2012	SLAMS	11/03/2010,				3																									

Meta Data											2008 Completeness								2009 Completeness								2010 Completeness								3-Year Information	
State	Site	POC	Monitor begin date	Monitor end date	Last sampling date	Monitor Type (from AQS AMP-240)	MT SLAMS	MT TRIBAL MONITOR	MT NCORE	MT NON-REG	EPA REG	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	All Qtrs 75%+	Avg. Capture		
SOUTH DAKOTA	450630008	1	12/1/1998		1/31/2013	SLAMS	12/01/1998,				4	118	91	72	69	89	80		118	100	98	97	99	Y	98	118	98	98	95	95	Y	96			91	
	450730001	1	12/31/1998	1/7/2011	12/31/2010	SLAMS	12/31/1998,01/07/2011				4	118	94	87	90	97	Y	92		118	86	97	100	97	Y	95	118	80	97	90	91	Y	89		Y	92
	450790007	1	11/1/1998		1/31/2013	PECIAL PURPOSE			07/01/2010,		4	118	93	100	97	100	Y	97			0	0	0	0	Y		118	97	80	90	93	Y	90			62
	450790019	1	11/26/1998		1/31/2013	SLAMS	11/26/1998,				4	118	81	80	75	70	77		118	92	87	71	55	76		118	93	87	92	97	Y	92			82	
	450790019	2	11/26/1998		1/28/2013	SLAMS	01/01/2007,				4	118	89	73	80	87	82		118	100	87	93	73	88		118	100	100	89	100	Y	97			89	
	450830010	1	11/13/1998	1/15/2010	12/31/2009	SLAMS	11/13/1998,01/15/2010				4	118	92	85	99	100	Y	94		118	98	100	98	97	Y	98		0						0	64	
	450830011	1	12/31/2008		1/31/2013	PECIAL PURPOSE	01/01/2011,				4		0	0	0	0	0		118	97	84	70	93	86		118	99	99	91	96	Y	96			61	
	460130003	1	12/20/1999		9/30/2012	SLAMS	12/20/1999,				8	119	100	100	100	100	Y	100		0	100	97	100	97	Y	98	153	83	100	97	100	Y	95		Y	98
	460290002	1	1/1/2003		12/29/2011	SLAMS	01/01/2003,				8	119	83	80	100	100	Y	91		153	93	93	100	100	Y	97	153	87	100	97	97	Y	95		Y	94
	460330132	1	1/1/2005	12/31/2010	12/31/2010	SLAMS	01/01/2005,12/31/2010				8	119	84	100	90	100	Y	94		119	90	70	93	97	88		119	100	87	91	93	Y	93			92
TENNESSEE	460330132	3	1/1/2009		9/30/2012	PECIAL PURPOSE	01/01/2011,				8								170	87	99	91	99	Y	94	170	99	98	89	99	Y	96			95	
	460710001	1	12/31/1999	12/31/2008	12/29/2008	SLAMS	12/31/1999,12/31/2008				8	119	94	97	100	100	Y	98																		98
	460710001	3	1/1/2009		9/30/2012	SLAMS	01/01/2009,				8								170	92	90	99	95	Y	94	170	93	99	99	99	Y	97			96	
	460990006	1	1/1/1999		9/30/2012	SLAMS	01/01/1999,				8	119	97	100	100	100	Y	99		0	100	100	97	100	Y	99	153	100	97	100	100	Y	99		Y	99
	460990008	1	1/1/2008		9/30/2012	SLAMS	01/01/2008,		07/01/2010,		8	119	78	90	97	100	Y	91		142	97	100	100	100	Y	99	0	100	100	100	100	Y	100		Y	97
	460990008	3	1/1/2009		9/30/2012	PECIAL PURPOSE					8								170	95	92	100	98	Y	96	170	98	95	100	100	Y	98			97	
	461030020	1	10/9/2003	12/31/2010	12/31/2010	SLAMS	10/09/2003,12/31/2010				8	119	100	100	100	97	Y	99		0	100	100	100	100	Y	100	153	90	90	93	100	Y	93		Y	97
	461031001	1	1/1/1999		9/30/2012	SLAMS	01/01/1999,				8	119	91	100	100	100	Y	98		0	100	100	97	100	Y	99	153	100	97	100	97	Y	98		Y	98
	461270002	1	1/1/2009		12/29/2011	SLAMS	01/01/2009,				8								0	100	100	93	100	Y	98	153	77	100	100	100	Y	94			96	
	470370023	1	1/1/1999		9/30/2012	SLAMS	01/01/1999,				4	120	99	100	95	100	Y	98		120	98	100	98	95	Y	98	120	99	100	99	98	Y	99		Y	98
470370023	2	1/1/1999		9/30/2012	SLAMS	01/01/1999,				4	120	100	100	100	100	Y	100		120	100	100	100	100	Y	100	120	100	100	100	100	Y	100			100	
470370036	1	1/1/1999		9/30/2012	SLAMS	01/01/1999,				4	120	98	100	99	99	Y	99		120	96	100	100	93	Y	97	120	98	92	88	98	Y	94			97	
470450004	1	8/22/1999		12/29/2012	SLAMS	08/22/1999,				4	118	94	90	93	87	Y	91		118	90	88	83	100	Y	90	118	100	93	91	88	Y	93			91	
470654002	1	1/1/1999		9/30/2012	SLAMS	01/01/1999,				4	118	100	100	100	87	Y	97		118	100	93	93	94	Y	95	118	100	87	100	100	Y	97			96	
470654002	2	1/1/1999		9/30/2012	SLAMS	01/01/1999,				4	118	100	97	97	97	Y	98		118	100	93	87	77	Y	89	118	97	80	100	100	Y	94			94	
470930028	1	1/1/1999		9/30/2012	SLAMS	01/01/1999,				4	118	91	67	65	98	80		118	93	74	97	93	89		118	96	98	98	69					86		
470931017	1	1/1/1999		9/30/2012	SLAMS	01/01/1999,				4	118	93	66	97	94	87		118	89	81	94	88	Y	88		118	96	77	97	99	Y	92			89	
470931020	1	1/1/1999		9/30/2012	SLAMS	01/01/1999,				4	118	93	78	82	97	Y	87		118	98	92	99	96	Y	96	118	99	99	98	98	Y	98			94	
470990002	1	10/1/1998		12/31/2012	SLAMS	12/24/1998,				4	118	96	90	87	77	Y	87		118	90	100	100	97	Y	97	118	100	100	100	97	Y	99			94	
471130006	1	11/17/2004		12/29/2012	SLAMS	11/17/2004,				4	118	97	100	100	100	Y	99		118	97	93	90	100	Y	95	118	100	97	100	97	Y	98			97	
471130006	2	11/17/2004		12/29/2012	SLAMS	11/17/2004,				4	118	90	93	100	100	Y	96		118	100	93	90	100	Y	96	118	93	97	90	94	Y	94			95	
471251009	1	10/1/1998		12/31/2012	SLAMS	12/25/1998,				4	118	86	98	91	98	Y	93		118	93	98	87	98	Y	94	118	95	93	97	94	Y	95			94	
471570014	1	12/1/1998	2/20/2011	2/20/2011	SLAMS	01/16/1999,02/20/2011				4	118	97	78	92	91	Y	90		118	85	92	80	98	Y	89	118	98	95	97	99	Y	97			92	
471570038	1	12/1/1998	3/31/2008	3/31/2008	SLAMS	01/16/1999,03/31/2008				4	118	97																							97	
471570047	1	12/1/1998		11/30/2012	SLAMS	01/16/1999,				4	118	86	92	100	99	Y	94		118	99	96	97	99	Y	98	0	99	98	100	97	Y	99			97	
471570047	2	1/1/1999		11/29/2012	SLAMS	01/01/1999,				4	117	94	100	100	100	Y	99		117	100	93	100	100	Y	98	0	100	100	83	100	Y	96			98	
471571004	1	12/1/1998	8/1/2008	7/29/2008	SLAMS	12/01/1998,08/01/2008				4	118	100	100	50			88																			

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Meta Data											2008 Completeness								2009 Completeness								2010 Completeness								3-Year Information	
State	Site	POC	Monitor begin date	Monitor end date	Last sampling date	Monitor Type (from AQS AMP-240)	MT SLAMS	MT TRIBAL MONITOR	MT NCORE	MT NON-REG	EPA REG	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	Method	Qtr1 %	Qtr2 %	Qtr3 %	Qtr4 %	All 4 Qs 75%+	Year %	All Qtrs 75%+	Avg. Capture		
WYOMING	551198001	1	5/3/2003		9/30/2012	SLAMS	05/03/2003,				5	118	100	100	97	97	Y	98	118	87	91	97	93	Y	92	118	90	93	100	100	Y	96	Y	95		
	551250001	1	1/1/1999		9/30/2012	SLAMS	01/01/2004,				5	0	94	80	67	60		75	118	100	100	100	93	Y	98	118	93	100	100	93	Y	97		90		
	551330027	2	1/1/1999		9/30/2012	SLAMS	01/01/1999,				5	118	88	100	97	100	Y	96	118	87	97	97	97	Y	94	118	100	100	100	97	Y	99	Y	96		
	560010006	1	7/12/2009		12/29/2012	SLAMS	07/12/2009,				8								117	0	0	97	100		49	0	97	93	93	94	Y	94		72		
	560131003	1	11/15/2001		12/29/2012	SLAMS	11/15/2001,				8	117	100	93	100	97	Y	98	117	100	100	100	93	Y	98	0	100	97	93	97	Y	97	Y	98		
	560210001	1	10/15/1998		12/26/2012	SLAMS	10/15/1998,				8	117	93	90	100	87	Y	93	117	89	100	97	97	Y	96	0	100	97	100	94	Y	98	Y	96		
	560210001	2	4/7/2009		12/23/2012	SLAMS	04/07/2009,				8								117	0	100	100	100		75	0	100	100	100	100	Y	100		88		
	560250001	1	5/19/2009		12/29/2012	SLAMS	05/19/2009,				8								117	0	60	100	84		61	0	97	93	94	97	Y	95		78		
	560290001	1	6/4/2008		12/29/2012	SLAMS	06/04/2008,				8	117	0	22	97	93		53	117	90	84	97	94	Y	91	0	83	90	90	100	Y	91		78		
	560330002	1	10/1/1998		12/29/2012	SLAMS	10/01/1998,08/15/2012				8	117	100	100	100	100	Y	100	117	100	90	100	100	Y	98	0	100	100	97	100	Y	99	Y	99		
560330002	2	10/1/1998		12/23/2012	SLAMS	10/01/1998,08/15/2012				8	117	100	100	100	100	Y	100	117	100	93	100	100	Y	98	0	93	93	100	100	Y	97	Y	98			
560330003	1	9/1/2005	5/30/2012	5/30/2012	SLAMS	09/01/2005,05/30/2012				8	117	100	100	97	97	Y	98	117	97	93	100	100	Y	98	0	100	97	97	100	Y	98	Y	98			
560370007	1	2/1/2008		12/29/2012	SLAMS	02/01/2008,				8	117	63	77	84	100		81	117	96	94	100	100	Y	98	0	100	80	72	94		86		88			
560391006	1	6/8/2007		12/29/2012	SLAMS	06/08/2007,				8	117	90	100	97	97	Y	96	117	100	97	87	83	Y	92	0	83	100	91	93	Y	92	Y	93			
PUERTO RICO	720010002	1	1/1/2005	8/7/2012	8/7/2012	SLAMS	01/01/2005,				2	118	93	87	97	90	Y	92	118	76	67	0	0		36									64		
	720210009	1	2/2/1999		9/30/2012	SLAMS	02/02/1999,				2	0	0	0	0	0		0																0		
	720530003	1	4/20/1999		6/29/2012	SLAMS	04/20/1999,				2	118	81	93	90	70		84	118	68	87	80	74		77	118	0	47	60	12		30		64		
	720570008	1	1/15/1999		9/30/2012	SLAMS	01/15/1999,				2	118	70	87	87	83		82	118	77	71	97	42		72	118	0	23	24	0			12		55	
	720590016	1	1/15/1999	8/2/2012	7/29/2012	SLAMS	01/15/1999,				2	118	81	97	100	80	Y	89	118	55	35	0	0		22									74		
	720610005	1	1/15/1999		9/30/2012	SLAMS	01/15/1999,				2	118	99	99	94	88	Y	95	118	74	80	77	73		76	118	0	63	80	62		51		1		
	720690001	1	2/12/2000		9/30/2012	SLAMS	02/12/2000,				2	118	3	0	0	0		1																0		
	720970006	1	2/21/2007		9/30/2012	SLAMS	02/21/2007,				2		0	0	0	0		0																0		
	721130004	1	1/15/1999	8/7/2012	8/7/2012	SLAMS	01/15/1999,				2	118	49	67	71	57		61	118	83	80	90	77	Y	83	118	0	43	100	97		60		68		
	721270003	1	3/21/1999	8/10/2012	8/7/2012	SLAMS	03/21/1999,				2	118	70	80	93	87		83	118	73	84	77	70		76									80		
VIRGIN ISLANDS	780100012	1	1/12/1999		12/28/2010	SLAMS	01/12/1999,				2	116	94	100	100	100	Y	99	116	100	93	100	100	Y	98	116	100	100	81	100	Y	95	Y	97		
	780100012	2	7/1/2002		12/22/2010	SLAMS	07/01/2002,				2	116	44	0	53	40		34	116	53	38	47	47		46	116	47	47	43	47		46		42		

Attachment 2

2008-2010 PM_{2.5} Collocated Precision Completeness at the Site and Primary Quality Assurance Organization Level and 3-Year Precision Estimate

Notes on Completeness Estimates

“**Start Date**” is the later of the dates when a site became “primary” and when the site began reporting data.

“**End Date**” is the earlier of the dates when a site ceased to be “primary” and when the site ceased reporting data.

“**# Routine Sites**” is the number of primary sites operating in the PQAQ

“**# Required Collocated Sites**” is 15% of EACH SAMPLING METHODOLOGY used in each PQAQ subject to a minimum of 1, as per *40 CFR Part 58 Appendix A*.

“**# Actual Collocated Sites**” is the number of sites actually reporting collocated precision data.

“**% Comp for # Sites in PQAQ**” is the ratio of the # Actual to # Required.

“**CV Upper Bound**” is the 3-year estimate of precision at the PQAQ level, as per *40 CFR Part 58 Appendix A*.

“**# Required Samples at Site**” is the end date minus the start date divided by 12.

“**# Actual Samples at Site**” is the number of precision pairs collected at the site.

“**% Comp for # Samples at Site and PQAQ**” is the ratio of # Actual to # Required for each site. For the PQAQ, it is the average of the largest available site-level % completeness where the number of site-level values going into the average is the # Required Collocated Sites. For example, PQAQ 1136 in WA reported collocated data for 3 sites but was required to collocate just 1. The largest available site-level % completeness is 91%, for site 530630021, thus this is the % completeness associated with the PQAQ.

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Attachment 2. 2008-2010 Collocated Precision Completeness at Site Level

Region	State	PQAO	Site ID	Start Date *	End Date *	# Routine Sites	# Required Collocated Sites	# Actual Collocated Sites	% Comp for # Sites in PQAO	CV Upper Bound	# Required Samples at Site	# Actual Samples at Site	% Comp for # Samples at Site and PQAO **
1	CT	0251	90090027	1/1/2008	12/31/2010						91	177	100%
1	CT	0251	90092123	1/1/2008	12/31/2010						91	178	100%
1	CT	0251	ALL			12	2	2	100%	10.48			100%
1	MA	0660	250130008	1/1/2008	12/31/2010						91	340	100%
1	MA	0660	250230004	1/1/2008	12/31/2010						91	318	100%
1	MA	0660	250250043	1/1/2008	12/31/2010						91	1044	100%
1	MA	0660	ALL			15	2	3	100%	8.27			100%
1	ME	0635	230050029	1/22/2008	12/31/2010						90	81	90%
1	ME	0635	ALL			6	1	1	100%	8.04			90%
1	NH	0762	330012004	1/1/2008	12/31/2010						91	61	67%
1	NH	0762	330050007	1/1/2008	12/31/2010						91	130	100%
1	NH	0762	330131006	1/1/2008	12/31/2010						91	170	100%
1	NH	0762	ALL			4	2	3	100%	7.56			100%
1	RI	0907	440070022	1/1/2008	12/31/2010						91	164	100%
1	RI	0907	440070026	1/1/2008	12/31/2010						91	17	19%
1	RI	0907	440071010	1/1/2008	12/31/2010						91	26	29%
1	RI	0907	ALL			4	2	3	50%	6.87			64%
1	VT	1119	500070012	1/1/2008	12/31/2010						91	351	100%
1	VT	1119	ALL			4	1	1	100%	4.34			100%
2	NJ	0764	340171003	1/1/2008	12/31/2010						91	156	100%
2	NJ	0764	340390004	1/1/2008	12/31/2010						91	145	100%
2	NJ	0764	ALL			19	3	2	67%	9.49			100%
2	NY	0768	360010005	1/1/2008	12/31/2010						91	320	100%
2	NY	0768	360050110	1/1/2008	6/17/2010						75	263	100%
2	NY	0768	360610079	1/1/2008	12/31/2010						91	333	100%
2	NY	0768	ALL			25	4	3	75%	5.68			100%
2	PR	0889	720610005	1/1/2008	12/31/2010						91	64	70%
2	PR	0889	ALL			7	1	1	100%	7.58			70%
2	VI	1124	780100012	1/1/2008	12/28/2010						91	76	84%
2	VI	1124	ALL			1	1	1	100%	36.95			84%
3	DC	0350	110010041	1/1/2008	12/31/2010						91	176	100%
3	DC	0350	ALL			3	1	1	100%	5.84			100%
3	DE	0294	100032004	1/1/2008	12/31/2010						91	145	100%
3	DE	0294	ALL			7	1	1	100%	9.03			100%
3	MD	1002	240051007	1/1/2008	12/31/2010						91	61	67%
3	MD	1002	240330030	1/1/2008	12/31/2010						91	12	13%
3	MD	1002	240338003	1/1/2008	12/31/2010						91	76	84%
3	MD	1002	ALL			14	2	3	100%	5.01			75%
3	PA	0021	420030008	1/1/2008	12/31/2010						91	158	100%
3	PA	0021	420030064	1/1/2008	12/31/2010						91	152	100%

Attachment 2. 2008-2010 Collocated Precision Completeness at Site Level

Region	State	PQAO	Site ID	Start Date *	End Date *	# Routine Sites	# Required Collocated Sites	# Actual Collocated Sites	% Comp for # Sites in PQAO	CV Upper Bound	# Required Samples at Site	# Actual Samples at Site	% Comp for # Samples at Site and PQAO **
3	PA	0021	420031301	1/1/2008	12/31/2010						91	52	57%
3	PA	0021	ALL			5	1	3	100%	7.96			100%
3	PA	0851	420070014	1/1/2008	12/31/2010						91	47	52%
3	PA	0851	420710007	1/1/2008	12/31/2010						91	96	100%
3	PA	0851	421330008	1/1/2008	12/31/2010						91	162	100%
3	PA	0851	ALL			18	3	3	50%	11.51			84%
3	PA	0861	421010004	1/1/2008	12/31/2010						91	158	100%
3	PA	0861	ALL			5	1	1	100%	10.50			100%
3	VA	1127	510130020	1/1/2008	12/31/2010						91	309	100%
3	VA	1127	510870014	1/1/2008	12/31/2010						91	309	100%
3	VA	1127	517100024	1/1/2008	12/31/2010						91	179	100%
3	VA	1127	ALL			19	3	3	100%	4.00			100%
3	WV	1150	540090011	1/1/2008	12/31/2010						91	90	99%
3	WV	1150	540110006	1/1/2008	12/31/2010						91	75	82%
3	WV	1150	ALL			11	2	2	100%	5.44			91%
4	AL	0013	10730023	1/1/2008	12/31/2010						91	184	100%
4	AL	0013	10732003	1/1/2008	12/31/2010						91	181	100%
4	AL	0013	10735002	1/1/2008	12/31/2010						91	137	100%
4	AL	0013	10890014	1/1/2008	12/31/2010						91	174	100%
4	AL	0013	11130001	1/1/2008	12/31/2010						91	307	100%
4	AL	0013	ALL			16	4	5	83%	3.17			100%
4	FL	1328	120010023	1/1/2008	12/31/2010						91	82	90%
4	FL	1328	120111002	1/1/2008	12/31/2010						91	157	100%
4	FL	1328	120170005	1/1/2008	12/31/2010						91	71	78%
4	FL	1328	120310099	1/1/2008	12/31/2010						91	81	89%
4	FL	1328	120330004	1/1/2008	12/31/2010						91	89	98%
4	FL	1328	120570030	1/1/2008	1/20/2010						63	113	100%
4	FL	1328	120573002	1/1/2008	12/31/2010						91	37	41%
4	FL	1328	120710005	1/1/2008	12/31/2010						91	103	100%
4	FL	1328	120730012	1/1/2008	12/31/2010						91	123	100%
4	FL	1328	120861016	1/1/2008	12/31/2010						91	173	100%
4	FL	1328	120952002	1/1/2008	12/31/2010						91	89	98%
4	FL	1328	120990009	1/1/2008	12/31/2010						91	118	100%
4	FL	1328	120992005	1/1/2008	12/31/2010						91	53	58%
4	FL	1328	121030018	1/1/2008	12/31/2010						91	86	95%
4	FL	1328	121056006	1/1/2008	12/31/2010						91	89	98%
4	FL	1328	121111002	1/1/2008	12/31/2010						91	88	97%
4	FL	1328	121150013	1/1/2008	12/31/2010						91	97	100%
4	FL	1328	121171002	1/1/2008	12/31/2010						91	82	90%

Attachment 2. 2008-2010 Collocated Precision Completeness at Site Level

Region	State	PQAO	Site ID	Start Date *	End Date *	# Routine Sites	# Required Collocated Sites	# Actual Collocated Sites	% Comp for # Sites in PQAO	CV Upper Bound	# Required Samples at Site	# Actual Samples at Site	% Comp for # Samples at Site and PQAO **
4	FL	1328	ALL			28	4	18	100%	7.61			100%
4	GA	0437	130210007	1/1/2008	12/31/2010						91	97	100%
4	GA	0437	130510017	1/1/2008	12/31/2010						91	97	100%
4	GA	0437	130890002	1/1/2008	12/31/2010						91	67	74%
4	GA	0437	130892001	1/1/2008	12/31/2010						91	47	52%
4	GA	0437	131210032	1/1/2008	12/31/2010						91	290	100%
4	GA	0437	132450005	1/1/2008	12/31/2010						91	107	100%
4	GA	0437	ALL			28	5	6	67%	9.52			95%
4	KY	0584	210373002	1/1/2008	12/31/2010						91	50	55%
4	KY	0584	210930006	1/1/2008	12/31/2010						91	59	65%
4	KY	0584	211010014	1/1/2008	12/31/2010						91	92	100%
4	KY	0584	211110043	1/1/2008	12/31/2010						91	435	100%
4	KY	0584	211950002	1/1/2008	12/31/2010						91	143	100%
4	KY	0584	212270008	1/1/2008	12/31/2010						91	149	100%
4	KY	0584	ALL			20	3	6	100%	5.22			100%
4	MS	0703	280330002	1/1/2008	12/31/2010						91	101	100%
4	MS	0703	280670002	1/1/2008	12/31/2010						91	155	100%
4	MS	0703	280810005	1/1/2008	12/31/2010						91	45	49%
4	MS	0703	ALL			13	2	3	100%	6.89			100%
4	NC	001	370990006	1/1/2008	12/31/2010						91	138	100%
4	NC	001	ALL			1	1	1	100%	12.53			100%
4	NC	0776	370210034	1/1/2008	12/31/2010						91	200	100%
4	NC	0776	370350004	1/1/2008	12/31/2010						91	155	100%
4	NC	0776	370510009	1/1/2008	12/31/2010						91	57	63%
4	NC	0776	370670030	1/1/2008	12/31/2010						91	217	100%
4	NC	0776	370810013	1/1/2008	12/31/2010						91	154	100%
4	NC	0776	371110004	1/1/2008	12/31/2010						91	167	100%
4	NC	0776	371190042	1/1/2008	12/31/2010						91	169	100%
4	NC	0776	371230001	1/1/2008	12/31/2010						91	18	20%
4	NC	0776	371830014	1/1/2008	12/31/2010						91	218	100%
4	NC	0776	ALL			34	5	9	100%	8.19			100%
4	SC	0971	450450009	1/1/2008	12/31/2010						91	154	100%
4	SC	0971	450790019	1/1/2008	12/31/2010						91	151	100%
4	SC	0971	ALL			13	2	2	100%	5.06			100%
4	TN	1025	470370023	1/1/2008	12/31/2010						91	195	100%
4	TN	1025	470654002	1/1/2008	12/31/2010						91	334	100%
4	TN	1025	470931017	1/1/2008	12/31/2010						91	160	100%
4	TN	1025	471130006	1/1/2008	12/31/2010						91	340	100%

Attachment 2. 2008-2010 Collocated Precision Completeness at Site Level

Region	State	PQAO	Site ID	Start Date *	End Date *	# Routine Sites	# Required Collocated Sites	# Actual Collocated Sites	% Comp for # Sites in PQAO	CV Upper Bound	# Required Samples at Site	# Actual Samples at Site	% Comp for # Samples at Site and PQAO **
4	TN	1025	471570047	1/1/2008	12/31/2010						91	178	100%
4	TN	1025	471650007	1/1/2008	12/31/2010						91	352	100%
4	TN	1025	ALL			14	3	6	100%	8.39			100%
5	IL	0258	170310052	1/1/2008	12/31/2010						91	151	100%
5	IL	0258	170313301	1/1/2008	12/31/2010						91	140	100%
5	IL	0258	ALL			8	1	2	100%	12.29			100%
5	IL	0513	170314201	1/1/2008	12/31/2010						91	158	100%
5	IL	0513	171190024	1/1/2008	12/31/2010						91	151	100%
5	IL	0513	171193007	1/1/2008	12/31/2010						91	153	100%
5	IL	0513	171430037	1/1/2008	12/31/2010						91	160	100%
5	IL	0513	171670012	1/1/2008	12/31/2010						91	135	100%
5	IL	0513	ALL			30	5	5	63%	9.06			100%
5	IN	0520	180431004	1/1/2008	12/31/2010						91	156	100%
5	IN	0520	180890031	1/1/2008	12/31/2010						91	148	100%
5	IN	0520	180970081	1/1/2008	12/31/2010						91	167	100%
5	IN	0520	181410015	1/1/2008	12/31/2010						91	157	100%
5	IN	0520	181570008	1/1/2008	12/31/2010						91	143	100%
5	IN	0520	181630020	3/10/2009	12/31/2010						55	102	100%
5	IN	0520	ALL			35	5	6	50%	5.35			100%
5	MI	0685	260770008	1/1/2008	12/31/2010						91	130	100%
5	MI	0685	260810020	1/1/2008	12/31/2010						91	142	100%
5	MI	0685	261610008	1/1/2008	12/31/2010						91	142	100%
5	MI	0685	261630001	1/1/2008	12/31/2010						91	82	90%
5	MI	0685	261630033	1/1/2008	12/31/2010						91	54	59%
5	MI	0685	ALL			27	4	5	100%	6.02			98%
5	MI	W44	260330901	1/1/2008	12/31/2010						91	4	4%
5	MI	W44	ALL			3	1	1	100%	87.31			4%
5	MN	0700	271230866	1/1/2008	12/30/2009						61	53	87%
5	MN	0700	271230871	1/1/2008	12/31/2010						91	78	86%
5	MN	0700	271377550	1/1/2008	12/31/2010						91	92	100%
5	MN	0700	ALL			15	2	3	100%	5.22			93%
5	OH	0012	391530017	1/1/2008	12/31/2010						91	161	100%
5	OH	0012	ALL			4	2	1	50%	9.80			100%
5	OH	0151	391510017	1/1/2008	12/31/2010						91	167	100%
5	OH	0151	ALL			2	1	1	100%	4.42			100%
5	OH	0220	390950024	1/1/2008	12/31/2010						91	128	100%
5	OH	0220	ALL			3	2	1	50%	10.27			100%
5	OH	0229	390350038	1/1/2008	12/31/2010						91	91	100%

Attachment 2. 2008-2010 Collocated Precision Completeness at Site Level

Region	State	PQAO	Site ID	Start Date *	End Date *	# Routine Sites	# Required Collocated Sites	# Actual Collocated Sites	% Comp for # Sites in PQAO	CV Upper Bound	# Required Samples at Site	# Actual Samples at Site	% Comp for # Samples at Site and PQAO **
5	OH	0229	390350060	1/1/2008	12/31/2010						91	37	41%
5	OH	0229	ALL			7	1	2	100%	6.76			100%
5	OH	0287	391130032	1/1/2008	12/31/2010						91	142	100%
5	OH	0287	ALL			4	3	1	33%	4.17			100%
5	OH	0595	390850007	1/1/2009	12/31/2010						61	114	100%
5	OH	0595	ALL			1	1	1	100%	7.20			100%
5	OH	0634	390990005	1/1/2008	12/31/2010						91	170	100%
5	OH	0634	ALL			2	1	1	100%	4.24			100%
5	OH	0805	390490025	1/1/2008	12/31/2010						91	161	100%
5	OH	0805	ALL			3	1	1	100%	4.68			100%
5	OH	0807	390933002	1/1/2008	12/31/2010						91	167	100%
5	OH	0807	ALL			1	1	1	100%	7.87			100%
5	OH	0809	390811001	1/1/2008	12/31/2010						91	148	100%
5	OH	0809	ALL			3	1	1	100%	7.82			100%
5	OH	0880	391450013	1/1/2008	12/31/2010						91	141	100%
5	OH	0880	ALL			2	1	1	100%	13.84			100%
5	OH	1259	390170003	1/1/2008	12/31/2010						91	173	100%
5	OH	1259	390610014	1/1/2008	12/31/2010						91	171	100%
5	OH	1259	ALL			10	2	2	50%	5.17			100%
5	WI	1175	550030010	1/1/2008	12/31/2010						91	178	100%
5	WI	1175	550090005	1/1/2008	12/31/2010						91	85	93%
5	WI	1175	550410007	1/1/2008	12/31/2010						91	137	100%
5	WI	1175	550790026	1/1/2008	12/31/2010						91	87	96%
5	WI	1175	551110007	1/1/2008	12/31/2010						91	81	89%
5	WI	1175	ALL			21	4	5	100%	6.91			97%
6	AR	0055	50010011	1/1/2008	12/31/2010						91	166	100%
6	AR	0055	50450002	1/1/2008	12/31/2010						91	165	100%
6	AR	0055	51190007	1/1/2008	12/31/2010						91	167	100%
6	AR	0055	51310008	1/1/2008	12/31/2010						91	153	100%
6	AR	0055	ALL			16	3	4	100%	2.60			100%
6	LA	1001	220170008	1/1/2008	12/31/2010						91	71	78%
6	LA	1001	220330009	1/1/2008	12/31/2010						91	72	79%
6	LA	1001	221050001	1/1/2008	12/31/2010						91	74	81%
6	LA	1001	ALL			15	2	3	100%	8.88			80%
6	NM	0017	350010023	1/1/2008	12/31/2010						91	152	100%
6	NM	0017	ALL			2	1	1	100%	9.45			100%
6	NM	0765	350450019	10/1/2008	12/31/2010						68	205	100%
6	NM	0765	ALL			8	1	1	100%	8.32			100%

Attachment 2. 2008-2010 Collocated Precision Completeness at Site Level

Region	State	PQAO	Site ID	Start Date *	End Date *	# Routine Sites	# Required Collocated Sites	# Actual Collocated Sites	% Comp for # Sites in PQAO	CV Upper Bound	# Required Samples at Site	# Actual Samples at Site	% Comp for # Samples at Site and PQAO **
6	OK	807	400159008	1/1/2008	12/31/2010						91	155	100%
6	OK	807	ALL			1	1	1	100%	8.82			100%
6	OK	812	401090035	1/1/2008	12/31/2010						91	181	100%
6	OK	812	ALL			7	1	1	100%	8.88			100%
6	OK	905	401359015	1/1/2008	4/26/2010						71	114	100%
6	OK	905	ALL			1	1	1	100%	10.05			100%
6	OK	920	401159004	1/1/2008	9/29/2010						84	159	100%
6	OK	920	ALL			1	1	1	100%	4.72			100%
6	TX	1035	481130069	1/1/2008	12/31/2010						91	173	100%
6	TX	1035	482011035	1/1/2008	12/31/2010						91	146	100%
6	TX	1035	483550032	1/1/2008	12/31/2010						91	137	100%
6	TX	1035	484391002	1/1/2008	12/31/2010						91	29	32%
6	TX	1035	ALL			15	2	4	100%	7.38			100%
7	IA	0613	191130037	1/1/2008	12/31/2010						91	336	100%
7	IA	0613	ALL			2	1	1	100%	5.94			100%
7	IA	0874	191530030	1/1/2008	12/31/2010						91	166	100%
7	IA	0874	ALL			2	1	1	100%	8.47			100%
7	IA	1080	191390015	1/1/2008	12/31/2010						91	111	100%
7	IA	1080	191630015	1/1/2008	12/31/2010						91	161	100%
7	IA	1080	ALL			9	1	2	100%	8.53			100%
7	KS	0563	201730010	1/1/2008	12/31/2010						91	165	100%
7	KS	0563	202090021	1/1/2008	12/31/2010						91	161	100%
7	KS	0563	ALL			10	2	2	100%	6.47			100%
7	MO	0588	290770032	1/1/2008	12/31/2010						91	105	100%
7	MO	0588	290950034	1/1/2008	9/30/2009						53	47	89%
7	MO	0588	291892003	1/1/2008	6/30/2009						46	46	100%
7	MO	0588	295100085	1/1/2008	12/31/2010						91	94	100%
7	MO	0588	ALL			11	2	4	100%	3.88			100%
7	NE	0752	311090022	1/1/2008	12/31/2010						91	156	100%
7	NE	0752	ALL			3	1	1	100%	9.70			100%
7	NE	0816	310550019	1/1/2008	9/30/2009						53	43	81%
7	NE	0816	ALL			4	1	1	100%	16.40			81%
8	CO	0240	80010006	1/1/2008	12/31/2010						91	174	100%
8	CO	0240	80310002	1/1/2008	12/31/2010						91	184	100%
8	CO	0240	ALL			13	3	2	50%	7.01			100%
8	CO	750	80677001	6/17/2009	12/31/2010						47	59	100%
8	CO	750	ALL			2	1	1	100%	5.54			100%
8	MT	0730	300530018	1/1/2008	12/31/2010						91	82	90%

Attachment 2. 2008-2010 Collocated Precision Completeness at Site Level

Region	State	PQAO	Site ID	Start Date *	End Date *	# Routine Sites	# Required Collocated Sites	# Actual Collocated Sites	% Comp for # Sites in PQAO	CV Upper Bound	# Required Samples at Site	# Actual Samples at Site	% Comp for # Samples at Site and PQAO **
8	MT	0730	300630031	1/1/2008	12/31/2010						91	82	90%
8	MT	0730	ALL			13	2	2	100%	4.87			90%
8	ND	0782	380150003	1/1/2008	12/31/2010						91	410	100%
8	ND	0782	380171004	1/1/2008	12/31/2010						91	82	90%
8	ND	0782	380570004	1/1/2008	12/31/2010						91	26	29%
8	ND	0782	ALL			4	1	3	100%	17.14			100%
8	SD	0973	460990006	1/1/2008	12/31/2010						91	59	65%
8	SD	0973	461031001	1/1/2008	12/31/2010						91	95	100%
8	SD	0973	ALL			7	2	2	50%	9.37			82%
8	UT	1113	490050004	1/1/2008	12/31/2010						91	140	100%
8	UT	1113	490353010	1/1/2008	12/31/2010						91	114	100%
8	UT	1113	490494001	1/1/2008	12/31/2010						91	135	100%
8	UT	1113	ALL			9	2	3	50%	9.85			100%
8	WY	1188	560210001	1/1/2008	12/31/2010						91	105	100%
8	WY	1188	560330002	1/1/2008	12/31/2010						91	179	100%
8	WY	1188	ALL			8	1	2	100%	8.83			100%
9	AZ	0053	40139997	1/1/2008	12/31/2010						91	188	100%
9	AZ	0053	40230004	1/1/2008	12/31/2010						91	165	100%
9	AZ	0053	ALL			6	2	2	100%	7.64			100%
9	AZ	615	40137020	1/1/2008	12/31/2010						91	170	100%
9	AZ	615	ALL			1	1	1	100%	9.47			100%
9	AZ	0643	40130019	1/1/2008	12/31/2010						91	87	96%
9	AZ	0643	ALL			3	1	1	100%	8.72			96%
9	AZ	780	40011235	1/1/2008	12/31/2010						91	120	100%
9	AZ	780	ALL			1	1	1	100%	13.70			100%
9	AZ	0864	40191028	1/1/2008	12/31/2010						91	79	87%
9	AZ	0864	ALL			2	1	1	100%	18.76			87%
9	AZ	0865	40210001	1/1/2008	12/31/2010						91	117	100%
9	AZ	0865	ALL			3	2	1	50%	10.31			100%
9	CA	0086	60130002	1/1/2008	12/31/2010						91	145	100%
9	CA	0086	60531003	1/1/2008	12/27/2009						61	69	100%
9	CA	0086	ALL			14	3	2	75%	6.13			100%
9	CA	0145	60190008	1/1/2008	12/31/2010						91	183	100%
9	CA	0145	60271003	1/1/2008	12/31/2010						91	67	74%
9	CA	0145	60290014	1/1/2008	12/31/2010						91	154	100%
9	CA	0145	60571001	1/1/2008	12/31/2010						91	159	100%
9	CA	0145	60670006	1/1/2008	12/31/2010						91	90	99%
9	CA	0145	60710306	1/1/2008	12/31/2010						91	136	100%

Attachment 2. 2008-2010 Collocated Precision Completeness at Site Level

Region	State	PQAO	Site ID	Start Date *	End Date *	# Routine Sites	# Required Collocated Sites	# Actual Collocated Sites	% Comp for # Sites in PQAO	CV Upper Bound	# Required Samples at Site	# Actual Samples at Site	% Comp for # Samples at Site and PQAO **
9	CA	0145	60798001	1/1/2008	3/27/2010						68	123	100%
9	CA	0145	61110007	1/1/2008	12/31/2010						91	180	100%
9	CA	0145	ALL			38	6	8	67%	11.61			86%
9	CA	577	60731011	1/1/2008	12/31/2010						91	77	85%
9	CA	577	ALL			1	1	1	100%	13.26			85%
9	CA	0942	60250005	1/1/2008	12/31/2010						91	126	100%
9	CA	0942	60730006	1/1/2008	12/31/2010						91	72	79%
9	CA	0942	ALL			10	2	2	100%	11.52			90%
9	CA	0972	60371103	1/1/2008	12/31/2010						91	161	100%
9	CA	0972	60652002	1/1/2008	12/31/2010						91	143	100%
9	CA	0972	60658001	1/1/2008	12/31/2010						91	162	100%
9	CA	0972	ALL			20	3	3	100%	5.42			100%
9	NV	0226	320030561	1/1/2008	12/31/2010						91	166	100%
9	NV	0226	ALL			3	1	1	100%	10.40			100%
9	NV	1138	320310016	1/1/2008	12/31/2010						91	356	100%
9	NV	1138	ALL			1	1	1	100%	3.75			100%
10	AK	0015	20900010	1/1/2008	12/31/2010						91	169	100%
10	AK	0015	ALL			4	1	1	100%	7.43			100%
10	ID	180	160050020	4/3/2008	8/30/2010						73	130	100%
10	ID	180	ALL			1	1	1	100%	13.17			100%
10	ID	0511	160790017	1/1/2008	12/31/2010						91	160	100%
10	ID	0511	ALL			7	2	1	50%	6.04			100%
10	OR	0821	410290133	1/1/2008	12/31/2010						91	85	93%
10	OR	0821	410390060	1/1/2008	12/31/2010						91	89	98%
10	OR	0821	410670004	1/1/2008	12/31/2010						91	9	10%
10	OR	0821	ALL			19	3	3	50%	6.36			67%
10	WA	1136	530330057	1/1/2008	12/30/2009						61	54	89%
10	WA	1136	530530029	1/1/2008	12/31/2010						91	15	16%
10	WA	1136	530630021	3/29/2009	12/31/2010						54	49	91%
10	WA	1136	ALL			8	1	3	100%	6.36			91%

* Start and End Dates denote time period that monitor was primary and reporting data. Start Date defined as >= 1/1/2008. End Date defined as <=12/31/2010.

** % Complete at PQAO level averages site-level % complete for # collocated sites required for PQAO, averaging the largest available site-level % complete.

Attachment 3

2008-2010 PM_{2.5} Precision Completeness and 3-Year Precision Summary by Primary Quality Assurance Organization Level and EPA Region

Notes

The attached information is derived from Attachment 2 and is simply summarized by Primary Quality Assurance Organization and EPA Region.

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Attachment 3. 2008–2010 Collocated Precision Completeness and Precision Estimates at PQAQ Level

Summary of 2020 Selected Sites Completion and Action Estimates for 2020							% Comp for #
Region	State	PQAO	# Routine Sites	# Required Collocated Sites	# Actual Collocated Sites	CV Upper Bound *	Samples at Site and PQAO
1	CT	0251	12	2	2	10.48	100%
1	MA	0660	15	2	3	8.27	100%
1	ME	0635	6	1	1	8.04	90%
1	NH	0762	4	2	3	7.56	100%
1	RI	0907	4	2	3	6.87	64%
1	VT	1119	4	1	1	4.34	100%
Region 1 Summary			45	10	13	7.81	92%
2	NJ	0764	19	3	2	9.49	100%
2	NY	0768	25	4	3	5.68	100%
2	PR	0889	7	1	1	7.58	70%
2	VI	1124	1	1	1	36.95	84%
Region 2 Summary			52	9	7	7.74 *	88%
3	DC	0350	3	1	1	5.84	100%
3	DE	0294	7	1	1	9.03	100%
3	MD	1002	14	2	3	5.01	75%
3	PA	0021	5	1	3	7.96	100%
3	PA	0851	18	3	3	11.51	84%
3	PA	0861	5	1	1	10.50	100%
3	VA	1127	19	3	3	4.00	100%
3	WV	1150	11	2	2	5.44	91%
Region 3 Summary			82	14	17	7.84	94%
4	AL	0013	16	4	5	3.17	100%
4	FL	1328	28	4	18	7.61	100%
4	GA	0437	28	5	6	9.52	95%
4	KY	0584	20	3	6	5.22	100%
4	MS	0703	13	2	3	6.89	100%
4	NC	001	1	1	1	12.53	100%
4	NC	0776	34	5	9	8.19	100%
4	SC	0971	13	2	2	5.06	100%
4	TN	1025	14	3	6	8.39	100%
Region 4 Summary			167	29	56	7.84	99%
5	IL	0258	8	1	2	12.29	100%
5	IL	0513	30	5	5	9.06	100%
5	IN	0520	35	5	6	5.35	100%
5	MI	0685	27	4	5	6.02	98%
5	MI	W44	3	1	1	87.31	4%
5	MN	0700	15	2	3	5.22	93%
5	OH	0012	4	2	1	9.80	100%
5	OH	0151	2	1	1	4.42	100%
5	OH	0220	3	2	1	10.27	100%
5	OH	0229	7	1	2	6.76	100%
5	OH	0287	4	3	1	4.17	100%
5	OH	0595	1	1	1	7.20	100%
5	OH	0634	2	1	1	4.24	100%
5	OH	0805	3	1	1	4.68	100%
5	OH	0807	1	1	1	7.87	100%
5	OH	0809	3	1	1	7.82	100%
5	OH	0880	2	1	1	13.84	100%
5	OH	1259	10	2	2	5.17	100%
5	WI	1175	21	4	5	6.91	97%
Region 5 Summary			181	39	41	7.78 *	94%
6	AR	0055	16	3	4	2.60	100%

Attachment 3. 2008–2010 Collocated Precision Completeness and Precision Estimates at PQAQ Level

Summary of 2020-2021 Sampling Completion and Quality Assurance Data by Region							% Comp for #
Region	State	PQAO	# Routine Sites	# Required Collocated Sites	# Actual Collocated Sites	CV Upper Bound *	Samples at Site and PQAO
6	LA	1001	15	2	3	8.88	80%
6	NM	0017	2	1	1	9.45	100%
6	NM	0765	8	1	1	8.32	100%
6	OK	807	1	1	1	8.82	100%
6	OK	0812	7	1	1	8.88	100%
6	OK	905	1	1	1	10.05	100%
6	OK	920	1	1	1	4.72	100%
6	TX	1035	15	2	4	7.38	100%
Region 6 Summary			66	13	17	8.02	98%
7	IA	0613	2	1	1	5.94	100%
7	IA	0874	2	1	1	8.47	100%
7	IA	1080	9	1	2	8.53	100%
7	KS	0563	10	2	2	6.47	100%
7	MO	0588	11	2	4	3.88	100%
7	NE	0752	3	1	1	9.70	100%
7	NE	0816	4	1	1	16.40	81%
Region 7 Summary			41	9	12	9.26	97%
8	CO	0240	13	3	2	7.01	100%
8	CO	750	2	1	1	5.54	100%
8	MT	0730	13	2	2	4.87	90%
8	ND	0782	4	1	3	17.14	100%
8	SD	0973	7	2	2	9.37	82%
8	UT	1113	9	2	3	9.85	100%
8	WY	1188	8	1	2	8.83	100%
Region 8 Summary			56	12	15	9.71	96%
9	AZ	0053	6	2	2	7.64	100%
9	AZ	615	1	1	1	9.47	100%
9	AZ	0643	3	1	1	8.72	96%
9	AZ	780	1	1	1	13.70	100%
9	AZ	0864	2	1	1	18.76	87%
9	AZ	0865	3	2	1	10.31	100%
9	CA	0086	14	3	2	6.13	100%
9	CA	0145	38	6	8	11.61	86%
9	CA	577	1	1	1	13.26	85%
9	CA	0942	10	2	2	11.52	90%
9	CA	0972	20	3	3	5.42	100%
9	NV	0226	3	1	1	10.40	100%
9	NV	1138	1	1	1	3.75	100%
Region 9 Summary			103	25	25	10.75	96%
10	AK	0015	4	1	1	7.43	100%
10	ID	180	1	1	1	13.17	100%
10	ID	0511	7	2	1	6.04	100%
10	OR	0821	19	3	3	6.36	67%
10	WA	1136	8	1	3	6.36	91%
Region 10 Summary			39	8	9	8.32	92%

* Regional CV estimate excludes large PQAQ-level CV estimate.

Attachments 4A, B, and C**2008-2010 PM_{2.5} Flow Rate Completeness of SLAMS and Tribal Monitors
with Aggregation by Primary Quality Assurance Organization (PQAO) and
Average Flow Rate % Difference by PQAO****Notes**

The flow rate requirement is that every sampler (SLAMS or Tribal monitor) be audited 2 times a year. The flow rate estimate for each site was based on the sampler start and end dates. If a site was operating for the complete 3 years, then 6 audits are required and the completeness would be based on the number of audits submitted divided by 6. For any samplers not operating for the 3-year period the flow rate completeness would be based on the quarters the samplers operated (start and end date).

The table provides estimates of the audits performed each year for each SLAM or Tribal site and is also aggregated at the Primary Quality Assurance Organization (PQAO) level. Missing spaces in the table indicate that the sampler for the site had not operated in that year.

Since some PQAOs reported flow rate data under the SLAMS or Tribal monitor type for samplers with pollutant occurrence codes (POCs) higher than POC-1, there are 2 tables attached. Attachment 4A represents samplers listed as POC-1 and Attachment 4B represents samplers with POCs greater than POC-1.

Table 4c provides an estimate of the average 3-year percent difference of all the flow rate audits for a given PQAO. Ninety nine percent of the individual audits were within 5% of the design value.

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Region	State	PQAO	Monitor Type	Site ID	POC	2008 Required	2008 Submitted	2008 % Complete	2009 Required	2009 Submitted	2009 % Complete	2010 Required	2010 Submitted	2010 % Complete	3 Year comp %
01	CT	0251	NCORE	090050005	1	2	4	100	2	2	100	2	2	100	
01	CT	0251	NCORE	090090027	1	2	4	100	2	2	100	2	2	100	
01	CT	0251	SLAMS	090010010	1	2	4	100	2	2	100	2	2	100	
01	CT	0251	SLAMS	090011123	1	2	4	100	2	2	100	2	2	100	
01	CT	0251	SLAMS	090031003	1	2	4	100	2	3	100	2	2	100	
01	CT	0251	SLAMS	090032006	1	2	4	100	2	2	100	2	2	100	
01	CT	0251	SLAMS	090091123	1	2	4	100	2	2	100	2	2	100	
01	CT	0251	SLAMS	090092008	1	2	4	100	2	2	100	1	1	100	
01	CT	0251	SLAMS	090092123	1	2	4	100	2	2	100	2	2	100	
01	CT	0251	SLAMS	090113002	1	2	4	100	2	2	100	2	2	100	
01	CT	0251	SPECIAL PURPOSE	090019003	1	2	4	100	2	2	100	2	2	100	
01	CT	0251	SPECIAL PURPOSE	090050004	1	2	4	100	2	2	100	2	2	100	
01	CT	0251	SPECIAL PURPOSE	090090026	1	2	4	100	2	3	100	1	1	100	
01	CT	All	All Sites					100			100			100	100
01	MA	0660	NCORE	250250042	1	2	4	100	2	4	100	2	2	100	
01	MA	0660	SLAMS	250035001	1	2	4	100	2	4	100	2	2	100	
01	MA	0660	SLAMS	250051004	1	2	4	100	2	4	100	2	2	100	
01	MA	0660	SLAMS	250092006	1	2	4	100	2	4	100	2	3	100	
01	MA	0660	SLAMS	250095005	1	2	4	100	2	5	100	2	2	100	
01	MA	0660	SLAMS	250096001	1	2	4	100	2	4	100	2	2	100	
01	MA	0660	SLAMS	250130008	1	2	4	100	2	3	100	2	2	100	
01	MA	0660	SLAMS	250130016	1	2	4	100	2	4	100	2	2	100	
01	MA	0660	SLAMS	250132009	1	2	4	100	2	4	100	2	2	100	
01	MA	0660	SLAMS	250230004	1	2	4	100	2	4	100	2	2	100	
01	MA	0660	SLAMS	250250002	1	2	4	100	2	4	100	2	2	100	
01	MA	0660	SLAMS	250250027	1	2	4	100	2	4	100	2	2	100	
01	MA	0660	SLAMS	250250043	1	2	4	100	2	4	100	2	2	100	
01	MA	0660	SLAMS	250270016	1	2	4	100	2	4	100	2	2	100	
01	MA	0660	SLAMS	250270023	1	2	4	100	2	4	100	2	2	100	
01	MA	All	All Sites					100			100			100	100
01	ME	0635	NCORE	230090103	1	2	4	100	2	3	100	2	4	100	
01	ME	0635	SLAMS	230010011	1	2	4	100	2	3	100	2	3	100	
01	ME	0635	SLAMS	230030013	1	2	4	100	1	2	100				
01	ME	0635	SLAMS	230030014	1				1	2	100	2	4	100	
01	ME	0635	SLAMS	230031011	1	2	4	100	2	4	100	2	4	100	
01	ME	0635	SLAMS	230190002	1	2	4	100	2	4	100	2	4	100	
01	ME	0635	SPECIAL PURPOSE	230031008	1	2	4	100	2	1	50	2	0	0	
01	ME	0635	SPECIAL PURPOSE	230050029	1	2	4	100	2	3	100	2	4	100	
01	ME	0635	SPECIAL PURPOSE	230172011	1	2	4	100	2	3	100	2	4	100	
01	ME	0635	SPECIAL PURPOSE	230210004	1	2	4	100	2	4	100	2	4	100	
01	ME	All	All Sites					100			95			88	94
01	NH	0762	SLAMS	330012004	1	2	4	100	2	4	100	2	4	100	
01	NH	0762	SLAMS	330050007	1	2	4	100	2	4	100	2	4	100	
01	NH	0762	SLAMS	330090010	1	2	4	100							
01	NH	0762	SLAMS	330111015	1	2	4	100	2	4	100	2	4	100	
01	NH	0762	SLAMS	330131006	1	2	4	100	2	4	100	2	4	100	
01	NH	0762	SLAMS	330190003	1	2	4	100							

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Region	State	PQAO	Monitor Type	Site ID	POC	2008 Required	2008 Submitted	2008 % Complete	2009 Required	2009 Submitted	2009 % Complete	2010 Required	2010 Submitted	2010 % Complete	3 Year comp %
01	NH	All	All Sites					100			100			100	100
01	RI	0907	NCORE	440071010	1	2	2	100	2	2	100	2	2	100	
01	RI	0907	SLAMS	440030002	1	2	2	100	2	0	0	2	0	0	
01	RI	0907	SLAMS	440070022	1	2	2	100	2	3	100	2	2	100	
01	RI	0907	SLAMS	440070026	1	2	2	100	2	2	100	2	1	50	
01	RI	0907	SLAMS	440070028	1	2	2	100	2	2	100	2	2	100	
01	RI	All	All Sites					100			80			70	83
01	VT	1119	NCORE	500070007	1	2	4	100	2	3	100	2	4	100	
01	VT	1119	SLAMS	500030004	1	2	3	100	2	4	100	2	3	100	
01	VT	1119	SLAMS	500070012	1	2	4	100	2	3	100	2	4	100	
01	VT	1119	SLAMS	500210002	1	2	4	100	2	3	100	2	3	100	
01	VT	All	All Sites					100			100			100	100
02	NJ	0764	NCORE	340130003	1				2	3	100	2	4	100	
02	NJ	0764	SLAMS	340010006	1	2	2	100	2	4	100	2	4	100	
02	NJ	0764	SLAMS	340011006	1	2	5	100	2	4	100	2	4	100	
02	NJ	0764	SLAMS	340030003	1	2	4	100	2	4	100	2	4	100	
02	NJ	0764	SLAMS	340070003	1	2	3	100							
02	NJ	0764	SLAMS	340071007	1	2	6	100	2	4	100	2	4	100	
02	NJ	0764	SLAMS	340130015	1	1	5	100							
02	NJ	0764	SLAMS	340150004	1	2	3	100	2	4	100	2	4	100	
02	NJ	0764	SLAMS	340171003	1	2	6	100	2	4	100	2	4	100	
02	NJ	0764	SLAMS	340172002	1	2	3	100	2	4	100	2	4	100	
02	NJ	0764	SLAMS	340210008	1	2	4	100	2	4	100	2	4	100	
02	NJ	0764	SLAMS	340218001	1	2	3	100	2	4	100	2	4	100	
02	NJ	0764	SLAMS	340230006	1	2	6	100	2	4	100	2	4	100	
02	NJ	0764	SLAMS	340270004	1	2	6	100	2	4	100	2	4	100	
02	NJ	0764	SLAMS	340273001	1	2	6	100	2	4	100	2	6	100	
02	NJ	0764	SLAMS	340292002	1	2	6	100	2	4	100	2	4	100	
02	NJ	0764	SLAMS	340310005	1	2	4	100	2	4	100	2	4	100	
02	NJ	0764	SLAMS	340390004	1	2	3	100	2	4	100	2	6	100	
02	NJ	0764	SLAMS	340390006	1	2	4	100	2	4	100	2	4	100	
02	NJ	0764	SLAMS	340392003	1	2	5	100	2	4	100	2	6	100	
02	NJ	0764	SLAMS	340410006	1	2	6	100	2	4	100	2	4	100	
02	NJ	0764	SLAMS	340410007	1							1	1	100	
02	NJ	All	All Sites					100			100			100	100
02	NY	0768	NCORE	360551007	1	2	13	100	2	10	100	2	11	100	
02	NY	0768	NCORE	360810124	1	2	13	100	2	15	100	2	13	100	
02	NY	0768	NCORE	361010003	1	2	14	100	2	12	100	2	15	100	
02	NY	0768	SLAMS	360010005	1	2	14	100	2	17	100	2	11	100	
02	NY	0768	SLAMS	360010012	1	2	13	100	2	8	100	2	12	100	
02	NY	0768	SLAMS	360050080	1	2	11	100	2	13	100	2	14	100	
02	NY	0768	SLAMS	360050110	1	2	13	100	2	14	100	2	7	100	
02	NY	0768	SLAMS	360050133	1	2	13	100	2	13	100	2	15	100	
02	NY	0768	SLAMS	360130011	1	2	13	100	2	12	100	2	12	100	
02	NY	0768	SLAMS	360290005	1	2	14	100	2	12	100	2	12	100	
02	NY	0768	SLAMS	360291007	1	2	13	100	2	12	100	2	12	100	
02	NY	0768	SLAMS	360310003	1	2	14	100	2	11	100	2	11	100	

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Region	State	PQAO	Monitor Type	Site ID	POC	2008 Required	2008 Submitted	2008 % Complete	2009 Required	2009 Submitted	2009 % Complete	2010 Required	2010 Submitted	2010 % Complete	3 Year comp %
02	NY	0768	SLAMS	360470122	1	2	12	100	2	12	100	2	14	100	
02	NY	0768	SLAMS	360590008	1	2	11	100	2	14	100	2	13	100	
02	NY	0768	SLAMS	360610056	1	1	3	100							
02	NY	0768	SLAMS	360610079	1	2	9	100	2	13	100	2	14	100	
02	NY	0768	SLAMS	360610128	1	2	5	100	2	12	100	2	14	100	
02	NY	0768	SLAMS	360610134	1	2	10	100	2	14	100	2	14	100	
02	NY	0768	SLAMS	360632008	1	2	12	100	2	12	100	2	11	100	
02	NY	0768	SLAMS	360671015	1	2	13	100	2	14	100	2	12	100	
02	NY	0768	SLAMS	360710002	1	2	13	100	2	12	100	2	12	100	
02	NY	0768	SLAMS	360850055	1	2	13	100	2	13	100	2	13	100	
02	NY	0768	SLAMS	360850067	1	2	12	100	2	13	100	2	13	100	
02	NY	0768	SLAMS	360893001	1	2	13	100	2	9	100				
02	NY	0768	SLAMS	361030002	1	2	13	100	2	11	100	2	11	100	
02	NY	0768	SLAMS	361191002	1	2	12	100	2	15	100	2	14	100	
02	NY	All	All Sites					100			100			100	100
02	PR	0889	SLAMS	720010002	1	2	3	100	2	2	100	2	0	0	
02	PR	0889	SLAMS	720530003	1	2	4	100	2	3	100	2	2	100	
02	PR	0889	SLAMS	720570008	1	2	3	100	2	3	100	2	2	100	
02	PR	0889	SLAMS	720590016	1	2	3	100	2	1	50	2	0	0	
02	PR	0889	SLAMS	720610005	1	2	5	100	2	3	100	2	2	100	
02	PR	0889	SLAMS	721130004	1	2	3	100	2	2	100	2	2	100	
02	PR	0889	SLAMS	721270003	1	2	4	100	2	2	100	2	0	0	
02	PR	All	All Sites					100			92			57	83
03	DC	0350	SLAMS	110010041	1	2	4	100	2	4	100	2	4	100	
03	DC	0350	SLAMS	110010042	1	2	4	100	2	4	100	2	4	100	
03	DC	0350	SLAMS	110010043	1	2	4	100	2	4	100	2	4	100	
03	DC	All	All Sites					100			100			100	100
03	DE	0294	NCORE	100032004	1	2	2	100	2	2	100	2	2	100	
03	DE	0294	SLAMS	100010002	1	2	2	100	2	2	100	2	2	100	
03	DE	0294	SLAMS	100010003	1	2	2	100	2	2	100	2	2	100	
03	DE	0294	SLAMS	100031003	1	2	2	100	2	2	100	2	2	100	
03	DE	0294	SLAMS	100031007	1	2	3	100	2	1	50	2	2	100	
03	DE	0294	SLAMS	100031012	1	2	2	100	2	2	100	2	2	100	
03	DE	0294	SLAMS	100051002	1	2	2	100	2	2	100	2	2	100	
03	DE	All	All Sites					100			92			100	97
03	MD	1002	NCORE	240230002	3							1	2	100	
03	MD	1002	NCORE	240330030	1	2	3	100	2	2	100	2	2	100	
03	MD	1002	SLAMS	240031003	1	2	4	100	2	4	100	2	2	100	
03	MD	1002	SLAMS	240051007	1	2	4	100	2	1	50	2	2	100	
03	MD	1002	SLAMS	240053001	1	2	10	100	2	6	100	2	2	100	
03	MD	1002	SLAMS	240150003	1	2	4	100	2	3	100	1	1	100	
03	MD	1002	SLAMS	240251001	1	2	4	100	2	3	100	2	2	100	
03	MD	1002	SLAMS	240290002	3							1	2	100	
03	MD	1002	SLAMS	240313001	1	2	3	100	2	2	100	1	1	100	
03	MD	1002	SLAMS	240330025	1	2	3	100	2	2	100	2	2	100	

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Region	State	PQAO	Monitor Type	Site ID	POC	2008 Required	2008 Submitted	2008 % Complete	2009 Required	2009 Submitted	2009 % Complete	2010 Required	2010 Submitted	2010 % Complete	3 Year comp %
03	MD	1002	SLAMS	240338003	1	2	4	100	2	2	100	2	2	100	
03	MD	1002	SLAMS	240430009	1	2	4	100	2	2	100	1	1	100	
03	MD	1002	SLAMS	245100006	1	2	4	100	2	3	100	2	3	100	
03	MD	1002	SLAMS	245100007	1	2	5	100	2	3	100	2	2	100	
03	MD	1002	SLAMS	245100008	1	2	4	100	2	3	100	2	2	100	
03	MD	1002	SLAMS	245100035	1	2	8	100							
03	MD	1002	SLAMS	245100040	1	2	8	100	2	5	100	2	2	100	
03	MD	All	All Sites					100			96			100	99
03	PA	0021	NCORE	420030008	1	2	12	100	2	12	100	2	12	100	
03	PA	0021	SLAMS	420030064	1	2	12	100	2	12	100	2	12	100	
03	PA	0021	SLAMS	420030067	1	2	13	100	2	12	100	2	12	100	
03	PA	0021	SLAMS	420031008	1	2	12	100	2	12	100	2	12	100	
03	PA	0021	SLAMS	420031301	1	2	12	100	2	12	100	2	12	100	
03	PA	0021	SPECIAL PURPOSE	420030002	3							2	2	100	
03	PA	0021	SPECIAL PURPOSE	420030093	1	2	0	0	2	11	100	2	12	100	
03	PA	0021	SPECIAL PURPOSE	420030095	1	2	0	0	2	12	100	2	12	100	
03	PA	0021	SPECIAL PURPOSE	420033007	1	2	11	100	2	12	100	2	12	100	
03	PA	0851	SLAMS	420010001	1	2	2	100	1	1	100				
03	PA	0851	SLAMS	420010001	3				1	1	100	2	2	100	
03	PA	0851	SLAMS	420050001	3				1	1	100	2	2	100	
03	PA	0851	SLAMS	420070014	1	2	2	100	2	2	100	2	2	100	
03	PA	0851	SLAMS	420110011	1	2	2	100	2	2	100	2	2	100	
03	PA	0851	SLAMS	420170012	1	2	2	100	2	2	100	2	2	100	
03	PA	0851	SLAMS	420210011	1	2	2	100	2	2	100	2	2	100	
03	PA	0851	SLAMS	420270100	1	2	2	100	2	2	100	2	2	100	
03	PA	0851	SLAMS	420290100	3				1	1	100	2	2	100	
03	PA	0851	SLAMS	420410101	1	2	2	100	2	2	100	2	2	100	
03	PA	0851	SLAMS	420430401	1	2	2	100							
03	PA	0851	SLAMS	420430401	3				2	2	100	2	2	100	
03	PA	0851	SLAMS	420450002	1	2	2	100	2	0	0	2	0	0	
03	PA	0851	SLAMS	420450002	3				2	2	100	2	2	100	
03	PA	0851	SLAMS	420490003	1	2	2	100	1	1	100				
03	PA	0851	SLAMS	420490003	3				1	1	100	2	2	100	
03	PA	0851	SLAMS	420692006	1	2	2	100	1	1	100				
03	PA	0851	SLAMS	420692006	3				1	1	100	2	2	100	
03	PA	0851	SLAMS	420710007	1	2	2	100	2	2	100	2	2	100	
03	PA	0851	SLAMS	420850100	1	2	2	100	2	2	100	2	2	100	
03	PA	0851	SLAMS	420910013	1	2	2	100	2	2	100	2	2	100	
03	PA	0851	SLAMS	420950025	1	2	2	100	1	1	100				
03	PA	0851	SLAMS	420950025	3				1	1	100	2	2	100	
03	PA	0851	SLAMS	420950027	1							2	2	100	
03	PA	0851	SLAMS	421250005	1	2	2	100	1	0	0				
03	PA	0851	SLAMS	421250005	3				2	2	100	2	2	100	
03	PA	0851	SLAMS	421250200	1	2	2	100	2	2	100	2	2	100	
03	PA	0851	SLAMS	421255001	1	2	2	100	1	1	100				

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Region	State	PQAO	Monitor Type	Site ID	POC	2008 Required	2008 Submitted	2008 % Complete	2009 Required	2009 Submitted	2009 % Complete	2010 Required	2010 Submitted	2010 % Complete	3 Year comp %
03	PA	0851	SLAMS	421255001	3				1	1	100	2	2	100	
03	PA	0851	SLAMS	421290008	1	2	2	100	1	1	100				
03	PA	0851	SLAMS	421290008	3				1	1	100	2	2	100	
03	PA	0851	SLAMS	421330008	1	2	2	100	2	2	100	2	2	100	
03	PA	0861	SLAMS	421010004	1	2	3	100	2	4	100	2	4	100	
03	PA	0861	SLAMS	421010024	1	2	4	100	2	5	100	2	4	100	
03	PA	0861	SLAMS	421010047	1	2	3	100	2	9	100	2	4	100	
03	PA	0861	SLAMS	421010055	1	2	4	100	2	4	100	2	4	100	
03	PA	0861	SLAMS	421010057	1	2	4	100	2	5	100	2	4	100	
03	PA	All	All Sites					93			95			97	95
03	VA	1127	NCORE	510870014	1	2	2	100	2	2	100	2	2	100	
03	VA	1127	SLAMS	510030001	1	2	2	100	2	2	100	2	2	100	
03	VA	1127	SLAMS	510130020	1	2	3	100	2	2	100	2	3	100	
03	VA	1127	SLAMS	510360002	1	2	2	100	2	3	100	2	3	100	
03	VA	1127	SLAMS	510410003	1	2	2	100	2	2	100	2	2	100	
03	VA	1127	SLAMS	510590030	1	2	2	100	2	2	100	2	2	100	
03	VA	1127	SLAMS	510591005	1	2	4	100	2	2	100	1	1	100	
03	VA	1127	SLAMS	510595001	1	2	4	100	2	2	100	1	1	100	
03	VA	1127	SLAMS	510690010	1	2	2	100	2	2	100	2	2	100	
03	VA	1127	SLAMS	510870015	1	2	2	100	2	2	100	2	2	100	
03	VA	1127	SLAMS	511071005	1	2	2	100	2	2	100	2	2	100	
03	VA	1127	SLAMS	511390004	1	2	2	100	2	2	100	2	2	100	
03	VA	1127	SLAMS	511650003	1	2	2	100	2	2	100	2	2	100	
03	VA	1127	SLAMS	515100009	1							2	2	100	
03	VA	1127	SLAMS	515200006	1	2	2	100	2	2	100	2	2	100	
03	VA	1127	SLAMS	516500004	1	2	2	100	1	1	100				
03	VA	1127	SLAMS	516500008	1							2	2	100	
03	VA	1127	SLAMS	516800015	1	2	2	100	2	2	100	2	2	100	
03	VA	1127	SLAMS	517000013	1				2	2	100	1	2	100	
03	VA	1127	SLAMS	517100024	1	2	2	100	2	2	100	2	2	100	
03	VA	1127	SLAMS	517700014	1	2	2	100							
03	VA	1127	SLAMS	517700015	1	2	2	100	2	2	100	2	3	100	
03	VA	1127	SLAMS	517750011	1	1	1	100	2	2	100	2	2	100	
03	VA	1127	SLAMS	518100008	1	2	2	100	2	3	100	2	2	100	
03	VA	All	All Sites					100			100			100	100
03	WV	1150	SLAMS	540030003	1	2	2	100	2	2	100	2	2	100	
03	WV	1150	SLAMS	540090005	1	2	2	100	2	2	100	2	2	100	
03	WV	1150	SLAMS	540090011	1	2	2	100	2	2	100	2	2	100	
03	WV	1150	SLAMS	540110006	1	2	2	100	2	2	100	2	2	100	
03	WV	1150	SLAMS	540291004	1	2	2	100	2	2	100	2	2	100	
03	WV	1150	SLAMS	540390010	1	2	2	100	2	2	100	2	2	100	
03	WV	1150	SLAMS	540391005	1	2	3	100	2	6	100	2	2	100	
03	WV	1150	SLAMS	540511002	1	2	4	100	2	3	100	2	2	100	
03	WV	1150	SLAMS	540610003	1	2	2	100	2	4	100	2	2	100	
03	WV	1150	SLAMS	540690010	1	2	2	100	2	2	100	2	2	100	

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Region	State	PQAO	Monitor Type	Site ID	POC	2008 Required	2008 Submitted	2008 % Complete	2009 Required	2009 Submitted	2009 % Complete	2010 Required	2010 Submitted	2010 % Complete	3 Year comp %
03	WV	1150	SLAMS	541071002	1	2	2	100	2	2	100	2	2	100	
03	WV	1150	SPECIAL PURPOSE	540330003	1	2	2	100	2	2	100	2	2	100	
03	WV	1150	SPECIAL PURPOSE	540490006	1	2	2	100	2	2	100	2	2	100	
03	WV	1150	SPECIAL PURPOSE	540810002	1	2	2	100	2	2	100	2	2	100	
03	WV	All	All Sites					100			100			100	100
04	AL	0013	NCORE	010730023	1	2	16	100	2	17	100	2	17	100	
04	AL	0013	SLAMS	010030010	1	2	16	100	2	4	100	2	4	100	
04	AL	0013	SLAMS	010270001	1	2	13	100	2	4	100	2	4	100	
04	AL	0013	SLAMS	010331002	1	2	17	100	2	4	100	2	4	100	
04	AL	0013	SLAMS	010550010	1	2	14	100	2	4	100	2	4	100	
04	AL	0013	SLAMS	010690003	1	2	14	100	2	4	100	2	4	100	
04	AL	0013	SLAMS	010732003	1	2	16	100	2	17	100	2	18	100	
04	AL	0013	SLAMS	010735002	1	2	9	100	2	11	100	2	9	100	
04	AL	0013	SLAMS	010890014	1	2	8	100	2	6	100	2	5	100	
04	AL	0013	SLAMS	010970003	1	2	14	100	2	4	100	2	4	100	
04	AL	0013	SLAMS	011010007	1	2	14	100							
04	AL	0013	SLAMS	011030011	1	2	15	100	2	3	100	2	4	100	
04	AL	0013	SLAMS	011130001	1	2	18	100	2	3	100	2	4	100	
04	AL	0013	SLAMS	011170006	1	2	14	100	2	4	100	2	4	100	
04	AL	0013	SLAMS	011210002	1	2	13	100	2	4	100	2	4	100	
04	AL	0013	SLAMS	011250004	1	2	15	100	2	4	100	2	4	100	
04	AL	0013	SLAMS	011270002	1	2	15	100	2	4	100	2	4	100	
04	AL	0013	SPECIAL PURPOSE	010491003	1	2	12	100	2	4	100	2	4	100	
04	AL	0013	SPECIAL PURPOSE	010550010	3				1	2	100	2	4	100	
04	AL	0013	SPECIAL PURPOSE	010731005	1	2	10	100	2	11	100	2	11	100	
04	AL	0013	SPECIAL PURPOSE	010731009	1	2	9	100	2	13	100	2	9	100	
04	AL	0013	SPECIAL PURPOSE	010731010	1	2	8	100	2	9	100	2	8	100	
04	AL	0013	SPECIAL PURPOSE	010732006	1	2	8	100	2	10	100	2	9	100	
04	AL	0013	SPECIAL PURPOSE	010735003	1	2	10	100	2	11	100	2	10	100	
04	AL	0013	SPECIAL PURPOSE	010972005	1	2	15	100	2	4	100	2	4	100	
04	AL	All	All Sites					100			100			100	100
04	FL	1328	NCORE	120573002	1	2	2	100	2	2	100	2	3	100	
04	FL	1328	SLAMS	120010023	1	2	2	100	2	2	100	2	3	100	
04	FL	1328	SLAMS	120010024	1	2	2	100	2	2	100	2	2	100	
04	FL	1328	SLAMS	120051004	1	2	2	100	2	3	100				
04	FL	1328	SLAMS	120090007	1	2	2	100	2	2	100	2	2	100	
04	FL	1328	SLAMS	120111002	1	2	2	100	2	2	100	2	3	100	
04	FL	1328	SLAMS	120112004	1	2	2	100	1	1	100				
04	FL	1328	SLAMS	120113002	1	2	2	100	1	1	100				
04	FL	1328	SLAMS	120115005	1				1	0	0	2	2	100	
04	FL	1328	SLAMS	120310098	1	2	3	100	2	2	100	2	2	100	
04	FL	1328	SLAMS	120310099	1	2	2	100	2	2	100	2	2	100	
04	FL	1328	SLAMS	120330004	1	2	2	100	2	2	100	2	2	100	
04	FL	1328	SLAMS	120570030	1	2	2	100	2	2	100				
04	FL	1328	SLAMS	120710005	1	2	2	100	2	2	100	2	2	100	

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Region	State	PQAO	Monitor Type	Site ID	POC	2008 Required	2008 Submitted	2008 % Complete	2009 Required	2009 Submitted	2009 % Complete	2010 Required	2010 Submitted	2010 % Complete	3 Year comp %
04	FL	1328	SLAMS	120730012	1	2	2	100	2	2	100	2	2	100	
04	FL	1328	SLAMS	120814012	1										
04	FL	1328	SLAMS	120860033	1	2	2	100	2	2	100	2	2	100	
04	FL	1328	SLAMS	120861016	1	2	6	100	2	2	100	2	2	100	
04	FL	1328	SLAMS	120866001	1	2	6	100	2	2	100	2	2	100	
04	FL	1328	SLAMS	120951004	1	2	2	100	2	2	100	2	1	50	
04	FL	1328	SLAMS	120952002	1	2	2	100	2	2	100	2	3	100	
04	FL	1328	SLAMS	120990009	1	2	2	100	2	3	100	2	2	100	
04	FL	1328	SLAMS	120992005	1	2	2	100	2	2	100	2	2	100	
04	FL	1328	SLAMS	121030018	1	2	2	100	2	2	100	2	2	100	
04	FL	1328	SLAMS	121031009	1	2	2	100	2	2	100	2	2	100	
04	FL	1328	SLAMS	121056006	1	2	2	100	2	2	100	2	2	100	
04	FL	1328	SLAMS	121111002	1	2	3	100	2	2	100	2	3	100	
04	FL	1328	SLAMS	121150013	1	2	2	100	2	2	100	2	2	100	
04	FL	1328	SLAMS	121171002	1	2	3	100	2	2	100	2	2	100	
04	FL	1328	SLAMS	121275002	1				2	2	100	2	2	100	
04	FL	1328	SPECIAL PURPOSE	120170005	1	2	2	100	2	2	100	2	2	100	
04	FL	1328	SPECIAL PURPOSE	120310032	1				1	1	100	2	2	100	
04	FL	All	All Sites					100			96			98	98
04	GA	0437	NCORE	130890002	1	2	2	100	2	3	100	2	2	100	
04	GA	0437	SLAMS	130210007	1	2	3	100	2	2	100	2	2	100	
04	GA	0437	SLAMS	130210012	1	2	3	100	2	3	100	2	2	100	
04	GA	0437	SLAMS	130510017	1	2	2	100	2	2	100	2	2	100	
04	GA	0437	SLAMS	130510091	1	2	2	100	2	2	100	2	2	100	
04	GA	0437	SLAMS	130590002	1	2	4	100	2	2	100	2	2	100	
04	GA	0437	SLAMS	130630091	1	2	2	100	2	2	100	2	3	100	
04	GA	0437	SLAMS	130670003	1	2	2	100	2	2	100	2	2	100	
04	GA	0437	SLAMS	130670004	1	2	2	100	2	2	100	2	2	100	
04	GA	0437	SLAMS	130892001	1	2	3	100	2	3	100	2	2	100	
04	GA	0437	SLAMS	130950007	1	2	2	100	2	3	100	2	2	100	
04	GA	0437	SLAMS	131150003	1				2	2	100	2	3	100	
04	GA	0437	SLAMS	131150005	1	2	2	100	1	0	0				
04	GA	0437	SLAMS	131210032	1				1	2	100	2	3	100	
04	GA	0437	SLAMS	131210039	1	1	0	0	2	2	100	2	3	100	
04	GA	0437	SLAMS	131210048	1	2	2	100							
04	GA	0437	SLAMS	131270006	1	2	2	100	2	2	100	2	2	100	
04	GA	0437	SLAMS	131350002	1	2	2	100	2	3	100	2	3	100	
04	GA	0437	SLAMS	131390003	1	2	3	100	2	3	100	2	2	100	
04	GA	0437	SLAMS	131530001	1	2	2	100	2	2	100	2	2	100	
04	GA	0437	SLAMS	131850003	1	2	3	100	2	2	100	2	2	100	
04	GA	0437	SLAMS	132150001	1	2	2	100	2	2	100	2	3	100	
04	GA	0437	SLAMS	132150008	1	2	2	100	2	2	100	2	3	100	
04	GA	0437	SLAMS	132150011	1	2	2	100	2	2	100	2	3	100	
04	GA	0437	SLAMS	132230003	1	2	2	100	2	2	100	2	2	100	
04	GA	0437	SLAMS	132450005	1	2	2	100	2	2	100	2	3	100	

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Region	State	PQAO	Monitor Type	Site ID	POC	2008 Required	2008 Submitted	2008 % Complete	2009 Required	2009 Submitted	2009 % Complete	2010 Required	2010 Submitted	2010 % Complete	3 Year comp %
04	GA	0437	SLAMS	132450091	1	2	2	100	2	4	100	2	4	100	
04	GA	0437	SLAMS	132950002	1	2	2	100	2	1	50	2	3	100	
04	GA	0437	SLAMS	133030001	1	2	2	100	2	3	100	2	3	100	
04	GA	0437	SLAMS	133190001	1	2	2	100	2	2	100	2	4	100	
04	GA	All	All Sites					96			94			100	97
04	KY	0584	NCORE	211110067	1				2	8	100	2	9	100	
04	KY	0584	SLAMS	210190017	1	2	4	100	2	4	100	2	4	100	
04	KY	0584	SLAMS	210290006	1	2	3	100	2	4	100	2	4	100	
04	KY	0584	SLAMS	210373002	1	2	4	100	2	4	100	2	4	100	
04	KY	0584	SLAMS	210430500	1	2	4	100	2	4	100	2	4	100	
04	KY	0584	SLAMS	210470006	1	2	4	100	2	4	100	2	4	100	
04	KY	0584	SLAMS	210590005	1	2	4	100	2	4	100	2	4	100	
04	KY	0584	SLAMS	210670012	1	2	4	100	2	4	100	2	4	100	
04	KY	0584	SLAMS	210670014	1	2	4	100	2	4	100	2	4	100	
04	KY	0584	SLAMS	210730006	1	2	3	100	2	4	100	2	4	100	
04	KY	0584	SLAMS	210930006	1	2	2	100	2	3	100	2	4	100	
04	KY	0584	SLAMS	211010014	1	2	4	100	2	4	100	2	4	100	
04	KY	0584	SLAMS	211110043	1	2	5	100	2	8	100	2	8	100	
04	KY	0584	SLAMS	211110044	1	2	5	100	2	8	100	2	8	100	
04	KY	0584	SLAMS	211110048	1	2	4	100							
04	KY	0584	SLAMS	211110051	1	2	6	100	2	8	100	2	8	100	
04	KY	0584	SLAMS	211170007	1	2	4	100	2	4	100	1	1	100	
04	KY	0584	SLAMS	211451004	1	2	4	100	2	4	100	2	4	100	
04	KY	0584	SLAMS	211510003	1	2	4	100	2	4	100	2	4	100	
04	KY	0584	SLAMS	211950002	1	2	4	100	2	4	100	2	4	100	
04	KY	0584	SLAMS	212270008	1	2	4	100	2	4	100	2	4	100	
04	KY	0584	SPECIAL PURPOSE	210130002	1	2	4	100	2	4	100	2	4	100	
04	KY	0584	SPECIAL PURPOSE	211830032	1	2	4	100	2	4	100	1	1	100	
04	KY	0584	SPECIAL PURPOSE	211930003	1	1	2	100							
04	KY	0584	SPECIAL PURPOSE	211990003	3							2	1	50	
04	KY	All	All Sites					100			100			97	99
04	MS	0703	NCORE	280490019	1				1	0	0	2	3	100	
04	MS	0703	SLAMS	280010004	1	2	3	100	2	4	100	2	4	100	
04	MS	0703	SLAMS	280110001	1	2	3	100	2	4	100	2	4	100	
04	MS	0703	SLAMS	280330002	1	2	2	100	2	3	100	2	4	100	
04	MS	0703	SLAMS	280350004	1	2	3	100	2	4	100	2	4	100	
04	MS	0703	SLAMS	280430001	1	2	3	100	2	3	100	2	4	100	
04	MS	0703	SLAMS	280450003	1	2	0	0	2	4	100	2	4	100	
04	MS	0703	SLAMS	280470008	1	2	3	100	2	4	100	2	4	100	
04	MS	0703	SLAMS	280490010	1	2	4	100	2	4	100	2	4	100	
04	MS	0703	SLAMS	280590006	1	2	3	100	2	4	100	2	4	100	
04	MS	0703	SLAMS	280670002	1	2	3	100	2	4	100	2	4	100	
04	MS	0703	SLAMS	280750003	1	2	3	100	2	4	100	2	4	100	
04	MS	0703	SLAMS	280810005	1	2	5	100	2	4	100	2	4	100	
04	MS	0703	SLAMS	280870001	1	2	4	100	2	4	100				

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Region	State	PQAO	Monitor Type	Site ID	POC	2008 Required	2008 Submitted	2008 % Complete	2009 Required	2009 Submitted	2009 % Complete	2010 Required	2010 Submitted	2010 % Complete	3 Year comp %
04	MS	All	All Sites			92			92			100			95
04	NC	001	TRIBAL MONITORS	370990006	1	2	2	100	2	4	100	2	4	100	
04	NC	0776	NCORE	371190041	1	2	5	100	2	5	100	2	6	100	
04	NC	0776	NCORE	371830014	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	370010002	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	370210034	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	370330001	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	370350004	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	370370004	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	370510009	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	370570002	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	370610002	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	370630015	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	370650004	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	370670022	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	370670030	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	370710016	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	370810013	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	370810014	1	2	4	100	2	5	100	2	4	100	
04	NC	0776	SLAMS	370870012	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	371010002	1				2	4	100	2	4	100	
04	NC	0776	SLAMS	371070004	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	371110004	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	371170001	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	371190042	1	2	5	100	2	5	100	2	6	100	
04	NC	0776	SLAMS	371190043	1	2	5	100	2	5	100	2	6	100	
04	NC	0776	SLAMS	371210001	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	371230001	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	371350007	1	2	3	100							
04	NC	0776	SLAMS	371470005	1	2	4	100							
04	NC	0776	SLAMS	371470006	1	2	3	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	371550005	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	371590021	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	371730002	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	371830020	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	371890003	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	371910005	1	2	4	100	2	4	100	2	4	100	
04	NC	0776	SPECIAL PURPOSE	371290002	1	2	1	50	2	0	0	2	4	100	
04	NC	All	All Sites			98			97			100			98
04	SC	0971	NCORE	450790007	1	2	26	100	2	2	100	2	27	100	
04	SC	0971	SLAMS	450130007	1										
04	SC	0971	SLAMS	450190049	1	2	27	100	2	27	100	2	27	100	
04	SC	0971	SLAMS	450250001	1	2	27	100	2	27	100	2	25	100	
04	SC	0971	SLAMS	450410002	1	2	27	100	2	21	100				
04	SC	0971	SLAMS	450450008	1	2	27	100	1	13	100				

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04	SC	0971	SLAMS	450450009	1	2	27	100	2	26	100	2	22	100	
04	SC	0971	SLAMS	450450015	1	2	18	100	2	28	100	2	30	100	
04	SC	0971	SLAMS	450470003	1										
04	SC	0971	SLAMS	450510002	1										
04	SC	0971	SLAMS	450630008	1	2	28	100	2	27	100	2	25	100	
04	SC	0971	SLAMS	450730001	1	2	26	100	2	25	100	2	25	100	
04	SC	0971	SLAMS	450790019	1	2	27	100	2	25	100	2	27	100	
04	SC	0971	SLAMS	450830010	1	2	23	100	2	28	100				
04	SC	0971	SPECIAL PURPOSE	450190048	1	2	26	100	2	28	100	2	25	100	
04	SC	0971	SPECIAL PURPOSE	450190051	1	1	0	0	2	24	100	2	25	100	
04	SC	0971	SPECIAL PURPOSE	450370001	1	2	26	100	2	26	100	2	26	100	
04	SC	0971	SPECIAL PURPOSE	450410003	1	1	10	100	2	27	100	2	26	100	
04	SC	0971	SPECIAL PURPOSE	450791001	1	2	26	100	2	23	100				
04	SC	0971	SPECIAL PURPOSE	450830011	1	1	0	0	2	27	100	2	24	100	
04	SC	All	All Sites					88			100			100	96
04	TN	1025	SLAMS	470370023	1	2	16	100	2	18	100	2	20	100	
04	TN	1025	SLAMS	470370036	1	2	16	100	2	16	100	2	19	100	
04	TN	1025	SLAMS	470450004	1	2	4	100	2	4	100	2	4	100	
04	TN	1025	SLAMS	470654002	1	2	12	100	2	15	100	2	16	100	
04	TN	1025	SLAMS	470930028	1	2	5	100	2	3	100	2	6	100	
04	TN	1025	SLAMS	470931017	1	2	6	100	2	7	100	2	8	100	
04	TN	1025	SLAMS	470931020	1	2	5	100	2	7	100	2	8	100	
04	TN	1025	SLAMS	470990002	1	2	4	100	2	4	100	2	4	100	
04	TN	1025	SLAMS	471130006	1	2	4	100	2	4	100	2	4	100	
04	TN	1025	SLAMS	471251009	1	2	4	100	2	4	100	2	4	100	
04	TN	1025	SLAMS	471570014	1	2	4	100	2	4	100	2	4	100	
04	TN	1025	SLAMS	471570038	1	1	1	100							
04	TN	1025	SLAMS	471570047	1	2	4	100	2	4	100	2	4	100	
04	TN	1025	SLAMS	471571004	1	2	3	100							
04	TN	1025	SLAMS	471631007	1	2	4	100				2	4	100	
04	TN	1025	SLAMS	471650007	1	2	4	100	2	4	100	2	4	100	
04	TN	1025	SPECIAL PURPOSE	470090011	1	2	4	100	2	4	100	2	4	100	
04	TN	1025	SPECIAL PURPOSE	470650031	1	2	13	100	2	15	100	2	16	100	
04	TN	1025	SPECIAL PURPOSE	470651011	1	2	12	100	2	16	100	2	16	100	
04	TN	1025	SPECIAL PURPOSE	470931013	1	2	2	100	2	6	100	2	5	100	
04	TN	1025	SPECIAL PURPOSE	470931017	2	2	7	100	2	7	100	2	8	100	
04	TN	1025	SPECIAL PURPOSE	471050108	1	2	4	100	2	4	100	2	4	100	
04	TN	1025	SPECIAL PURPOSE	471071002	1	2	4	100	2	4	100	2	4	100	
04	TN	1025	SPECIAL PURPOSE	471192007	1	2	4	100	2	4	100	2	4	100	
04	TN	1025	SPECIAL PURPOSE	471251011	1	2	3	100	1	2	100				
04	TN	1025	SPECIAL PURPOSE	471410005	1	2	4	100	2	4	100	2	4	100	
04	TN	1025	SPECIAL PURPOSE	471450004	1	2	4	100	2	4	100	2	4	100	
04	TN	All	All Sites					100			100			100	100
05	IL	0258	SLAMS	170310022	1	2	4	100	2	4	100	2	4	100	
05	IL	0258	SLAMS	170310050	1	2	4	100	2	4	100	2	4	100	

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Region	State	PQAO	Monitor Type	Site ID	POC	2008 Required	2008 Submitted	2008 % Complete	2009 Required	2009 Submitted	2009 % Complete	2010 Required	2010 Submitted	2010 % Complete	3 Year comp %
05	IL	0258	SLAMS	170310052	1	2	4	100	2	3	100	2	4	100	
05	IL	0258	SLAMS	170310057	1	2	4	100	2	4	100	2	5	100	
05	IL	0258	SLAMS	170310076	1	2	4	100	2	4	100	2	4	100	
05	IL	0258	SLAMS	170312001	1	2	4	100	2	4	100	2	4	100	
05	IL	0258	SLAMS	170313301	1	2	4	100	2	4	100	2	4	100	
05	IL	0258	SLAMS	170316005	1	2	4	100	2	4	100	2	4	100	
05	IL	0513	NCORE	170191001	1	2	1	50	2	2	100	2	2	100	
05	IL	0513	NCORE	170314201	1	2	2	100	2	2	100	2	2	100	
05	IL	0513	SLAMS	170010007	1	2	1	50	2	2	100	2	2	100	
05	IL	0513	SLAMS	170190004	1	2	1	50	2	2	100	1	1	100	
05	IL	0513	SLAMS	170311016	1	2	2	100	2	2	100	2	2	100	
05	IL	0513	SLAMS	170313103	1	2	2	100	2	2	100	2	2	100	
05	IL	0513	SLAMS	170314007	1	2	2	100	2	2	100	2	2	100	
05	IL	0513	SLAMS	170434002	1	2	3	100	2	2	100	2	2	100	
05	IL	0513	SLAMS	170650002	1	2	2	100	2	2	100	2	2	100	
05	IL	0513	SLAMS	170831001	1	2	2	100	2	2	100	2	2	100	
05	IL	0513	SLAMS	170890003	1	2	0	0	2	2	100	2	2	100	
05	IL	0513	SLAMS	170890007	1	2	2	100	2	2	100	2	2	100	
05	IL	0513	SLAMS	170971007	1	2	2	100	2	2	100	2	2	100	
05	IL	0513	SLAMS	170990007	1	2	1	50	2	2	100	2	2	100	
05	IL	0513	SLAMS	171110001	1	2	2	100	2	2	100	2	2	100	
05	IL	0513	SLAMS	171132003	1	2	2	100	2	2	100	2	2	100	
05	IL	0513	SLAMS	171150013	1	2	2	100	2	2	100	2	2	100	
05	IL	0513	SLAMS	171190024	1	2	2	100	2	2	100	2	2	100	
05	IL	0513	SLAMS	171191007	1	2	2	100	2	3	100	2	2	100	
05	IL	0513	SLAMS	171192009	1	2	2	100	2	2	100	2	2	100	
05	IL	0513	SLAMS	171193007	1	2	2	100	2	2	100	2	3	100	
05	IL	0513	SLAMS	171430037	1	2	3	100	2	2	100	2	2	100	
05	IL	0513	SLAMS	171570001	1	2	2	100	2	2	100	2	2	100	
05	IL	0513	SLAMS	171613002	1	2	2	100	2	2	100	2	3	100	
05	IL	0513	SLAMS	171630010	1	2	2	100	2	2	100	2	2	100	
05	IL	0513	SLAMS	171634001	1	2	2	100	2	2	100	2	2	100	
05	IL	0513	SLAMS	171670012	1	2	2	100	2	2	100	2	2	100	
05	IL	0513	SLAMS	171971002	1	2	2	100	2	3	100	2	2	100	
05	IL	0513	SLAMS	171971011	1	2	2	100	2	2	100	2	1	50	
05	IL	0513	SLAMS	172010013	1	2	2	100	2	2	100	2	2	100	
05	IL	All	All Sites					92			100			98	97
05	IN	0520	NCORE	180970078	1				2	4	100	2	4	100	
05	IN	0520	SLAMS	180030004	1	2	4	100	2	5	100	2	4	100	
05	IN	0520	SLAMS	180190006	1	2	4	100	2	4	100	2	4	100	
05	IN	0520	SLAMS	180350006	1	2	4	100	2	4	100	2	4	100	
05	IN	0520	SLAMS	180370004	1	2	4	100							
05	IN	0520	SLAMS	180370005	1	2	4	100							
05	IN	0520	SLAMS	180372001	1	2	4	100	2	4	100	2	4	100	
05	IN	0520	SLAMS	180390008	1	2	4	100	2	4	100	2	4	100	

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05	IN	0520	SLAMS	180431004	1	2	4	100	2	4	100	2	4	100	
05	IN	0520	SLAMS	180650003	1	2	4	100	2	5	100	2	4	100	
05	IN	0520	SLAMS	180670003	1	2	4	100	2	4	100	2	4	100	
05	IN	0520	SLAMS	180830004	1	2	4	100	2	4	100	2	4	100	
05	IN	0520	SLAMS	180890006	1	2	4	100	2	4	100	2	4	100	
05	IN	0520	SLAMS	180890022	1	2	4	100	2	4	100	2	4	100	
05	IN	0520	SLAMS	180890026	1	2	4	100	2	4	100	2	4	100	
05	IN	0520	SLAMS	180890027	1	2	4	100	2	4	100	2	4	100	
05	IN	0520	SLAMS	180890031	1	2	4	100	2	4	100	2	4	100	
05	IN	0520	SLAMS	180892004	1	2	4	100	2	0	0	2	2	100	
05	IN	0520	SLAMS	180892010	1	2	4	100	2	5	100	2	4	100	
05	IN	0520	SLAMS	180910011	1	2	4	100	2	4	100	2	4	100	
05	IN	0520	SLAMS	180950009	1	2	4	100	2	4	100	1	3	100	
05	IN	0520	SLAMS	180950011	1							1	2	100	
05	IN	0520	SLAMS	180970043	1				2	4	100	2	4	100	
05	IN	0520	SLAMS	180970066	1	2	4	100	1	0	0				
05	IN	0520	SLAMS	180970081	1				2	4	100	2	4	100	
05	IN	0520	SLAMS	180970083	1				2	4	100	2	4	100	
05	IN	0520	SLAMS	180970084	1				2	4	100	2	4	100	
05	IN	0520	SLAMS	181050003	1				2	3	100	2	2	100	
05	IN	0520	SLAMS	181270024	1	2	4	100	2	4	100	2	4	100	
05	IN	0520	SLAMS	181410014	1	2	4	100	2	4	100				
05	IN	0520	SLAMS	181410015	1	2	3	100	2	4	100	2	4	100	
05	IN	0520	SLAMS	181470009	1	2	4	100	2	4	100	2	4	100	
05	IN	0520	SLAMS	181570008	1	2	4	100	2	6	100	2	4	100	
05	IN	0520	SLAMS	181630006	1	2	4	100	1	1	100				
05	IN	0520	SLAMS	181630012	1	2	4	100	1	2	100				
05	IN	0520	SLAMS	181630016	1	2	4	100	2	4	100	2	4	100	
05	IN	0520	SLAMS	181630020	1				2	3	100	2	4	100	
05	IN	0520	SLAMS	181630021	1				1	2	100	2	4	100	
05	IN	0520	SLAMS	181670018	1	2	4	100	2	4	100	2	4	100	
05	IN	0520	SLAMS	181670023	1	2	4	100	2	3	100	2	4	100	
05	IN	0520	SLAMS	181830003	1							2	3	100	
05	IN	0520	SPECIAL PURPOSE	180190008	1	1	2	100	2	5	100	2	4	100	
05	IN	0520	SPECIAL PURPOSE	180510012	1	2	4	100	2	4	100	2	4	100	
05	IN	All	All Sites					100			94			100	98
05	MI	0685	NCORE	260810020	1	2	2	100	2	2	100	2	2	100	
05	MI	0685	NCORE	261630001	1	2	2	100	2	2	100	2	2	100	
05	MI	0685	SLAMS	260050003	1	2	2	100	2	2	100	2	2	100	
05	MI	0685	SLAMS	260170014	1	2	2	100	2	2	100	2	2	100	
05	MI	0685	SLAMS	260210014	1	2	2	100	2	2	100	2	2	100	
05	MI	0685	SLAMS	260490021	1	2	2	100	2	2	100	2	2	100	
05	MI	0685	SLAMS	260650012	1	2	2	100	2	2	100	2	2	100	
05	MI	0685	SLAMS	260770008	1	2	2	100	2	2	100	2	2	100	
05	MI	0685	SLAMS	260810007	1	2	2	100	2	2	100	2	2	100	

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05	MI	0685	SLAMS	260910007	1	2	2	100	2	2	100	2	2	100	
05	MI	0685	SLAMS	260990009	1	2	2	100	2	2	100	2	2	100	
05	MI	0685	SLAMS	261130001	1	2	2	100	2	2	100	2	2	100	
05	MI	0685	SLAMS	261150005	1	2	2	100	2	2	100	2	2	100	
05	MI	0685	SLAMS	261210040	1	2	2	100	2	4	100	2	2	100	
05	MI	0685	SLAMS	261250001	1	2	2	100	2	3	100	2	2	100	
05	MI	0685	SLAMS	261390005	1	2	2	100	2	2	100	2	2	100	
05	MI	0685	SLAMS	261470005	1	2	2	100	2	2	100	2	2	100	
05	MI	0685	SLAMS	261610008	1	2	2	100	2	2	100	2	2	100	
05	MI	0685	SLAMS	261630015	1	2	2	100	2	2	100	2	2	100	
05	MI	0685	SLAMS	261630016	1	2	2	100	2	2	100	2	2	100	
05	MI	0685	SLAMS	261630019	1	2	2	100	2	2	100	2	2	100	
05	MI	0685	SLAMS	261630025	1	2	2	100	2	3	100	2	2	100	
05	MI	0685	SLAMS	261630033	1	2	2	100	2	2	100	2	2	100	
05	MI	0685	SLAMS	261630036	1	2	2	100	2	2	100	2	2	100	
05	MI	0685	SLAMS	261630038	1	2	2	100	2	2	100	2	2	100	
05	MI	0685	SLAMS	261630039	1	2	2	100	2	2	100	2	2	100	
05	MI	0685	TRIBAL MONITORS	261010922	1	2	2	100	2	2	100	2	2	100	
05	MI	All	All Sites					100			100			100	100
05	MN	0700	NCORE	270031002	1							2	2	100	
05	MN	0700	SLAMS	270370470	1	2	2	100	2	2	100	2	2	100	
05	MN	0700	SLAMS	270530961	1	2	3	100	2	2	100				
05	MN	0700	SLAMS	270530963	1	2	2	100	2	3	100	2	2	100	
05	MN	0700	SLAMS	270531007	1	2	2	100	2	1	50				
05	MN	0700	SLAMS	270532006	1	2	2	100	2	2	100	2	2	100	
05	MN	0700	SLAMS	271095008	1	2	2	100	2	1	50	2	2	100	
05	MN	0700	SLAMS	271230866	1	2	2	100	2	2	100				
05	MN	0700	SLAMS	271230868	1	2	0	0	2	2	100	2	2	100	
05	MN	0700	SLAMS	271230871	1	2	1	50	2	2	100	2	2	100	
05	MN	0700	SLAMS	271377001	1	2	0	0	2	2	100	2	2	100	
05	MN	0700	SLAMS	271377550	1	2	2	100	2	2	100	2	2	100	
05	MN	0700	SLAMS	271377551	1	2	2	100	2	2	100	2	2	100	
05	MN	0700	SLAMS	271390505	1	2	1	50	2	2	100	2	2	100	
05	MN	0700	SLAMS	271453052	1	2	2	100	2	2	100	2	2	100	
05	MN	0700	SPECIAL PURPOSE	271630445	1	1	1	100							
05	MN	0700	SPECIAL PURPOSE	271630446	1	2	0	0	2	2	100				
05	MN	0700	TRIBAL MONITORS	270953051	1	2	3	100	2	1	50				
05	MN	All	All Sites					76			90			100	89
05	OH	0012	SLAMS	391030003	1	2	4	100	2	4	100	2	2	100	
05	OH	0012	SLAMS	391330002	1	2	4	100	2	4	100	2	3	100	
05	OH	0012	SLAMS	391530017	1	2	4	100	2	4	100	2	3	100	
05	OH	0012	SLAMS	391530023	1	2	4	100	2	4	100	2	3	100	
05	OH	0151	SLAMS	391510017	1	2	3	100	2	4	100	2	4	100	
05	OH	0151	SLAMS	391510020	1	2	4	100	2	4	100	2	4	100	
05	OH	0220	SLAMS	390950024	1	2	4	100	2	4	100	2	4	100	

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05	OH	0220	SLAMS	390950025	1	2	3	100							
05	OH	0220	SLAMS	390950026	1	2	4	100							
05	OH	0220	SLAMS	390950028	1	1	0	0	2	4	100	2	4	100	
05	OH	0229	NCORE	390350060	1				1	5	100	2	4	100	
05	OH	0229	SLAMS	390350027	1	2	4	100	1	2	100				
05	OH	0229	SLAMS	390350034	1	2	4	100	2	4	100	2	4	100	
05	OH	0229	SLAMS	390350038	1	2	6	100	2	4	100	2	4	100	
05	OH	0229	SLAMS	390350045	1	2	4	100	2	4	100	2	4	100	
05	OH	0229	SLAMS	390350065	1	2	4	100	2	4	100	2	4	100	
05	OH	0229	SLAMS	390351002	1	2	4	100	2	4	100	2	4	100	
05	OH	0287	NCORE	391351001	1	2	4	100	2	4	100	2	4	100	
05	OH	0287	SLAMS	390230005	1	2	4	100	2	4	100	2	3	100	
05	OH	0287	SLAMS	390570005	1	2	4	100	2	5	100	2	3	100	
05	OH	0287	SLAMS	391130032	1	2	7	100	2	4	100	2	4	100	
05	OH	0595	SLAMS	390850007	1				2	2	100	2	4	100	
05	OH	0595	SLAMS	390853002	1	2	4	100							
05	OH	0634	SLAMS	390990005	1	2	8	100	2	4	100	2	4	100	
05	OH	0634	SLAMS	390990014	1	2	4	100	2	4	100	2	4	100	
05	OH	0634	SLAMS	391550005	1							2	4	100	
05	OH	0634	SLAMS	391550007	1	2	3	100							
05	OH	0805	SLAMS	390490024	1	2	4	100	2	4	100	2	4	100	
05	OH	0805	SLAMS	390490025	1	2	7	100	2	4	100	2	4	100	
05	OH	0805	SLAMS	390490029	3							2	2	100	
05	OH	0805	SLAMS	390490081	1	2	4	100	2	3	100	2	4	100	
05	OH	0807	SLAMS	390933002	1	2	8	100	2	4	100	2	4	100	
05	OH	0808	SLAMS	390030009	1							2	2	100	
05	OH	0809	SLAMS	390090003	1	2	4	100	2	4	100	2	4	100	
05	OH	0809	SLAMS	390810017	1	2	4	100	2	3	100	2	4	100	
05	OH	0809	SLAMS	390811001	1	2	8	100	2	4	100	2	6	100	
05	OH	0880	SLAMS	390870012	1	2	4	100	2	3	100	2	4	100	
05	OH	0880	SLAMS	391450013	1	2	8	100	2	4	100	2	3	100	
05	OH	1259	SLAMS	390170003	1	2	4	100	2	4	100	2	3	100	
05	OH	1259	SLAMS	390170016	1	2	4	100	2	4	100	2	4	100	
05	OH	1259	SLAMS	390250022	1	2	4	100	2	4	100	2	4	100	
05	OH	1259	SLAMS	390610006	1	2	4	100	2	4	100	2	3	100	
05	OH	1259	SLAMS	390610014	1	2	4	100	2	4	100	2	4	100	
05	OH	1259	SLAMS	390610040	1	2	4	100	2	4	100	2	3	100	
05	OH	1259	SLAMS	390610042	1	2	3	100	2	4	100	2	3	100	
05	OH	1259	SLAMS	390610043	1	2	4	100							
05	OH	1259	SLAMS	390617001	1	2	4	100	2	3	100	2	4	100	
05	OH	1259	SLAMS	390618001	1	2	4	100	2	4	100	1	0	0	
05	OH	1259	SLAMS	391650007	1	2	3	100	2	4	100	2	3	100	
05	OH	All	All Sites					97			100			97	98
05	WI	1175	NCORE	550270001	1				1	0	0	2	11	100	
05	WI	1175	SLAMS	550090005	1	2	11	100	2	12	100	2	11	100	

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05	WI	1175	SLAMS	550250047	1	2	12	100	2	12	100	2	12	100	
05	WI	1175	SLAMS	550270007	1	2	12	100	2	11	100				
05	WI	1175	SLAMS	550430009	1	2	12	100	2	12	100	2	12	100	
05	WI	1175	SLAMS	550590019	1	2	12	100	2	12	100	2	12	100	
05	WI	1175	SLAMS	550630012	1	2	12	100	2	12	100	2	12	100	
05	WI	1175	SLAMS	550710007	1	2	11	100	2	12	100	2	12	100	
05	WI	1175	SLAMS	550790010	2	2	12	100	2	12	100	2	11	100	
05	WI	1175	SLAMS	550790026	1	2	12	100	2	12	100	2	12	100	
05	WI	1175	SLAMS	550790043	1	2	12	100	2	12	100				
05	WI	1175	SLAMS	550790058	1				1	2	100	2	11	100	
05	WI	1175	SLAMS	550790059	2	2	12	100	2	9	100				
05	WI	1175	SLAMS	550790099	1	2	12	100	2	12	100	2	0	0	
05	WI	1175	SLAMS	550870009	1	2	12	100	2	12	100	2	12	100	
05	WI	1175	SLAMS	550890009	1	2	12	100	2	12	100	2	12	100	
05	WI	1175	SLAMS	551091002	1	2	12	100	2	12	100	2	12	100	
05	WI	1175	SLAMS	551110007	1	2	12	100	2	12	100	2	12	100	
05	WI	1175	SLAMS	551198001	1	2	12	100	2	12	100	2	12	100	
05	WI	1175	SLAMS	551250001	1	2	12	100	2	12	100	2	12	100	
05	WI	1175	SLAMS	551330027	2	2	12	100	2	12	100	2	12	100	
05	WI	1175	SPECIAL PURPOSE	550350100	1				2	10	100	2	12	100	
05	WI	1175	TRIBAL MONITORS	550030010	1	2	12	100	2	12	100	2	12	100	
05	WI	1175	TRIBAL MONITORS	550410007	1	2	12	100	2	13	100	2	11	100	
05	WI	All	All Sites					100			95			95	97
06	AR	0055	NCORE	051190007	1	2	4	100	2	4	100	2	4	100	
06	AR	0055	SLAMS	050010011	1	2	4	100	2	4	100	2	4	100	
06	AR	0055	SLAMS	050030005	1	2	4	100	2	4	100	2	8	100	
06	AR	0055	SLAMS	050350005	1	2	4	100	2	4	100	2	4	100	
06	AR	0055	SLAMS	050450002	1	2	4	100	2	4	100	2	4	100	
06	AR	0055	SLAMS	050510003	1	2	8	100	2	8	100	2	8	100	
06	AR	0055	SLAMS	050670001	1	2	4	100	2	4	100	2	4	100	
06	AR	0055	SLAMS	051070001	1	2	4	100	2	4	100	2	4	100	
06	AR	0055	SLAMS	051130002	1	2	4	100	2	5	100	2	4	100	
06	AR	0055	SLAMS	051150003	1	2	5	100	2	5	100	2	4	100	
06	AR	0055	SLAMS	051191004	1	2	8	100	2	8	100	2	8	100	
06	AR	0055	SLAMS	051191008	1	2	4	100	2	4	100	2	4	100	
06	AR	0055	SLAMS	051310008	1	2	4	100	2	4	100	2	4	100	
06	AR	0055	SLAMS	051390006	1	2	4	100	2	4	100	2	8	100	
06	AR	0055	SLAMS	051430005	1	2	5	100	2	4	100	2	4	100	
06	AR	0055	SLAMS	051450001	1	2	4	100	2	4	100	2	4	100	
06	AR	All	All Sites					100			100			100	100
06	LA	1001	NCORE	220330009	1	2	4	100	2	2	100	2	2	100	
06	LA	1001	SLAMS	220170008	1	2	3	100	2	2	100	2	2	100	
06	LA	1001	SLAMS	220190009	1	2	4	100	2	2	100	2	2	100	
06	LA	1001	SLAMS	220190010	1	2	4	100	2	2	100	2	2	100	
06	LA	1001	SLAMS	220331001	1	2	4	100	2	2	100	2	2	100	

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Region	State	PQAO	Monitor Type	Site ID	POC	2008 Required	2008 Submitted	2008 % Complete	2009 Required	2009 Submitted	2009 % Complete	2010 Required	2010 Submitted	2010 % Complete	3 Year comp %
06	LA	1001	SLAMS	220470005	1	2	4	100	2	2	100	2	2	100	
06	LA	1001	SLAMS	220470009	1	2	4	100	2	2	100	2	2	100	
06	LA	1001	SLAMS	220511001	1	2	4	100	2	2	100	2	2	100	
06	LA	1001	SLAMS	220512001	1	2	4	100	2	2	100	2	2	100	
06	LA	1001	SLAMS	220550006	1	2	4	100	2	2	100	2	2	100	
06	LA	1001	SLAMS	220550007	1	2	4	100	2	2	100	2	2	100	
06	LA	1001	SLAMS	220730004	1	2	3	100	2	2	100	2	2	100	
06	LA	1001	SLAMS	221050001	1	2	4	100	2	2	100	2	2	100	
06	LA	1001	SLAMS	221090001	1	2	3	100	2	2	100	2	2	100	
06	LA	1001	SLAMS	221210001	1	2	5	100	2	2	100	2	2	100	
06	LA	1001	SPECIAL PURPOSE	220790002	1	2	3	100	2	2	100	2	2	100	
06	LA	1001	SPECIAL PURPOSE	220870007	1	2	4	100	2	2	100	2	2	100	
06	LA	All	All Sites					100			100			100	100
06	NM	0017	NCORE	350010023	1	2	3	100	2	3	100	2	4	100	
06	NM	0017	SLAMS	350010024	1	2	2	100	2	1	50	2	2	100	
06	NM	0765	SLAMS	350050005	1	2	2	100	2	2	100	2	2	100	
06	NM	0765	SLAMS	350130017	1	2	4	100	2	3	100	2	5	100	
06	NM	0765	SLAMS	350130025	1	2	2	100	2	2	100	2	2	100	
06	NM	0765	SLAMS	350171002	1	2	2	100	2	2	100	2	3	100	
06	NM	0765	SLAMS	350250008	1	2	2	100	2	2	100	2	2	100	
06	NM	0765	SLAMS	350431003	1	2	1	50	2	1	50				
06	NM	0765	SLAMS	350450006	1	2	2	100							
06	NM	0765	SLAMS	350450019	1	1	0	0	2	4	100	2	3	100	
06	NM	0765	SLAMS	350490020	1	2	2	100	2	1	50	2	3	100	
06	NM	All	All Sites					86			85			100	90
06	OK	807	TRIBAL MONITORS	400159008	1	2	5	100	2	4	100	2	4	100	
06	OK	0812	NCORE	401431127	1	2	2	100	2	2	100	2	2	100	
06	OK	0812	SLAMS	400970186	1	2	2	100	2	3	100	2	2	100	
06	OK	0812	SLAMS	401010169	1	2	2	100	2	3	100	2	3	100	
06	OK	0812	SLAMS	401090035	1	2	2	100	2	2	100	2	2	100	
06	OK	0812	SLAMS	401091037	1	2	2	100	2	2	100	2	2	100	
06	OK	0812	SLAMS	401210415	1	2	2	100	2	3	100	2	3	100	
06	OK	0812	SLAMS	401430110	1	2	2	100	2	3	100	1	1	100	
06	OK	905	PROPOSED NCORE	400019009	1	1	0	0	2	1	50	1	1	100	
06	OK	905	TRIBAL MONITORS	401359015	1	2	1	50	2	1	50	1	1	100	
06	OK	920	TRIBAL MONITORS	401159004	1	2	10	100	2	7	100	2	2	100	
06	OK	All	All Sites					86			90			100	92
06	TX	1035	NCORE	481130069	1	2	5	100	2	5	100	2	5	100	
06	TX	1035	NCORE	481410044	1	2	4	100	2	4	100	2	5	100	
06	TX	1035	SLAMS	480370004	1	2	5	100	2	5	100	2	4	100	
06	TX	1035	SLAMS	481130087	1	2	4	100	2	6	100	2	3	100	
06	TX	1035	SLAMS	481350003	1	2	5	100	2	4	100	2	3	100	
06	TX	1035	SLAMS	481410037	1	2	4	100	2	3	100	2	5	100	
06	TX	1035	SLAMS	482010058	1	2	4	100	2	5	100	2	5	100	
06	TX	1035	SLAMS	482011035	1	2	5	100	2	5	100	2	4	100	

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06	TX	1035	SLAMS	482150043	1	2	5	100	2	5	100	2	5	100	
06	TX	1035	SLAMS	483550032	1	2	4	100	2	6	100	2	4	100	
06	TX	1035	SLAMS	483611001	1	2	4	100	2	5	100	2	4	100	
06	TX	1035	SLAMS	483750320	1	2	4	100	2	5	100	2	3	100	
06	TX	1035	SLAMS	484391002	1	2	5	100	2	5	100	2	5	100	
06	TX	1035	SLAMS	484391006	1	2	5	100	2	5	100	2	5	100	
06	TX	1035	SLAMS	484530021	2	2	5	100	2	5	100	2	5	100	
06	TX	1035	SPECIAL PURPOSE	480290032	1	2	5	100	2	5	100	2	5	100	
06	TX	1035	SPECIAL PURPOSE	480290059	1	2	5	100	2	5	100	2	4	100	
06	TX	1035	SPECIAL PURPOSE	481390016	5	2	5	100	2	5	100	2	5	100	
06	TX	1035	SPECIAL PURPOSE	482030002	1	2	5	100	2	5	100	2	5	100	
06	TX	All	All Sites					100			100			100	100
07	IA	0613	SLAMS	191130037	1	2	4	100	2	4	100	2	4	100	
07	IA	0613	SPECIAL PURPOSE	191130040	1	2	3	100	2	5	100	2	4	100	
07	IA	0874	SLAMS	191530030	1	2	4	100	2	4	100	2	4	100	
07	IA	0874	SLAMS	191532510	1	2	4	100	2	4	100	2	4	100	
07	IA	1080	NCORE	191630015	1	2	4	100	2	4	100	2	4	100	
07	IA	1080	SLAMS	190130008	1	2	4	100	2	4	100	2	4	100	
07	IA	1080	SLAMS	191032001	1	2	4	100	2	4	100	2	4	100	
07	IA	1080	SLAMS	191370002	1	2	4	100	2	4	100	2	4	100	
07	IA	1080	SLAMS	191390015	1	2	4	100	2	4	100	2	4	100	
07	IA	1080	SLAMS	191471002	1	2	4	100	2	4	100	2	4	100	
07	IA	1080	SLAMS	191630019	1	2	4	100	2	4	100	2	4	100	
07	IA	1080	SLAMS	191770006	1	2	4	100	2	4	100	2	4	100	
07	IA	1080	SPECIAL PURPOSE	190130009	1				2	4	100	2	4	100	
07	IA	1080	SPECIAL PURPOSE	190450019	1	2	4	100	2	4	100	2	4	100	
07	IA	1080	SPECIAL PURPOSE	190450021	1	2	4	100	2	4	100	2	4	100	
07	IA	1080	SPECIAL PURPOSE	190550001	1	2	4	100	2	0	0	2	0	0	
07	IA	1080	SPECIAL PURPOSE	191110008	1	2	4	100	2	4	100	2	4	100	
07	IA	1080	SPECIAL PURPOSE	191390016	1				2	4	100	2	4	100	
07	IA	1080	SPECIAL PURPOSE	191390018	1				2	4	100	2	4	100	
07	IA	1080	SPECIAL PURPOSE	191550009	1	2	4	100	2	4	100	2	4	100	
07	IA	1080	SPECIAL PURPOSE	191630018	1	2	4	100	2	4	100	2	4	100	
07	IA	1080	SPECIAL PURPOSE	191630020	1							2	4	100	
07	IA	1080	SPECIAL PURPOSE	191710007	1							2	3	100	
07	IA	1080	SPECIAL PURPOSE	191930017	1	2	4	100	2	0	0	2	0	0	
07	IA	1080	SPECIAL PURPOSE	191930019	1				2	4	100	2	4	100	
07	IA	1080	SPECIAL PURPOSE	191970004	1	2	4	100	2	4	100				
07	IA	All	All Sites					100			91			92	94
07	KS	0563	NCORE	202090021	1	2	4	100	2	4	100	2	4	100	
07	KS	0563	SLAMS	200910007	1	2	4	100	2	5	100	2	3	100	
07	KS	0563	SLAMS	200910010	1	2	5	100	2	4	100	2	4	100	
07	KS	0563	SLAMS	201070002	1	2	4	100	2	4	100	2	4	100	
07	KS	0563	SLAMS	201730008	1	2	4	100	2	4	100	2	4	100	
07	KS	0563	SLAMS	201730009	1	2	4	100	2	4	100	2	4	100	

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07	KS	0563	SLAMS	201730010	1	2	4	100	2	4	100	2	4	100	
07	KS	0563	SLAMS	201770013	1	2	4	100	2	4	100	2	4	100	
07	KS	0563	SLAMS	201910002	1	2	4	100	2	5	100	2	4	100	
07	KS	0563	SLAMS	202090022	1	2	4	100	2	2	100	2	4	100	
07	KS	All	All Sites					100			100			100	100
07	MO	0588	NCORE	295100085	1	2	3	100	2	2	100	2	3	100	
07	MO	0588	SLAMS	290210005	1	2	2	100	2	2	100				
07	MO	0588	SLAMS	290210005	3				1	0	0	2	2	100	
07	MO	0588	SLAMS	290370003	1	2	2	100	2	2	100				
07	MO	0588	SLAMS	290370003	3				1	0	0	2	2	100	
07	MO	0588	SLAMS	290390001	1	2	2	100	2	3	100				
07	MO	0588	SLAMS	290470005	1	2	3	100	2	2	100				
07	MO	0588	SLAMS	290470005	3				1	0	0	2	2	100	
07	MO	0588	SLAMS	290770032	1	2	2	100	2	2	100	2	2	100	
07	MO	0588	SLAMS	290950034	1	2	2	100	2	2	100	2	2	100	
07	MO	0588	SLAMS	290950034	3				1	0	0	2	2	100	
07	MO	0588	SLAMS	290990019	1	2	2	100	2	2	100				
07	MO	0588	SLAMS	290990019	3				1	0	0	2	2	100	
07	MO	0588	SLAMS	291860006	1	2	2	100	1	0	0				
07	MO	0588	SLAMS	291890015	1	1	1	100	1	0	0				
07	MO	0588	SLAMS	291892003	1	2	2	100	1	1	100				
07	MO	0588	SLAMS	291893001	3				1	0	0	2	2	100	
07	MO	0588	SLAMS	295100007	1	2	2	100	2	3	100	2	2	100	
07	MO	0588	SLAMS	295100093	1	2	3	100	2	2	100	2	2	100	
07	MO	0588	SPECIAL PURPOSE	295100087	1	2	2	100	1	1	100				
07	MO	All	All Sites					100			60			100	87
07	NE	0752	SLAMS	310790004	1	2	4	100	2	3	100	2	2	100	
07	NE	0752	SLAMS	311090022	1	2	3	100	2	3	100	2	2	100	
07	NE	0752	SLAMS	311570003	1	2	3	100	1	1	100				
07	NE	0752	SLAMS	311570004	1				2	1	50	2	3	100	
07	NE	0816	NCORE	310550019	1	2	2	100	2	2	100	2	2	100	
07	NE	0816	NCORE	310550019	3				1	1	100	2	2	100	
07	NE	0816	SLAMS	310550052	1	2	2	100	2	2	100	2	2	100	
07	NE	0816	SLAMS	311530007	1	2	2	100	2	2	100	1	1	100	
07	NE	0816	SLAMS	311530007	3							1	1	100	
07	NE	0816	SLAMS	311770002	1	2	2	100	2	2	100	2	2	100	
07	NE	All	All Sites					100			94			100	98
08	CO	0240	NCORE	080310025	1	2	4	100	2	4	100	2	4	100	
08	CO	0240	SLAMS	080010006	1	2	4	100	2	4	100	2	4	100	
08	CO	0240	SLAMS	080050005	1	2	4	100	2	4	100	2	4	100	
08	CO	0240	SLAMS	080130003	1	2	4	100	2	5	100	2	4	100	
08	CO	0240	SLAMS	080130012	1	2	4	100	2	5	100	2	4	100	
08	CO	0240	SLAMS	080310002	1	2	4	100	2	3	100	2	4	100	
08	CO	0240	SLAMS	080390001	1	2	4	100	2	5	100	2	4	100	
08	CO	0240	SLAMS	080410011	1	1	1	100							

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08	CO	0240	SLAMS	080410017	1	2	4	100	2	5	100	2	4	100	
08	CO	0240	SLAMS	080690009	1	2	4	100	2	5	100	2	4	100	
08	CO	0240	SLAMS	080770017	1	2	4	100	2	4	100	2	4	100	
08	CO	0240	SLAMS	081010012	1	2	4	100	1	2	100				
08	CO	0240	SLAMS	081010015	1				2	2	100	2	4	100	
08	CO	0240	SLAMS	081230006	1	2	4	100	2	4	100	2	4	100	
08	CO	0240	SLAMS	081230008	1	2	3	100	2	5	100	2	4	100	
08	CO	0240	SPECIAL PURPOSE	080310023	1	2	3	100	2	4	100	2	4	100	
08	CO	0240	SPECIAL PURPOSE	080350004	1	2	4	100	2	4	100	2	4	100	
08	CO	0240	SPECIAL PURPOSE	080830006	1	2	0	0	2	1	50	2	1	50	
08	CO	750	TRIBAL MONITORS	080677001	1				2	1	50	2	4	100	
08	CO	750	TRIBAL MONITORS	080677003	1				2	2	100	2	4	100	
08	CO	All	All Sites					94			94			97	95
08	MT	0730	SLAMS	300131026	1	2	2	100	2	4	100				
08	MT	0730	SLAMS	300290007	1	2	3	100	2	2	100	2	2	100	
08	MT	0730	SLAMS	300290009	1	2	2	100	2	2	100	1	1	100	
08	MT	0730	SLAMS	300290047	1	2	2	100	2	2	100	1	1	100	
08	MT	0730	SLAMS	300310006	1	2	2	100							
08	MT	0730	SLAMS	300310008	1	2	2	100	2	2	100	2	1	50	
08	MT	0730	SLAMS	300310016	1	1	1	100							
08	MT	0730	SLAMS	300310016	3	1	2	100	2	1	50	2	3	100	
08	MT	0730	SLAMS	300490018	1	2	3	100	1	2	100				
08	MT	0730	SLAMS	300490026	1	2	2	100	1	1	100				
08	MT	0730	SLAMS	300490026	3				1	1	100	2	2	100	
08	MT	0730	SLAMS	300530018	1	2	2	100	2	2	100	2	2	100	
08	MT	0730	SLAMS	300630024	3	1	1	100	2	2	100	2	2	100	
08	MT	0730	SLAMS	300630031	1	2	2	100	2	2	100	2	1	50	
08	MT	0730	SLAMS	300630037	3				1	1	100	2	2	100	
08	MT	0730	SLAMS	300750001	3							2	4	100	
08	MT	0730	SLAMS	300810007	1	2	2	100	2	2	100	1	0	0	
08	MT	0730	SLAMS	300870001	3							2	4	100	
08	MT	0730	SLAMS	300890007	1	2	2	100	2	2	100	2	2	100	
08	MT	0730	SLAMS	300930005	1	2	2	100	2	3	100	1	0	0	
08	MT	0730	SLAMS	301111065	1	2	4	100	2	2	100				
08	MT	0730	SPECIAL PURPOSE	300310013	1	1	1	100							
08	MT	0730	SPECIAL PURPOSE	300310018	1	1	0	0	2	2	100	2	1	50	
08	MT	0730	SPECIAL PURPOSE	300630021	1	2	2	100	2	2	100				
08	MT	All	All Sites					95			97			78	90
08	ND	0782	NCORE	380171004	1	2	4	100	2	4	100	2	4	100	
08	ND	0782	SLAMS	380070002	1	2	4	100	2	4	100	2	4	100	
08	ND	0782	SLAMS	380150003	1	2	2	100	2	2	100	2	0	0	
08	ND	0782	SLAMS	380570004	1	2	4	100	2	4	100	2	4	100	
08	ND	All	All Sites					100			100			75	92
08	SD	0973	NCORE	460990008	1	2	3	100	2	6	100	2	6	100	
08	SD	0973	SLAMS	460110002	1	2	5	100	2	6	100	2	6	100	

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08	SD	0973	SLAMS	460130003	1	2	5	100	2	6	100	2	6	100	
08	SD	0973	SLAMS	460290002	1	2	5	100	2	6	100	2	6	100	
08	SD	0973	SLAMS	460330132	1	2	4	100	2	6	100	2	6	100	
08	SD	0973	SLAMS	460710001	1	2	4	100							
08	SD	0973	SLAMS	460990006	1	2	5	100	2	6	100	2	6	100	
08	SD	0973	SLAMS	461030020	1	2	5	100	2	6	100	2	6	100	
08	SD	0973	SLAMS	461031001	1	2	5	100	2	9	100	2	9	100	
08	SD	0973	SLAMS	461270002	1				2	6	100	2	6	100	
08	SD	0973	SPECIAL PURPOSE	461270001	3				2	3	100	2	4	100	
08	SD	All	All Sites					100			100			100	100
08	UT	1113	SLAMS	490050004	1	2	12	100	2	12	100	2	12	100	
08	UT	1113	SLAMS	490110004	1	2	12	100	2	12	100	2	12	100	
08	UT	1113	SLAMS	490350003	1	2	12	100	2	12	100	2	12	100	
08	UT	1113	SLAMS	490353006	1	2	12	100	2	12	100	2	12	100	
08	UT	1113	SLAMS	490353007	1	2	4	100	2	0	0	2	0	0	
08	UT	1113	SLAMS	490353010	1	2	12	100	2	12	100	2	12	100	
08	UT	1113	SLAMS	490490002	1	2	12	100	2	12	100	2	12	100	
08	UT	1113	SLAMS	490494001	1	2	12	100	2	12	100	2	12	100	
08	UT	1113	SLAMS	490570002	1	2	12	100	2	12	100	2	12	100	
08	UT	1113	SLAMS	490571003	1	2	12	100	2	12	100	2	12	100	
08	UT	1113	SPECIAL PURPOSE	490030003	1	2	12	100	2	12	100	2	12	100	
08	UT	1113	SPECIAL PURPOSE	490351001	1	2	12	100	2	12	100	2	12	100	
08	UT	1113	SPECIAL PURPOSE	490353008	1	2	4	100	2	0	0	2	0	0	
08	UT	1113	SPECIAL PURPOSE	490450003	1	2	12	100	2	12	100	2	12	100	
08	UT	1113	SPECIAL PURPOSE	490495008	1	2	12	100	2	12	100	2	12	100	
08	UT	1113	SPECIAL PURPOSE	490495010	1	2	12	100	2	12	100	2	12	100	
08	UT	1113	SPECIAL PURPOSE	490570007	1	2	4	100	2	0	0	2	0	0	
08	UT	All	All Sites					100			82			82	88
08	WY	0527	SPECIAL PURPOSE	560051899	1	1	2	100	2	2	100				
08	WY	1188	SLAMS	560010006	1				1	1	100	2	2	100	
08	WY	1188	SLAMS	560131003	1	2	2	100	2	2	100	2	2	100	
08	WY	1188	SLAMS	560210001	1	2	2	100	2	2	100	2	2	100	
08	WY	1188	SLAMS	560250001	1				2	1	50	2	3	100	
08	WY	1188	SLAMS	560290001	1	2	1	50	2	2	100	2	2	100	
08	WY	1188	SLAMS	560330002	1	2	4	100	2	2	100	2	2	100	
08	WY	1188	SLAMS	560330003	1	2	4	100	2	2	100	2	2	100	
08	WY	1188	SLAMS	560370007	1	2	2	100	2	2	100	2	2	100	
08	WY	1188	SLAMS	560391006	1	2	2	100	2	2	100	2	2	100	
08	WY	1188	SPECIAL PURPOSE	560050891	1	2	2	100	2	2	100	1	1	100	
08	WY	1188	SPECIAL PURPOSE	560050892	1	1	1	100	2	2	100	1	1	100	
08	WY	1188	SPECIAL PURPOSE	560050899	1	1	1	100							
08	WY	1188	SPECIAL PURPOSE	560090819	1	1	2	100	2	2	100	1	1	100	
08	WY	1188	SPECIAL PURPOSE	560350101	1				2	2	100	2	3	100	
08	WY	1188	SPECIAL PURPOSE	560350705	1	2	3	100	2	2	100	2	2	100	
08	WY	All	All Sites					96			96			100	97

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Region	State	PQAO	Monitor Type	Site ID	POC	2008 Required	2008 Submitted	2008 % Complete	2009 Required	2009 Submitted	2009 % Complete	2010 Required	2010 Submitted	2010 % Complete	3 Year comp %
09	AZ	0053	NCORE	040139997	1	2	2	100	2	2	100	2	3	100	
09	AZ	0053	SLAMS	040031005	1	2	2	100	2	2	100	2	2	100	
09	AZ	0053	SLAMS	040051008	1	2	3	100	2	2	100	2	2	100	
09	AZ	0053	SLAMS	040230004	1	2	2	100	2	3	100	2	2	100	
09	AZ	0053	SLAMS	040252002	1	2	2	100	2	2	100	2	2	100	
09	AZ	0053	SLAMS	040270004	1	2	2	100	2	2	100				
09	AZ	0053	SLAMS	040278011	1							2	2	100	
09	AZ	615	SLAMS	040137020	1	2	4	100	2	4	100	2	4	100	
09	AZ	0643	SLAMS	040130019	1	2	2	100	2	1	50	2	2	100	
09	AZ	0643	SLAMS	040131003	1	2	0	0	2	3	100	2	2	100	
09	AZ	0643	SLAMS	040134003	1	2	1	50	2	2	100	2	2	100	
09	AZ	0643	SLAMS	040139812	3							2	1	50	
09	AZ	0864	NCORE	040191028	1	2	4	100	2	4	100	2	4	100	
09	AZ	0864	SLAMS	040190011	1	2	4	100	2	4	100	2	4	100	
09	AZ	0865	SLAMS	040210001	1	2	2	100	2	2	100	2	2	100	
09	AZ	0865	SLAMS	040213002	1	2	3	100	2	2	100	2	2	100	
09	AZ	0865	SPECIAL PURPOSE	040213013	1	2	2	100	2	3	100	2	2	100	
09	AZ	All	All Sites					90			96			96	94
09	CA	0086	NCORE	060850005	1	2	5	100	2	4	100	2	4	100	
09	CA	0086	SLAMS	060010007	1	2	5	100	2	4	100	2	5	100	
09	CA	0086	SLAMS	060010009	1	2	5	100	2	3	100				
09	CA	0086	SLAMS	060010009	3				1	2	100	2	3	100	
09	CA	0086	SLAMS	060011001	1	2	6	100	2	4	100				
09	CA	0086	SLAMS	060011001	3				1	2	100	2	4	100	
09	CA	0086	SLAMS	060130002	1	2	4	100	2	4	100	2	4	100	
09	CA	0086	SLAMS	060333001	1	2	1	50	2	1	50	2	2	100	
09	CA	0086	SLAMS	060410001	3				1	2	100	2	4	100	
09	CA	0086	SLAMS	060531003	1	2	1	50	2	2	100				
09	CA	0086	SLAMS	060690002	1	2	1	50	2	2	100				
09	CA	0086	SLAMS	060750005	1	2	5	100	2	4	100				
09	CA	0086	SLAMS	060750005	3				1	2	100	2	5	100	
09	CA	0086	SLAMS	060811001	1	2	4	100	2	3	100				
09	CA	0086	SLAMS	060811001	3				1	1	100	2	5	100	
09	CA	0086	SLAMS	060850002	1	2	4	100	2	5	100				
09	CA	0086	SLAMS	060850002	3				1	0	0	2	5	100	
09	CA	0086	SLAMS	060870007	1	2	1	50	2	1	50				
09	CA	0086	SLAMS	060950004	1	2	5	100	2	4	100	2	4	100	
09	CA	0086	SLAMS	060970003	1	2	5	100	2	4	100				
09	CA	0086	SLAMS	060970003	3				1	2	100	2	5	100	
09	CA	0145	NCORE	060190008	1	2	1	50	2	2	100	2	1	50	
09	CA	0145	NCORE	060670006	1	2	0	0	2	1	50	2	1	50	
09	CA	0145	SLAMS	060070002	1	2	0	0	2	2	100	2	3	100	
09	CA	0145	SLAMS	060090001	1	2	1	50	2	2	100	1	0	0	
09	CA	0145	SLAMS	060090001	3							2	1	50	
09	CA	0145	SLAMS	060111002	1	2	1	50	2	2	100	2	2	100	

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Region	State	PQAO	Monitor Type	Site ID	POC	2008 Required	2008 Submitted	2008 % Complete	2009 Required	2009 Submitted	2009 % Complete	2010 Required	2010 Submitted	2010 % Complete	3 Year comp %
09	CA	0145	SLAMS	060195001	1	2	1	50	2	0	0	2	0	0	
09	CA	0145	SLAMS	060195025	1	2	1	50	2	1	50	2	1	50	
09	CA	0145	SLAMS	060231002	1	2	1	50	2	5	100	2	2	100	
09	CA	0145	SLAMS	060271003	1	2	2	100	2	0	0	2	2	100	
09	CA	0145	SLAMS	060290010	1	2	1	50	2	0	0	2	0	0	
09	CA	0145	SLAMS	060290014	1	2	1	50	2	2	100	2	2	100	
09	CA	0145	SLAMS	060290016	1	2	1	50	2	2	100	2	2	100	
09	CA	0145	SLAMS	060310004	1	2	1	50	2	1	50	2	2	100	
09	CA	0145	SLAMS	060311004	3							2	1	50	
09	CA	0145	SLAMS	060379033	1	2	1	50	2	2	100	2	2	100	
09	CA	0145	SLAMS	060392010	3							1	1	100	
09	CA	0145	SLAMS	060452002	3				1	0	0	2	2	100	
09	CA	0145	SLAMS	060472510	1	2	1	50	2	1	50	2	2	100	
09	CA	0145	SLAMS	060531003	3							2	2	100	
09	CA	0145	SLAMS	060570005	1	2	1	50	2	1	50	2	2	100	
09	CA	0145	SLAMS	060571001	1	2	0	0	2	0	0	2	3	100	
09	CA	0145	SLAMS	060610006	1	2	2	100	2	1	50	2	1	50	
09	CA	0145	SLAMS	060631006	1	2	1	50	2	1	50	2	3	100	
09	CA	0145	SLAMS	060631009	1	2	1	50	2	0	0	2	3	100	
09	CA	0145	SLAMS	060670010	1	2	1	50	2	0	0	2	2	100	
09	CA	0145	SLAMS	060674001	1	2	1	50	2	1	50	2	3	100	
09	CA	0145	SLAMS	060690002	3							2	2	100	
09	CA	0145	SLAMS	060710306	1	2	1	50	2	1	50	2	2	100	
09	CA	0145	SLAMS	060771002	1	2	1	50	2	1	50	1	0	0	
09	CA	0145	SLAMS	060771002	3							2	2	100	
09	CA	0145	SLAMS	060792004	1				1	0	0	2	4	100	
09	CA	0145	SLAMS	060792006	1	2	0	0	2	1	50	2	2	100	
09	CA	0145	SLAMS	060798001	1	2	0	0	2	1	50	2	0	0	
09	CA	0145	SLAMS	060830011	1	2	0	0	2	1	50	2	0	0	
09	CA	0145	SLAMS	060830011	3							2	1	50	
09	CA	0145	SLAMS	060831008	1	2	1	50	2	2	100	2	0	0	
09	CA	0145	SLAMS	060831008	3							2	2	100	
09	CA	0145	SLAMS	060870007	3							2	2	100	
09	CA	0145	SLAMS	060890004	1	2	1	50	2	1	50	2	2	100	
09	CA	0145	SLAMS	060932001	1	1	0	0	2	1	50	2	2	100	
09	CA	0145	SLAMS	060990005	1	2	1	50	2	2	100	2	2	100	
09	CA	0145	SLAMS	060990005	3							2	2	100	
09	CA	0145	SLAMS	060990006	3	1	0	0	2	0	0	2	2	100	
09	CA	0145	SLAMS	061010003	1	2	1	50	2	2	100	2	2	100	
09	CA	0145	SLAMS	061072002	1	2	1	50	2	1	50	2	2	100	
09	CA	0145	SLAMS	061110007	1	2	1	50	2	0	0	2	2	100	
09	CA	0145	SLAMS	061110009	1	2	1	50	2	1	50	2	2	100	
09	CA	0145	SLAMS	061112002	1	2	1	50	2	1	50	2	2	100	
09	CA	0145	SLAMS	061113001	1	2	1	50	2	1	50	2	2	100	
09	CA	0145	SLAMS	061131003	1	2	1	50	2	1	50	2	2	100	

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Region	State	PQAO	Monitor Type	Site ID	POC	2008 Required	2008 Submitted	2008 % Complete	2009 Required	2009 Submitted	2009 % Complete	2010 Required	2010 Submitted	2010 % Complete	3 Year comp %
09	CA	0145	SPECIAL PURPOSE	060192009	3				1	0	0	2	2	100	
09	CA	0145	SPECIAL PURPOSE	060231004	1	2	1	50	2	5	100	2	2	100	
09	CA	586	TRIBAL MONITORS	060650009	1							1	1	100	
09	CA	0942	NCORE	060730003	1	2	1	50	2	0	0	2	0	0	
09	CA	0942	SLAMS	060250005	1	2	0	0	2	1	50	2	2	100	
09	CA	0942	SLAMS	060250007	1	2	1	50	2	0	0	2	1	50	
09	CA	0942	SLAMS	060251003	1	2	1	50	2	0	0	2	2	100	
09	CA	0942	SLAMS	060290011	1	2	1	50	2	0	0	2	2	100	
09	CA	0942	SLAMS	060290015	1	2	1	50	2	0	0	2	2	100	
09	CA	0942	SLAMS	060730001	1	2	1	50	2	0	0	2	0	0	
09	CA	0942	SLAMS	060730006	1	2	1	50	2	1	50	2	1	50	
09	CA	0942	SLAMS	060731002	1	2	1	50	2	1	50	2	1	50	
09	CA	0942	SLAMS	060731010	1	2	1	50	2	1	50	2	1	50	
09	CA	0972	NCORE	060371103	1	2	2	100	2	3	100	2	1	50	
09	CA	0972	NCORE	060658001	1	2	2	100	2	1	50	2	2	100	
09	CA	0972	SLAMS	060370002	1	2	2	100	2	2	100	2	2	100	
09	CA	0972	SLAMS	060371002	1	2	2	100	2	2	100	2	3	100	
09	CA	0972	SLAMS	060371201	1	2	1	50	2	2	100	2	2	100	
09	CA	0972	SLAMS	060371301	1	2	2	100							
09	CA	0972	SLAMS	060371302	1	1	0	0	2	1	50	2	2	100	
09	CA	0972	SLAMS	060371602	1	2	1	50	2	2	100	2	2	100	
09	CA	0972	SLAMS	060372005	1	2	2	100	2	2	100	2	2	100	
09	CA	0972	SLAMS	060374002	1	2	1	50	2	2	100	2	2	100	
09	CA	0972	SLAMS	060374004	1	2	2	100	2	2	100	2	2	100	
09	CA	0972	SLAMS	060590007	1	2	1	50	2	3	100	2	2	100	
09	CA	0972	SLAMS	060592022	1	2	1	50	2	2	100	2	2	100	
09	CA	0972	SLAMS	060651003	1	2	1	50	2	2	100	2	2	100	
09	CA	0972	SLAMS	060652002	1	2	2	100	2	1	50	2	2	100	
09	CA	0972	SLAMS	060655001	1	2	2	100	2	3	100	2	2	100	
09	CA	0972	SLAMS	060658005	1	2	0	0	2	1	50	2	0	0	
09	CA	0972	SLAMS	060710025	1	2	2	100	2	2	100	2	2	100	
09	CA	0972	SLAMS	060712002	1	2	2	100	2	2	100	2	3	100	
09	CA	0972	SLAMS	060718001	1	2	1	50	2	2	100	2	2	100	
09	CA	0972	SLAMS	060719004	1	2	1	50	2	1	50	2	2	100	
09	CA	All	All Sites					57			64			83	68
09	HI	0481	PROPOSED NCORE	150030010	1	2	3	100	2	2	100	2	3	100	
09	HI	0481	SLAMS	150031001	1	2	3	100	1	1	100				
09	HI	0481	SLAMS	150031001	3				2	2	100	2	4	100	
09	HI	0481	SLAMS	150031004	1	2	3	100	1	1	100				
09	HI	0481	SLAMS	150031004	2				2	4	100	2	4	100	
09	HI	0481	SLAMS	150032004	1	2	3	100	2	2	100	2	3	100	
09	HI	0481	SLAMS	150032004	4				2	2	100	2	3	100	
09	HI	0481	SLAMS	150090006	1	2	3	100							
09	HI	0481	SLAMS	150090006	2	1	0	0	2	4	100	2	3	100	
09	HI	0481	SPECIAL PURPOSE	150011006	1	2	0	0	2	3	100	2	1	50	

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Region	State	PQAO	Monitor Type	Site ID	POC	2008 Required	2008 Submitted	2008 % Complete	2009 Required	2009 Submitted	2009 % Complete	2010 Required	2010 Submitted	2010 % Complete	3 Year comp %
09	HI	0481	SPECIAL PURPOSE	150011012	1	2	0	0	2	2	100	2	2	100	
09	HI	0481	SPECIAL PURPOSE	150012016	1	2	0	0	2	3	100	2	1	50	
09	HI	0481	SPECIAL PURPOSE	150012017	1	2	0	0	2	5	100	2	1	50	
09	HI	0481	SPECIAL PURPOSE	150012020	1							2	1	50	
09	HI	All	All Sites					50			100			81	77
09	NV	0226	SLAMS	320030561	1	2	3	100	2	3	100	2	3	100	
09	NV	0226	SLAMS	320031019	1	2	2	100	2	3	100	2	4	100	
09	NV	0226	SLAMS	320032002	1	2	2	100	2	3	100	2	3	100	
09	NV	1138	NCORE	320310016	1	2	4	100	2	4	100	2	4	100	
09	NV	All	All Sites					100			100			100	100
10	AK	0015	SLAMS	020200018	1	2	1	50	2	3	100	2	4	100	
10	AK	0015	SLAMS	020900010	1	2	3	100	2	2	100	2	4	100	
10	AK	0015	SLAMS	021100004	3				1	2	100	2	4	100	
10	AK	0015	SLAMS	021700008	1	2	2	100	2	4	100	2	4	100	
10	AK	0015	SPECIAL PURPOSE	021100004	1	2	3	100	2	4	100	2	4	100	
10	AK	0015	SPECIAL PURPOSE	021700012	3							2	1	50	
10	AK	0732	SPECIAL PURPOSE	020200052	3				2	3	100	2	4	100	
10	AK	0732	SPECIAL PURPOSE	020201004	3				2	3	100	2	4	100	
10	AK	All	All Sites					87			100			93	93
10	ID	180	TRIBAL MONITORS	160050020	1	2	1	50	2	2	100	2	1	50	
10	ID	180	TRIBAL MONITORS	160770011	3				1	1	100				
10	ID	0511	NCORE	160010010	1	2	4	100	2	2	100	2	3	100	
10	ID	0511	SLAMS	160010011	1	2	4	100	2	3	100				
10	ID	0511	SLAMS	160090010	1	2	4	100	2	2	100	2	2	100	
10	ID	0511	SLAMS	160270002	1	2	2	100	2	2	100	2	2	100	
10	ID	0511	SLAMS	160270004	1	1	2	100							
10	ID	0511	SLAMS	160410001	1	2	4	100	2	2	100	2	0	0	
10	ID	0511	SLAMS	160590004	1	2	4	100	2	2	100	2	2	100	
10	ID	0511	SLAMS	160790017	1	2	4	100	2	2	100	2	2	100	
10	ID	All	All Sites					94			100			78	91
10	OR	0821	NCORE	410510080	1	2	2	100	2	1	50	2	2	100	
10	OR	0821	SLAMS	410130100	1				2	0	0	2	2	100	
10	OR	0821	SLAMS	410170120	1	2	2	100	2	2	100	2	2	100	
10	OR	0821	SLAMS	410250002	1	2	2	100	2	2	100	1	0	0	
10	OR	0821	SLAMS	410250003	1				1	0	0	2	2	100	
10	OR	0821	SLAMS	410290133	1	2	3	100	2	2	100	2	2	100	
10	OR	0821	SLAMS	410291001	1	2	2	100	2	2	100	2	1	50	
10	OR	0821	SLAMS	410330114	1	2	2	100	2	2	100	2	2	100	
10	OR	0821	SLAMS	410350004	1	2	2	100	2	1	50	2	2	100	
10	OR	0821	SLAMS	410370001	1	2	2	100	2	2	100	2	2	100	
10	OR	0821	SLAMS	410390058	1	2	1	50	2	0	0	2	2	100	
10	OR	0821	SLAMS	410390060	1	2	2	100	2	0	0	2	2	100	
10	OR	0821	SLAMS	410391009	1	2	1	50	2	0	0	2	2	100	
10	OR	0821	SLAMS	410392013	1	2	3	100	2	1	50	2	2	100	
10	OR	0821	SLAMS	410399004	1	2	2	100	2	0	0	2	2	100	

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Region	State	PQAO	Monitor Type	Site ID	POC	2008 Required	2008 Submitted	2008 % Complete	2009 Required	2009 Submitted	2009 % Complete	2010 Required	2010 Submitted	2010 % Complete	3 Year comp %
10	OR	0821	SLAMS	410510246	1	2	2	100	2	2	100	2	2	100	
10	OR	0821	SLAMS	410590121	1	2	1	50	2	1	50	2	2	100	
10	OR	0821	SLAMS	410610119	1	2	1	50	2	1	50	2	2	100	
10	OR	0821	SLAMS	410670004	1	2	2	100	2	1	50	2	2	100	
10	OR	All	All Sites					88			52			92	77
10	WA	124	TRIBAL MONITORS	530770015	1	1	1	100							
10	WA	1136	NCORE	530330080	1	2	4	100	2	3	100	2	2	100	
10	WA	1136	SLAMS	530030004	1	1	1	100							
10	WA	1136	SLAMS	530110013	1	2	3	100	2	2	100	2	2	100	
10	WA	1136	SLAMS	530330057	1	2	2	100	2	2	100				
10	WA	1136	SLAMS	530530029	1	2	2	100	2	4	100	2	3	100	
10	WA	1136	SLAMS	530610020	1	2	2	100	2	2	100	2	3	100	
10	WA	1136	SLAMS	530611007	1	2	1	50	2	3	100	2	3	100	
10	WA	1136	SLAMS	530630016	1	2	2	100	1	0	0				
10	WA	1136	SLAMS	530630021	1				2	2	100	2	2	100	
10	WA	1136	SLAMS	530770009	1	2	3	100	2	2	100	2	2	100	
10	WA	1136	TRIBAL MONITORS	530470013	1							1	1	100	
10	WA	1136	TRIBAL MONITORS	530770016	1				1	1	100	1	1	100	
10	WA	All	All Sites					95			90			100	95

Attachment 4B. PM_{2.5} Flow Rate Completeness, 2008–2010 POCs greater than POC-1

Region	State	PQAO	Monitor Type	Site ID	POC	2008 Required	2008 Submitted	2008 % Complete	2009 Required	2009 Submitted	2009 % Complete	2010 Required	2010 Submitted	2010 % Complete	3 Year comp %
01	CT	0251	SLAMS	090090027	2	2	0	0	2	2	100	2	2	100	67
01	CT	All	All Sites					0			100			100	
01	MA	0660	SLAMS	250130008	2	2	4	100	2	3	100	2	2	100	
01	MA	0660	SLAMS	250230004	2	2	4	100	2	4	100	2	2	100	100
01	MA	0660	SLAMS	250250043	2	2	4	100	2	4	100	2	2	100	
01	MA	All	All Sites					100			100			100	
01	ME	0635	SPECIAL PURPOSE	230031008	2				2	3	100	2	4	100	100
01	ME	0635	SPECIAL PURPOSE	230050029	2	2	4	100	2	3	100	2	4	100	
01	ME	All	All Sites					100			100			100	
01	NH	0762	SLAMS	330012004	2	2	4	100							100
01	NH	0762	SLAMS	330131006	2	2	4	100	2	4	100	2	4	100	
01	NH	All	All Sites					100			100			100	
01	RI	0907	NCORE	440071010	2							1	1	100	71
01	RI	0907	SLAMS	440030002	2	1	0	0	2	1	50	2	3	100	
01	RI	0907	SLAMS	440030002	3	1	1	100	2	14	100	2	14	100	
01	RI	0907	SLAMS	440070022	2	2	1	50	2	2	100	2	2	100	
01	RI	0907	SLAMS	440070026	2				1	0	0	1	1	100	
01	RI	All	All Sites					50			62			100	
01	VT	1119	SLAMS	500070012	2	2	4	100	2	4	100	2	4	100	100
01	VT	All	All Sites					100			100			100	
02	NJ	0764	SLAMS	340070003	2	2	3	100							
02	NJ	0764	SLAMS	340171003	2	2	7	100	2	4	100	2	4	100	100
02	NJ	0764	SLAMS	340390004	2	2	3	100	2	4	100	2	6	100	
02	NJ	0764	SLAMS	340390004	3							2	4	100	
02	NJ	All	All Sites					100			100			100	100
03	DC	0350	SLAMS	110010041	2	2	4	100	2	4	100	2	4	100	
03	DC	All	All Sites					100			100			100	
03	DE	0294	NCORE	100032004	2	2	2	100	2	2	100	2	2	100	92
03	DE	0294	NCORE	100032004	3							2	1	50	
03	DE	All	All Sites					100			100			75	
03	MD	1002	NCORE	240330030	2							1	1	100	100
03	MD	1002	NCORE	240330030	3							1	4	100	
03	MD	1002	SLAMS	240150003	3							1	4	100	
03	MD	1002	SLAMS	240313001	3							1	4	100	
03	MD	1002	SLAMS	240338003	2	2	4	100	2	2	100	2	2	100	
03	MD	1002	SLAMS	240430009	3							1	1	100	
03	MD	1002	SLAMS	245100035	2	2	7	100							
03	MD	1002	SLAMS	245100040	3							1	3	100	
03	MD	All	All Sites					100			100			100	
03	PA	0021	SLAMS	420030064	2	2	12	100	2	12	100	2	12	100	100
03	PA	0021	NCORE	420030008	2	2	12	100	2	12	100	2	12	100	
03	PA	0851	SLAMS	420210011	3				2	2	100	2	2	100	
03	PA	0851	SLAMS	420410101	3				2	2	100	2	2	100	
03	PA	0851	SLAMS	420710007	2				2	2	100	2	2	100	
03	PA	0861	SLAMS	421010004	2	2	4	100	2	4	100	2	4	100	
03	PA	0861	SLAMS	421010047	4	2	4	100	2	5	100	2	4	100	
03	PA	0861	SLAMS	421010057	4	2	3	100	1	0	0				

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Region	State	PQAO	Monitor Type	Site ID	POC	2008 Required	2008 Submitted	2008 % Complete	2009 Required	2009 Submitted	2009 % Complete	2010 Required	2010 Submitted	2010 % Complete	3 Year comp %
03	PA	All	All Sites					100			87			100	96
03	VA	1127	NCORE	510870014	2	2	2	100	2	2	100	2	2	100	
03	VA	1127	SLAMS	510130020	2	2	2	100	2	2	100	2	3	100	
03	VA	1127	SLAMS	517100024	2	2	2	100	2	2	100	2	2	100	
03	VA	All	All Sites					100			100			100	100
03	WV	1150	SLAMS	540090011	2	2	2	100	2	2	100	2	2	100	
03	WV	1150	SLAMS	540110006	2	2	2	100	2	3	100	2	2	100	
03	WV	All	All Sites					100			100			100	100
04	AL	0013	SLAMS	011011002	1				2	0	0	2	4	100	
04	AL	0013	SPECIAL PURPOSE	010331002	3				2	2	100	2	4	100	
04	AL	0013	SPECIAL PURPOSE	010690003	3				1	1	100	2	3	100	
04	AL	0013	SPECIAL PURPOSE	011011002	3				2	2	100	2	3	100	
04	AL	0013	SPECIAL PURPOSE	011030011	3				2	2	100	2	4	100	
04	AL	0013	SPECIAL PURPOSE	011250004	3				1	1	100	2	4	100	
04	AL	All	All Sites								83			100	92
04	FL	1328	NCORE	120573002	2							2	3	100	
04	FL	1328	SLAMS	120010023	2	2	2	100	2	2	100	2	2	100	
04	FL	1328	SLAMS	120111002	2	2	2	100	2	2	100	2	3	100	
04	FL	1328	SLAMS	120310099	2	2	2	100	2	2	100	2	2	100	
04	FL	1328	SLAMS	120330004	2	2	2	100	2	2	100	2	2	100	
04	FL	1328	SLAMS	120570030	2	2	2	100	2	2	100				
04	FL	1328	SLAMS	120710005	2	2	2	100	2	2	100	2	2	100	
04	FL	1328	SLAMS	120730012	2	2	2	100	2	2	100	2	2	100	
04	FL	1328	SLAMS	120861016	2	2	2	100	2	2	100	2	2	100	
04	FL	1328	SLAMS	120952002	2	2	2	100	2	2	100	2	3	100	
04	FL	1328	SLAMS	120990009	2	1	0	0	2	3	100	2	2	100	
04	FL	1328	SLAMS	120992005	2	2	1	50							
04	FL	1328	SLAMS	121030018	2	2	2	100	2	2	100	2	2	100	
04	FL	1328	SLAMS	121056006	2	2	2	100	2	2	100	2	2	100	
04	FL	1328	SLAMS	121111002	2	2	3	100	2	2	100	2	3	100	
04	FL	1328	SLAMS	121150013	2	2	2	100	2	2	100	2	1	50	
04	FL	1328	SLAMS	121171002	2	2	3	100	2	2	100	2	2	100	
04	FL	1328	SPECIAL PURPOSE	120170005	2	2	2	100	2	2	100	2	2	100	
04	FL	1328	SPECIAL PURPOSE	120990008	3				2	2	100	2	1	50	
04	FL	All	All Sites					91			100			94	95
04	GA	0437	SLAMS	130210007	2	2	3	100	2	2	100	2	2	100	
04	GA	0437	SLAMS	130890002	2	1	0	0	2	2	100	2	3	100	
04	GA	0437	SLAMS	131210032	2				1	2	100	2	2	100	
04	GA	0437	SLAMS	132450005	2	2	2	100	2	2	100	2	3	100	
04	GA	All	All Sites					66			100			100	89
04	KY	0584	SLAMS	210930006	2				1	0	0	2	4	100	
04	KY	0584	SLAMS	211010014	2	2	2	100	2	3	100				
04	KY	0584	SLAMS	211950002	2	2	2	100	2	4	100	2	4	100	
04	KY	0584	SLAMS	212270008	2	2	2	100	2	4	100	2	4	100	
04	KY	0584	SPECIAL PURPOSE	210373002	3							1	1	100	
04	KY	All	All Sites					100			75			100	92
04	NC	001	TRIBAL MONITORS	370990006	2	2	2	100	2	4	100	2	4	100	

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Region	State	PQAO	Monitor Type	Site ID	POC	2008 Required	2008 Submitted	2008 % Complete	2009 Required	2009 Submitted	2009 % Complete	2010 Required	2010 Submitted	2010 % Complete	3 Year comp %
04	NC	0776	NCORE	371830014	2	2	4	100	2	4	100	2	4	100	
04	NC	0776	NCORE	371830014	3				2	2	100	2	4	100	
04	NC	0776	SLAMS	370210034	2	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	370350004	2	1	2	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	370670022	2	2	0	0	2	6	100	2	5	100	
04	NC	0776	SLAMS	370670022	3	2	0	0	2	4	100	2	0	0	
04	NC	0776	SLAMS	370670030	2	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	370810013	2	2	4	100	2	4	100	2	3	100	
04	NC	0776	SLAMS	371110004	2	2	4	100	2	4	100	2	4	100	
04	NC	0776	SLAMS	371190042	2	2	5	100	2	5	100	2	6	100	
04	NC	0776	SPECIAL PURPOSE	371230001	2				1	1	100				
04	NC	All	All Sites					80			100			90	90
04	SC	0971	SLAMS	450450009	2	2	27	100	2	27	100	2	24	100	
04	SC	0971	SLAMS	450790019	2	2	26	100	2	28	100	2	26	100	
04	SC	0971	SPECIAL PURPOSE	450190048	2	2	23	100	2	27	100	2	24	100	
04	SC	All	All Sites					100			100			100	100
04	TN	1025	SLAMS	470370023	2	2	16	100	2	16	100	2	19	100	
04	TN	1025	SLAMS	470654002	2	2	12	100	2	13	100	2	17	100	
04	TN	1025	SLAMS	471130006	2	2	4	100	2	4	100	2	4	100	
04	TN	1025	SLAMS	471570047	2	2	4	100	2	4	100	2	4	100	
04	TN	1025	SLAMS	471650007	2	2	4	100	2	4	100	2	4	100	
04	TN	1025	SPECIAL PURPOSE	470650031	2	2	0	0	2	15	100				
04	TN	All	All Sites					83			100			100	94
05	IN	0520	PROPOSED NCORE	180970078	3							2	4	100	
05	IN	0520	SLAMS	180431004	2	2	4	100	2	4	100	2	4	100	
05	IN	0520	SLAMS	180890031	2	2	5	100	2	4	100	2	4	100	
05	IN	0520	SLAMS	180970081	2				2	4	100	2	4	100	
05	IN	0520	SLAMS	181410015	2	2	4	100	2	4	100	2	4	100	
05	IN	0520	SLAMS	181570008	2	2	4	100	2	5	100	2	4	100	
05	IN	0520	SLAMS	181630006	2	2	4	100	1	1	100				
05	IN	0520	SLAMS	181630020	2				2	3	100	2	4	100	
05	IN	All	All Sites					100			100			100	100
05	MI	0685	NCORE	260810020	2	2	2	100	2	2	100	2	2	100	
05	MI	0685	SLAMS	260770008	2	2	2	100	2	2	100	2	2	100	
05	MI	0685	SLAMS	261610008	2	2	2	100	2	2	100	2	2	100	
05	MI	0685	SLAMS	261630001	2	2	2	100	2	2	100				
05	MI	0685	SLAMS	261630033	2							2	2	100	
05	MI	All	All Sites					100			100			100	100
05	MN	0700	SLAMS	271230866	2	2	2	100	2	2	100				
05	MN	All	All Sites					100			100				100
05	OH	0012	SLAMS	391530017	3							2	3	100	
05	OH	All	All Sites											100	100
05	WI	1175	SLAMS	550090005	2	2	12	100	2	12	100	2	11	100	
05	WI	1175	SLAMS	550250041	1							2	9	100	
05	WI	1175	SLAMS	550790026	2	2	12	100	2	12	100	2	12	100	
05	WI	1175	SLAMS	551110007	2	2	12	100	2	12	100	2	12	100	
05	WI	1175	TRIBAL MONITORS	550030010	2	2	12	100	2	12	100	2	12	100	

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Region	State	PQAO	Monitor Type	Site ID	POC	2008 Required	2008 Submitted	2008 % Complete	2009 Required	2009 Submitted	2009 % Complete	2010 Required	2010 Submitted	2010 % Complete	3 Year comp %
05	WI	1175	TRIBAL MONITORS	550410007	2	2	12	100	2	13	100	2	6	100	100
05	WI	All	All Sites					100			100			100	
06	AR	0055	SLAMS	050010011	2	2	4	100	2	4	100	2	4	100	
06	AR	0055	SLAMS	050450002	2	2	4	100	2	4	100	2	4	100	
06	AR	0055	SLAMS	051190007	2	2	4	100	2	4	100	2	4	100	
06	AR	0055	SLAMS	051310008	2	2	4	100	2	4	100	2	4	100	100
06	AR	All	All Sites					100			100			100	
06	LA	1001	SLAMS	220170008	2	2	0	0	2	2	100	2	2	100	
06	LA	1001	SLAMS	220330009	2	2	0	0	2	2	100	2	2	100	
06	LA	1001	SLAMS	221050001	2	2	0	0	2	2	100	2	2	100	
06	LA	All	All Sites					0			100			100	67
06	NM	0017	NCORE	350010023	2	2	3	100	2	3	100	2	4	100	100
06	NM	All	All Sites					100			100			100	
06	OK	807	TRIBAL MONITORS	400159008	2	2	6	100	2	4	100	2	4	100	
06	OK	0812	SLAMS	401090035	2	2	2	100	2	2	100	2	2	100	
06	OK	905	NCORE	400019009	2				2	1	50	2	2	100	
06	OK	905	TRIBAL MONITORS	401359015	2	2	1	50	2	1	50	1	1	100	89
06	OK	920	TRIBAL MONITORS	401159004	2	2	10	100	2	7	100	2	2	100	
06	OK	All	All Sites					87			80			100	
06	TX	1035	SLAMS	481130069	2	2	5	100	2	5	100	2	5	100	
06	TX	1035	SLAMS	482011035	2	2	5	100	2	5	100	2	4	100	
06	TX	1035	SLAMS	483550032	2	2	4	100	2	4	100	2	4	100	100
06	TX	1035	SLAMS	484391002	2	1	1	100							
06	TX	All	All Sites					100			100			100	
07	KS	0563	NCORE	202090021	2	2	4	100	2	4	100	2	4	100	
07	KS	All	All Sites					100			100			100	
07	MO	0588	SLAMS	290950034	2	2	2	100	2	1	50				92
07	MO	0588	SLAMS	295100085	2	2	3	100	2	2	100	2	2	100	
07	MO	All	All Sites					100			75			100	
07	NE	0752	SLAMS	311090022	2	2	3	100	2	3	100	2	2	100	
07	NE	0816	SLAMS	310550019	2	2	2	100	2	2	100				
07	NE	All	All Sites					100			100			100	100
08	CO	0240	SLAMS	080010006	2	2	4	100	2	4	100	2	4	100	94
08	CO	0240	SLAMS	080310002	2	2	4	100	2	3	100	2	4	100	
08	CO	750	TRIBAL MONITORS	080677001	2				2	1	50	2	4	100	
08	CO	All	All Sites					100			83			100	
08	MT	0730	SLAMS	300290009	3							2	1	50	
08	MT	0730	SLAMS	300290047	3							2	1	50	87
08	MT	0730	SLAMS	300490018	3	1	2	100	1	2	100				
08	MT	0730	SLAMS	300810007	3	1	1	100	2	2	100	2	2	100	
08	MT	0730	SLAMS	300930005	3							2	1	50	
08	MT	All	All Sites					100			100			62	
08	ND	0782	NCORE	380171004	3							2	2	100	83
08	ND	0782	SLAMS	380150003	2	2	2	100	2	2	100	2	4	100	
08	ND	0782	SLAMS	380150003	3				2	0	0	2	2	100	
08	ND	0782	SLAMS	380570004	3							1	1	100	
08	ND	All	All Sites					100			50			100	

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Region	State	PQAO	Monitor Type	Site ID	POC	2008 Required	2008 Submitted	2008 % Complete	2009 Required	2009 Submitted	2009 % Complete	2010 Required	2010 Submitted	2010 % Complete	3 Year comp %
08	SD	0973	NCORE	460990008	3				2	3	100	2	4	100	
08	SD	0973	SLAMS	460710001	3				2	3	100	2	4	100	
08	SD	0973	SPECIAL PURPOSE	460330132	3				2	3	100	2	4	100	
08	SD	0973	SPECIAL PURPOSE	461030020	3				2	3	100	2	4	100	
08	SD	0973	SPECIAL PURPOSE	461270002	3				2	3	100	2	4	100	
08	SD	All	All Sites								100			100	100
08	UT	1113	SLAMS	490353010	2	2	0	0	2	9	100	2	12	100	
08	UT	1113	SLAMS	490494001	2	2	1	50	2	9	100	2	12	100	
08	UT	1113	SLAMS	490570007	2	2	1	50	2	0	0	2	0	0	
08	UT	1113	SPECIAL PURPOSE	490050004	2	2	0	0	2	9	100	2	12	100	
08	UT	All	All Sites					25			75			75	58
08	WY	1188	SLAMS	560210001	2				2	1	50	2	2	100	
08	WY	1188	SLAMS	560330002	2	2	2	100	2	2	100	2	2	100	
08	WY	1188	SPECIAL PURPOSE	560050891	2	2	1	50	2	2	100	1	1	100	
08	WY	All	All Sites					75			83			100	86
09	AZ	615	SLAMS	040137020	2	2	4	100	2	4	100	2	4	100	
09	AZ	0643	SLAMS	040130019	2	2	1	50	2	1	50	2	2	100	
09	AZ	0643	SLAMS	040130019	3							2	1	50	
09	AZ	0643	SLAMS	040134003	3							2	3	100	
09	AZ	0865	SLAMS	040210001	2				2	2	100	2	2	100	
09	AZ	All	All Sites					75			83			90	83
09	CA	0145	NCORE	060190008	2	2	1	50	2	2	100	2	2	100	
09	CA	0145	NCORE	060670006	2	2	0	0	2	1	50	2	2	100	
09	CA	0145	SLAMS	060271003	2	2	2	100	2	0	0	2	1	50	
09	CA	0145	SLAMS	060290014	2	2	1	50	2	2	100	2	2	100	
09	CA	0145	SLAMS	060450006	3	1	0	0	2	0	0	2	2	100	
09	CA	0145	SLAMS	060571001	2	2	1	50	2	1	50	2	3	100	
09	CA	0145	SLAMS	060710306	2	2	1	50	2	1	50	2	1	50	
09	CA	0145	SLAMS	060798001	2	2	1	50	2	1	50	2	0	0	
09	CA	0145	SLAMS	060798001	3				2	0	0	2	3	100	
09	CA	0145	SLAMS	061110007	2	2	1	50	2	1	50	2	2	100	
09	CA	0145	SPECIAL PURPOSE	060195001	3	1	0	0	2	0	0	2	2	100	
09	CA	0145	SPECIAL PURPOSE	060310004	3	1	0	0	2	0	0	2	1	50	
09	CA	0145	SPECIAL PURPOSE	060771002	4							1	1	100	
09	CA	586	TRIBAL MONITORS	060650009	2							1	1	100	
09	CA	0942	SLAMS	060250005	2	2	0	0	2	1	50	2	1	50	
09	CA	0942	SLAMS	060730006	2	2	0	0	2	0	0	2	1	50	
09	CA	0942	SLAMS	060731002	3	2	0	0	2	0	0	2	1	50	
09	CA	0942	SLAMS	060731002	4							2	1	50	
09	CA	0972	NCORE	060371103	3	2	0	0	2	0	0	2	2	100	
09	CA	0972	NCORE	060658001	3	2	0	0	2	1	50	2	2	100	
09	CA	0972	SLAMS	060371103	2	2	1	50	2	3	100	2	2	100	
09	CA	0972	SLAMS	060374002	3				2	1	50	2	2	100	
09	CA	0972	SLAMS	060652002	2	2	1	50	2	2	100	2	2	100	
09	CA	0972	SLAMS	060658001	2	2	2	100	2	1	50	2	2	100	

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Region	State	PQAO	Monitor Type	Site ID	POC	2008 Required	2008 Submitted	2008 % Complete	2009 Required	2009 Submitted	2009 % Complete	2010 Required	2010 Submitted	2010 % Complete	3 Year comp %
09	CA	0972	SPECIAL PURPOSE	060371002	3	2	0	0	2	1	50	2	2	100	
09	CA	0972	SPECIAL PURPOSE	060590007	3	2	0	0	2	2	100	2	2	100	
09	CA	0972	SPECIAL PURPOSE	060658005	3	2	0	0	2	1	50	2	2	100	
09	CA	All	All Sites					27			43			83	51
09	NV	0226	SLAMS	320030561	2	2	3	100	2	3	100	2	3	100	
09	NV	1138	NCORE	320310016	2	2	4	100	2	4	100	2	4	100	
09	NV	All	All Sites					100			100			100	100
10	AK	0015	SLAMS	020900010	2	2	0	0	2	2	100	2	2	100	
10	AK	0732	SPECIAL PURPOSE	020200018	3				2	3	100	2	4	100	
10	AK	All	All Sites					0			100			100	67
10	ID	180	TRIBAL MONITORS	160050020	2							1	2	100	
10	ID	180	TRIBAL MONITORS	160050020	3							2	2	100	
10	ID	0511	NCORE	160010010	3				1	1	100	2	2	100	
10	ID	0511	SLAMS	160790017	2	2	4	100	2	2	100	2	2	100	
10	ID	0511	SLAMS	160790017	4							2	2	100	
10	ID	0511	SPECIAL PURPOSE	160090010	3				2	1	50	2	1	50	
10	ID	0511	SPECIAL PURPOSE	160270002	3							2	2	100	
10	ID	0511	SPECIAL PURPOSE	160590004	3				1	1	100	2	2	100	
10	ID	0511	SPECIAL PURPOSE	160790017	3				2	1	50	2	2	100	
10	ID	All	All Sites					100			80			94	91
10	OR	0821	SLAMS	410290133	2	2	0	0	2	0	0	2	2	100	
10	OR	0821	SLAMS	410390060	2	2	0	0	2	0	0	2	2	100	
10	OR	0821	SLAMS	410670004	2							1	1	100	
10	OR	All	All Sites					0			0			100	33
10	WA	1136	NCORE	530330080	3							2	2	100	
10	WA	1136	SLAMS	530330057	2	2	2	100	2	2	100				
10	WA	1136	SLAMS	530610020	3							1	1	100	
10	WA	1136	SLAMS	530630016	2	2	2	100	1	0	0				
10	WA	1136	SLAMS	530630021	2				2	2	100	2	2	100	
10	WA	All	All Sites					100			66			100	89

Table 4c Flow Rate Average Percent Difference by PQAO (acceptance criteria is < 4% of standard and < 5% of design value)

Region	State	PQAO	Agency Name	Average % Difference
01	CT	0251	Connecticut Department of Environmental Protection	-0.384
01	MA	0660	Mass Dept Environmental Protection-Div Air Quality Control	0.042
01	ME	0635	Maine D.E.P. Bureau Of Air Quality Control, Augusta	-0.354
01	NH	0762	New Hampshire Air Resources Agency	0.825
01	RI	0907	Rhode Island DEM And DOH	0.122
01	VT	1119	Vermont Agency Of Environmental Conservation	-0.491
02	NJ	0764	New Jersey State Department Of Environmental Protection	-0.087
02	NY	0768	New York State Department Of Environmental Conservation	-0.097
02	PR	0889	Puerto Rico Environmental Quality Board	-0.259
03	DC	0350	District Dept of Environment, Air Quality Div - DDOE/AQD	-0.203
03	DE	0294	Delaware Dept Natural Resources and Environmental Control	0.275
03	MD	1002	State Of Maryland Air Management Administration	0.083
03	PA	0021	Allegheny County,PA Health Department	-0.709
03	PA	0851	Pennsylvania Department Of Environmental Protection	-0.491
03	PA	0861	Philadelphia Air Management Services	-0.163
03	VA	1127	Virginia Department of Environmental Quality	0.050
03	WV	1150	West Virginia Air Pollution Control Commission	-0.515
04	AL	0013	Al Dept Of Env Mgt	-0.285
04	FL	1328	Florida Department of Environmental Protection (FDEP)	0.434
04	GA	0437	Georgia Air Protection Branch Ambient Monitoring Program	-0.781
04	KY	0584	Kentucky Division For Air Quality	-0.178
04	MS	0703	Mississippi DEQ, Office Of Pollution	-1.308
04	NC	001	Eastern Band Of Cherokee Indians of North Carolina	-0.159
04	NC	0776	North Carolina Dept Of Environment And Natural Resources	-0.024
04	SC	0971	South Carolina Department Health And Environmental Control	-0.094
04	TN	1025	Tennessee Division Of Air Pollution Control	-0.144
05	IL	0258	Cook County Department of Environmental Control	-0.102
05	IL	0513	Illinois Environmental Protection Agency	0.181
05	IN	0520	Indiana Depart Of Environ Management/Office Of Air Quality	0.137
05	MI	0685	Michigan Dept Of Environmental Quality-Air Quality Division	-0.735
05	MN	0700	Minnesota Pollution Control Agency, Division Of Air Quality	-0.210
05	OH	0012	Akron Regional Air Pollution Control Agency	-1.155
05	OH	0151	Canton City Health Department Air Pollution Control	-0.359
05	OH	0220	City of Toledo, Environmental Services Division	0.287
05	OH	0229	Cleveland Air Pollution Control Agency	1.570
05	OH	0287	Dayton Regional Air Pollution Control Agency	-0.088
05	OH	0595	Lake County Health Department Division Air Pollution Control	1.033
05	OH	0634	Mahoning-Trumbull Air Pollution Control Agency	-0.657
05	OH	0805	Ohio EPA, Central District Office	0.344
05	OH	0807	Ohio EPA, Northeast District Office	-0.869
05	OH	0808	Ohio EPA, Northwest District Office	-1.057
05	OH	0809	Ohio EPA, Southeast District Office	-1.417
05	OH	0880	Portsmouth City Health Dept Division Air Pollution Control	0.310
05	OH	1259	Hamilton County Department Of Environmental Services	-0.380
05	WI	1175	Wisconsin Dept Of Natural Resources, Air Monitoring Section	-0.183
06	AR	0055	Arkansas Department Of Environmental Quality	-0.130
06	LA	1001	State Of Louisiana	-0.513
06	NM	0017	Albuquerque Environmental Health And Energy Department	0.050
06	NM	0765	New Mexico Environment Department	-0.387
06	OK	807	Delaware Nation, OK	-0.364
06	OK	0812	Oklahoma Dept. Of Environmental Quality Air Quality Division	0.033
06	OK	905	Cherokee Nation, Oklahoma	0.121
06	OK	920	Quapaw Tribe of Indians, OK	0.180
06	TX	1035	Texas Commission On Environmental Quality	-0.112

Table 4c Flow Rate Average Percent Difference by PQAO (acceptance criteria is < 4% of standard and < 5% of design value)

Region	State	PQAO	Agency Name	Average % Difference
07	IA	0613	Linn County Health Department	-0.352
07	IA	0874	Polk County Physical Planning	-0.565
07	IA	1080	University Hygenic Laboratory	0.065
07	KS	0563	Kansas Department Of Health And Environment	-0.434
07	MO	0588	Missouri Laboratory Services Program	0.143
07	NE	0752	Nebraska Department Of Environmental Control	0.254
07	NE	0816	Omaha-Douglas County Health Department	0.171
08	CO	0240	Colorado Department of Public Health And Environment	-0.101
08	CO	750	Southern Ute Indian Tribe of Southern Ute Reservation, CO	1.705
08	MT	0730	Mt Dept Of Environmental Quality, Air Quality Division	-0.163
08	ND	0782	North Dakota State Department Of Health	0.146
08	SD	0973	South Dakota Dept Environmental Protection Air Quality Prog	0.287
08	UT	1113	Utah Department Of Environmental Quality	-0.687
08	WY	0527	Inter-Mountain Laboratory Sheridan, WY	0.254
08	WY	1188	Wyoming Air Quality Division, Dept Of Environmental Quality	1.237
09	AZ	0053	Arizona Department Of Environmental Quality	-0.082
09	AZ	615	Salt River Pima-Maricopa Indian Community of Salt River Reservation, A	-0.375
09	AZ	0643	Maricopa County Air Quality	0.189
09	AZ	0864	Pima County Health Department	0.769
09	AZ	0865	Pinal County APCD	0.191
09	CA	0086	Bay Area Air Quality Management District	-0.224
09	CA	0145	California Air Resources Board	-0.224
09	CA	586	Pechanga Band of Luiseno Mission Indians of Pechanga Reservation, CA	1.079
09	CA	0942	San Diego County Air Pollution Control District	0.870
09	CA	0972	South Coast Air Quality Management District	0.077
09	HI	0481	Hawaii State Department Of Health	-0.028
09	NV	0226	Clark County, NV DAQEM	-1.127
09	NV	1138	Washoe County District Health Department	-0.112
10	AK	0015	Alaska Department Of Environmental Conservation	-0.148
10	AK	0732	Municipality Of Anchorage Air Pollution Control Agency	1.398
10	ID	180	Shoshone-Bannock Tribes of Fort Hall Reservation of Idaho	-0.327
10	ID	0511	Idaho Department Of Health And Welfare-Environment Division	0.977
10	OR	0821	Oregon Department Of Environmental Quality	-0.668
10	WA	124	Confederated Tribes & Bands of Yakama Nations, WA	1.153
10	WA	1136	Washington State Department Of Ecology	-0.258

Attachments 5A and B**2008-2010 PM_{2.5} Performance Evaluation Program (PEP)
Completeness Aggregated by PQAQO
and 3-Year Bias Estimate**

Notes:

PEP completeness is based upon sites active at the time that audits are planned for a particular year. It is based on the requirement that PQAQOs with 5 or fewer routine sites are required to conduct 5 audits and PQAQOs with more than 5 routine sites are required to conduct 8 audits (2007 monitoring regulation).

Completeness is based on all valid pairs collected by the PEP program. Completeness assesses all valid pairs, regardless of the concentrations for either value of the pair. On the other hand, bias estimates are based only on valid paired PEP and primary values for which both values are $\geq 3 \mu\text{g}/\text{m}^3$.

Values in tan represent cases where the numbers of valid PEP/routine pairs is less than 75% of that required or bias estimates that exceed the goal of $|\text{bias}| < 10\%$.

Attachment 5A excludes Special Purpose monitors from the counts and bias estimates and Attachment 5B includes these monitor types. See Attachment 6 for a description of the handling of monitor types.

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Attachment 5a. Bias assessment with all valid PEP/Primary pairs included in completeness but only pairs >= 3 µg/m3 included in bias estimates.																		
Reg	State	PQAO	PQAO Name	2008			2009			2010			3-Year Valid			Bias (%)		
				Primary	Required	Valid Pairs	Primary	Required	Valid Pairs	Primary	Required	Valid Pairs	Required	Valid Pairs	% Comp	Lower Bound	Mean	Upper Bound
1	CT	0251	Connecticut Department of Environmental Protection	12	8	7	12	8	7	12	8	6	24	20	83%	-18.8	-12.4	-5.9
1	MA	0660	Mass Dept Environmental Protection-Div Air Quality Control	15	8	8	15	8	7	15	8	9	24	24	100%	-4.0	0.2	4.4
1	ME	0635	Maine D.E.P. Bureau Of Air Quality Control, Augusta	5	5	6	6	8	4	6	8	5	21	15	71%	-14.9	-8.8	-2.7
1	NH	0762	New Hampshire Air Resources Agency	6	8	9	5	5	4	5	5	6	18	19	100%	-13.1	-9.0	-4.9
1	RI	0907	Rhode Island DEM And DOH	6	8	6	5	5	4	5	5	3	18	13	72%	-14.3	-6.4	1.6
1	VT	1119	Vermont Agency Of Environmental Conservation	4	5	5	4	5	5	4	5	6	15	16	100%	-13.5	-8.1	-2.6
2	NJ	0764	New Jersey State Department Of Environmental Protection	20	8	6	21	8	9	22	8	8	24	23	96%	-20.9	-15.7	-10.4
2	NY	0768	New York State Department Of Environmental Conservation	26	8	4	25	8	7	25	8	8	24	19	79%	-12.9	-9.4	-6.0
2	PR	0889	Puerto Rico Environmental Quality Board	10	8	6	10	8	5	10	8	6	24	17	71%	-41.1	-37.1	-33.1
2	VI	1124	Virgin Islands Department Of Planning & Natural Resources	1	5	0	1	5	1	1	5	0	15	1	7%		-29.8	
3	DC	0350	District Dept of Environment, Air Quality Div - DDOE/AQD	3	5	5	3	5	5	3	5	4	15	14	93%	-19.5	-13.3	-7.2
3	DE	0294	Delaware Dept Natural Resources and Environmental Control	7	8	9	7	8	7	7	8	7	24	23	96%	-10.7	-5.2	0.4
3	MD	1002	State Of Maryland Air Management Adminis	15	8	7	15	8	8	20	8	6	24	21	88%	-13.7	-10.9	-8.1
3	PA	0021	Allegheny County,PA Health Department	5	5	3	5	5	2	5	5	8	15	13	87%	-14.9	-8.3	-1.7
3	PA	0851	Pennsylvania Department Of Environmental Protection	21	8	5	31	8	4	25	8	8	24	17	71%	-13.6	-5.0	3.7
3	PA	0861	Philadelphia Air Management Services	5	5	4	5	5	8	6	8	8	18	20	100%	-8.7	-3.7	1.4
3	VA	1127	Virginia Department of Environmental Quality	21	8	5	22	8	8	24	8	8	24	21	88%	-17.1	-14.1	-11.1
3	WV	1150	West Virginia Air Pollution Control Commission	11	8	9	11	8	5	11	8	7	24	21	88%	-10.2	-6.4	-2.5
4	AL	0013	Al Dept Of Env Mgt	17	8	8	17	8	8	15	8	6	24	22	92%	-12.9	-9.7	-6.4
4	FL	1328	Florida Department of Environmental Protection (FDEP)	29	8	8	30	8	8	31	8	8	24	24	100%	-28.9	-24.8	-20.6
4	GA	0437	Georgia Air Protection Branch Ambient Monitoring Program	29	8	5	30	8	8	30	8	8	24	21	88%	-16.6	-7.6	1.3
4	KY	0584	Kentucky Division For Air Quality	20	8	7	21	8	7	21	8	5	24	19	79%	-13.5	-10.5	-7.6
4	MS	0703	Mississippi DEQ, Office Of Pollution	13	8	6	14	8	8	14	8	8	24	22	92%	-7.2	-3.5	0.2
4	NC	001	Eastern Band Of Cherokee Indians of North Carolina	1	5	0	1	5	5	1	5	5	15	10	67%	-26.0	-17.4	-8.8
4	NC	0776	North Carolina Dept Of Environment And Natural Resources	35	8	3	36	8	9	36	8	8	24	20	83%	-18.5	-14.1	-9.7
4	SC	0971	South Carolina Department Health And Environmental Control	16	8	6	13	8	5	12	8	6	24	17	71%	-18.8	-13.6	-8.4
4	TN	1025	Tennessee Division Of Air Pollution Control	16	8	8	15	8	7	15	8	8	24	23	96%	-21.5	-16.1	-10.7
5	IL	0258	Cook County Department of Environmental Control	8	8	5	8	8	3	8	8	10	24	18	75%	-5.9	-3.9	-2.0
5	IL	0513	Illinois Environmental Protection Agency	30	8	22	30	8	14	30	8	11	24	47	100%	-7.1	-5.1	-3.0
5	IN	0520	Indiana Depart Of Environ Management/Office Of Air Quality	35	8	12	39	8	10	41	8	8	24	30	100%	-11.5	-8.1	-4.7
5	MI	0685	Michigan Dept Of Environmental Quality-Air Quality Division	27	8	7	27	8	10	27	8	8	24	25	100%	-17.7	-13.1	-8.4
5	MI	W44	Inter-tribal Council of Michigan, Inc.	3	5	0	4	5	0	4	5	2	15	2	13%	53.3	92.2	131.2
5	MN	407	Minnesota Chippewa Tribe, MN (Leech Lake Band)	1	5	1	1	5	0	1	5	0	15	1	7%		-21.1	
5	MN	0700	Minnesota Pollution Control Agency, Division of Air Quality	15	8	4	15	8	7	15	8	8	24	19	79%	-19.8	-13.3	-6.9
5	OH	0012	Akron Regional Air Pollution Control Agency	4	5	5	5	5	5	5	5	5	15	15	100%	-7.0	-2.2	2.6
5	OH	0151	Canton City Health Department Air Pollution Contro	2	5	3	2	5	5	2	5	5	15	13	87%	-8.9	-4.9	-0.8
5	OH	0220	City of Toledo, Environmental Services Division	4	5	3	3	5	5	3	5	5	15	13	87%	-19.5	-13.7	-7.9
5	OH	0229	Cleveland Air Pollution Control Agency	7	8	8	7	8	8	6	8	8	24	24	100%	-12.4	-7.0	-1.6
5	OH	0287	Dayton Regional Air Pollution Control Agency	4	5	5	4	5	5	4	5	5	15	15	100%	-6.4	-1.7	3.0
5	OH	0595	Lake County Health Department Division Air Pollution Control	1	5	5	2	5	5	2	5	5	15	15	100%	-13.1	-3.3	6.4
5	OH	0634	Mahoning-Trumbull Air Pollution Control Agency	3	5	4	2	5	4	3	5	5	15	13	87%	-14.5	-8.6	-2.7
5	OH	0805	Ohio EPA, Central District Office	3	5	3	3	5	3	4	5	4	15	10	67%	-29.8	-16.3	-2.8
5	OH	0807	Ohio EPA, Northeast District Office	1	5	1	1	5	1	1	5	1	15	3	20%	-56.2	-14.7	26.9
5	OH	0809	Ohio EPA, Southeast District Office	3	5	3	3	5	3	3	5	3	15	9	60%	-14.8	-6.8	1.1
5	OH	0880	Portsmouth City Health Dept Division Air Pollution Control	3	5	5	2	5	5	2	5	5	15	15	100%	-24.6	-5.8	13.1
5	OH	1259	Hamilton County Department Of Environmental Services	11	8	7	11	8	8	11	8	8	24	23	96%	-3.8	0.8	5.5
5	WI	1175	Wisconsin Dept Of Natural Resources, Air Monitoring Section	21	8	7	23	8	10	24	8	6	24	23	96%	-9.2	-1.8	5.6
6	AR	0055	Arkansas Department Of Environmental Quality	16	8	8	16	8	6	16	8	8	24	22	92%	-19.2	-10.1	-1.0
6	LA	1001	State Of Louisiana	15	8	8	15	8	9	15	8	10	24	27	100%	-26.3	-22.5	-18.6
6	NM	0017	Albuquerque Environmental Health Department, Air Quality Division	2	5	4	2	5	5	2	5	6	15	15	100%	-6.4	4.3	14.9
6	NM	0765	New Mexico Environment Department	9	8	4	9	8	8	9	8	8	24	20	83%	-20.0	-12.7	-5.4
6	OK	807	Delaware Nation, OK	1	5	1	1	5	0	1	5	3	15	4	27%	-17.1	3.2	23.5
6	OK	0812	Oklahoma Dept. Of Environmental Quality	7	8	5	7	8	7	7	8	9	24	21	88%	-6.5	1.2	8.8
6	OK	905	Cherokee Nation, Oklahoma	5	5	0	2	5	0	2	5	2	15	2	13%	-18.4	-3.5	11.5
6	OK	920	Quapaw Tribe of Indians, OK	1	5	0	1	5	0	1	5	2	15	2	13%	-140.3	-18.0	104.3
6	TX	1035	Texas Commission On Environmental Quality	15	8	3	15	8	6	15	8	5	24	14	58%	-13.4	-7.4	-1.3
7	IA	0613	Linn County Health Department	2	5	2	2	5	3	2	5	3	15	8	53%	-18.4	-7.1	4.3

Attachment 5a. Bias assessment with all valid PEP/Primary pairs included in completeness but only pairs $\geq 3 \mu\text{g}/\text{m}^3$ included in bias estimates.

Reg	State	PQAO	PQAO Name	2008			2009			2010			3-Year Valid			Bias (%)		
				Primary	Required	Valid Pairs	Primary	Required	Valid Pairs	Primary	Required	Valid Pairs	Required	Pairs	% Comp	Lower Bound	Mean	Upper Bound
7	IA	0874	Polk County Physical Planning	2	5	7	2	5	5	2	5	5	15	17	100%	-13.6	-8.6	-3.6
7	IA	1080	University Hygienic Laboratory	8	8	3	9	8	5	9	8	1	24	9	38%	-12.9	2.8	18.6
7	KS	0563	Kansas Department Of Health And Environment	10	8	8	10	8	9	10	8	7	24	24	100%	-12.8	-8.9	-5.1
7	MO	0588	Missouri Laboratory Services Program	15	8	8	20	8	9	14	8	3	24	20	83%	-10.4	-5.1	0.3
7	NE	0752	Nebraska Department Of Environmental Control	3	5	4	4	5	3	3	5	7	15	14	93%	-19.7	-10.6	-1.5
7	NE	0816	Omaha-Douglas County Health Department	4	5	4	5	5	5	5	5	3	15	12	80%	-13.0	-1.9	9.2
8	CO	0240	Colorado Department of Public Health And Environment	14	8	6	14	8	7	14	8	0	24	13	54%	-17.9	-10.9	-3.9
8	CO	750	Southern Ute Indian Tribe of Southern Ute Reservation, CO	0	5	0	2	5	0	2	5	4	15	4	27%	-49.7	0.8	51.3
8	MT	0730	Mt Dept Of Environmental Quality, Air Quality Division	18	8	9	18	8	6	20	8	4	24	19	79%	-9.0	-4.7	-0.5
8	ND	0782	North Dakota State Department Of Health	4	5	5	4	5	5	6	8	5	18	15	83%	-8.8	2.1	13.0
8	SD	0973	South Dakota Dept Environmental Protection Air Quality Program	9	8	4	9	8	4	9	8	8	24	16	67%	-13.5	-7.0	-0.5
8	UT	1113	Utah Department Of Environmental Quality	10	8	9	9	8	7	9	8	3	24	19	79%	-7.9	-0.2	7.4
8	WY	1188	Wyoming Air Quality Division, Dept Of Environmental Quality	7	8	6	9	8	6	9	8	5	24	17	71%	-18.2	-10.4	-2.5
9	AZ	0053	Arizona Department Of Environmental Quality	6	8	4	6	8	5	7	8	6	24	15	63%	-21.5	-11.9	-2.2
9	AZ	615	Salt River Pima-Maricopa Indian Community of Salt River Reservation, AZ	1	5	0	1	5	4	1	5	5	15	9	60%	-23.6	-15.8	-7.9
9	AZ	0643	Maricopa County Air Quality	3	5	3	3	5	4	4	5	6	15	13	87%	-14.4	-8.5	-2.5
9	AZ	0864	Pima County Health Department	2	5	5	2	5	5	2	5	6	15	16	100%	-26.2	-20.3	-14.3
9	AZ	0865	Pinal County APCD	3	5	4	3	5	5	3	5	4	15	13	87%	-13.1	15.0	43.1
9	CA	0086	Bay Area Air Quality Management District	15	8	8	22	8	11	13	8	4	24	23	96%	-8.7	-3.8	1.0
9	CA	0145	California Air Resources Board	40	8	11	44	8	13	54	8	11	24	35	100%	-15.9	-10.7	-5.5
9	CA	0942	San Diego County Air Pollution Control District	10	8	5	11	8	5	11	8	5	24	15	63%	-13.8	-8.3	-2.9
9	CA	0972	South Coast Air Quality Management District	21	8	10	21	8	8	21	8	9	24	27	100%	-18.2	-14.4	-10.6
9	HI	0481	Hawaii State Department Of Health	6	8	5	7	8	2	5	5	0	21	7	33%	-28.1	-19.2	-10.2
9	NV	0226	Clark County, NV DAQEM	3	5	4	3	5	5	4	5	6	15	15	100%	-8.6	-2.6	3.3
9	NV	1138	Washoe County District Health Department	1	5	4	1	5	5	1	5	5	15	14	93%	-14.5	-9.2	-4.0
10	AK	0015	Alaska Department Of Environmental Conservation	4	5	4	5	5	3	4	5	7	15	14	93%	-24.3	-19.6	-15.0
10	ID	180	Shoshone-Bannock Tribes of Fort Hall Reservation of Idaho	1	5	2	2	5	6	2	5	0	15	8	53%	-22.9	-9.6	3.7
10	ID	0511	Idaho Department Of Health And Welfare-Environment Division	8	8	8	7	8	7	7	8	8	24	23	96%	-16.6	-12.5	-8.3
10	OR	0821	Oregon Department Of Environmental Quality	19	8	8	21	8	9	21	8	6	24	23	96%	-20.7	-16.4	-12.1
10	WA	1136	Washington State Department Of Ecology	11	8	5	10	8	3	12	8	4	24	12	50%	-23.0	-14.4	-5.8

Attachment 5b. Bias assessment with all valid PEP/Primary pairs (SPMs allowed) included in completeness but only pairs >= 3 µg/m3 included in bias estimates.

Reg	State	PQAO	PQAO Name	2008			2009			2010			3-Year Valid			Bias (%)		
				Primary	Required	Valid Pairs	Primary	Required	Valid Pairs	Primary	Required	Valid Pairs	Required	Valid Pairs	% Comp	Lower Bound	Mean	Upper Bound
1	CT	0251	Connecticut Department of Environmental Protection	12	8	8	12	8	9	12	8	8	24	25	100%	-17.6	-12.3	-7.0
1	MA	0660	Mass Dept Environmental Protection-Div Air Quality Control	15	8	8	15	8	7	15	8	9	24	24	100%	-4.0	0.2	4.4
1	ME	0635	Maine D.E.P. Bureau Of Air Quality Control, Augusta	5	5	8	6	8	7	6	8	7	21	22	100%	-13.4	-9.1	-4.8
1	NH	0762	New Hampshire Air Resources Agency	6	8	9	5	5	4	5	5	6	18	19	100%	-13.1	-9.0	-4.9
1	RI	0907	Rhode Island DEM And DOH	6	8	6	5	5	4	5	5	3	18	13	72%	-14.3	-6.4	1.6
1	VT	1119	Vermont Agency Of Environmental Conservation	4	5	5	4	5	5	4	5	6	15	16	100%	-13.5	-8.1	-2.6
2	NJ	0764	New Jersey State Department Of Environmental Protection	20	8	6	21	8	9	22	8	8	24	23	96%	-20.9	-15.7	-10.4
2	NY	0768	New York State Department Of Environmental Conservation	26	8	4	25	8	7	25	8	8	24	19	79%	-12.9	-9.4	-6.0
2	PR	0889	Puerto Rico Environmental Quality Board	10	8	6	10	8	5	10	8	6	24	17	71%	-41.1	-37.1	-33.1
2	VI	1124	Virgin Islands Department Of Planning & Natural Resources	1	5	0	1	5	1	1	5	0	15	1	7%		-29.8	
3	DC	0350	District Dept of Environment, Air Quality Div - DDOE/AQD	3	5	5	3	5	5	3	5	4	15	14	93%	-19.5	-13.3	-7.2
3	DE	0294	Delaware Dept Natural Resources and Environmental Control	7	8	9	7	8	7	7	8	7	24	23	96%	-10.7	-5.2	0.4
3	MD	1002	State Of Maryland Air Management Adminis	15	8	7	15	8	8	20	8	6	24	21	88%	-13.7	-10.9	-8.1
3	PA	0021	Allegheny County,PA Health Department	5	5	3	5	5	8	5	5	8	15	19	100%	-13.5	-8.0	-2.5
3	PA	0851	Pennsylvania Department Of Environmental Protection	21	8	5	31	8	4	25	8	8	24	17	71%	-13.6	-5.0	3.7
3	PA	0861	Philadelphia Air Management Services	5	5	4	5	5	8	6	8	8	18	20	100%	-8.7	-3.7	1.4
3	VA	1127	Virginia Department of Environmental Quality	21	8	5	22	8	8	24	8	8	24	21	88%	-17.1	-14.1	-11.1
3	WV	1150	West Virginia Air Pollution Control Commission	11	8	9	11	8	6	11	8	7	24	22	92%	-9.7	-6.0	-2.3
4	AL	0013	Al Dept Of Env Mgt	17	8	8	17	8	8	15	8	6	24	22	92%	-12.9	-9.7	-6.4
4	FL	1328	Florida Department of Environmental Protection (FDEP)	29	8	8	30	8	8	31	8	8	24	24	100%	-28.9	-24.8	-20.6
4	GA	0437	Georgia Air Protection Branch Ambient Monitoring Program	29	8	5	30	8	8	30	8	8	24	21	88%	-16.6	-7.6	1.3
4	KY	0584	Kentucky Division For Air Quality	20	8	7	21	8	7	21	8	5	24	19	79%	-13.5	-10.5	-7.6
4	MS	0703	Mississippi DEQ, Office Of Pollution	13	8	6	14	8	8	14	8	8	24	22	92%	-7.2	-3.5	0.2
4	NC	001	Eastern Band Of Cherokee Indians of North Carolina	1	5	0	1	5	5	1	5	5	15	10	67%	-26.0	-17.4	-8.8
4	NC	0776	North Carolina Dept Of Environment And Natural Resources	35	8	3	36	8	9	36	8	8	24	20	83%	-18.5	-14.1	-9.7
4	SC	0971	South Carolina Department Health And Environmental Control	16	8	10	13	8	8	12	8	9	24	27	100%	-19.7	-14.5	-9.2
4	TN	1025	Tennessee Division Of Air Pollution Control	16	8	8	15	8	7	15	8	8	24	23	96%	-21.5	-16.1	-10.7
5	IL	0258	Cook County Department of Environmental Control	8	8	5	8	8	3	8	8	10	24	18	75%	-5.9	-3.9	-2.0
5	IL	0513	Illinois Environmental Protection Agency	30	8	22	30	8	14	30	8	11	24	47	100%	-7.1	-5.1	-3.0
5	IN	0520	Indiana Depart Of Environ Management/Office Of Air Quality	35	8	12	39	8	10	41	8	8	24	30	100%	-11.5	-8.1	-4.7
5	MI	0685	Michigan Dept Of Environmental Quality-Air Quality Division	27	8	7	27	8	10	27	8	8	24	25	100%	-17.7	-13.1	-8.4
5	MI	W44	Inter-tribal Council of Michigan, Inc.	3	5	0	4	5	0	4	5	2	15	2	13%	53.3	92.2	131.2
5	MN	407	Minnesota Chippewa Tribe, MN (Leech Lake Band)	1	5	1	1	5	0	1	5	0	15	1	7%		-21.1	
5	MN	0700	Minnesota Pollution Control Agency, Division of Air Quality	15	8	4	15	8	8	15	8	8	24	20	83%	-18.8	-12.5	-6.3
5	OH	0012	Akron Regional Air Pollution Control Agency	4	5	5	5	5	5	5	5	5	15	15	100%	-7.0	-2.2	2.6
5	OH	0151	Canton City Health Department Air Pollution Contro	2	5	3	2	5	5	2	5	5	15	13	87%	-8.9	-4.9	-0.8
5	OH	0220	City of Toledo, Environmental Services Division	4	5	3	3	5	5	3	5	5	15	13	87%	-19.5	-13.7	-7.9
5	OH	0229	Cleveland Air Pollution Control Agency	7	8	8	7	8	8	6	8	8	24	24	100%	-12.4	-7.0	-1.6
5	OH	0287	Dayton Regional Air Pollution Control Agency	4	5	5	4	5	5	4	5	5	15	15	100%	-6.4	-1.7	3.0
5	OH	0595	Lake County Health Department Division Air Pollution Control	1	5	5	2	5	5	2	5	5	15	15	100%	-13.1	-3.3	6.4
5	OH	0634	Mahoning-Trumbull Air Pollution Control Agency	3	5	4	2	5	4	3	5	5	15	13	87%	-14.5	-8.6	-2.7
5	OH	0805	Ohio EPA, Central District Office	3	5	3	3	5	3	4	5	4	15	10	67%	-29.8	-16.3	-2.8
5	OH	0807	Ohio EPA, Northeast District Office	1	5	1	1	5	1	1	5	1	15	3	20%	-56.2	-14.7	26.9
5	OH	0809	Ohio EPA, Southeast District Office	3	5	3	3	5	3	3	5	3	15	9	60%	-14.8	-6.8	1.1
5	OH	0880	Portsmouth City Health Dept Division Air Pollution Control	3	5	5	2	5	5	2	5	5	15	15	100%	-24.6	-5.8	13.1
5	OH	1259	Hamilton County Department Of Environmental Services	11	8	7	11	8	8	11	8	8	24	23	96%	-3.8	0.8	5.5
5	WI	1175	Wisconsin Dept Of Natural Resources, Air Monitoring Section	21	8	7	23	8	10	24	8	7	24	24	100%	-9.4	-2.3	4.8
6	AR	0055	Arkansas Department Of Environmental Quality	16	8	8	16	8	6	16	8	8	24	22	92%	-19.2	-10.1	-1.0
6	LA	1001	State Of Louisiana	15	8	8	15	8	9	15	8	10	24	27	100%	-26.3	-22.5	-18.6
6	NM	0017	Albuquerque Environmental Health Department, Air Quality Division	2	5	4	2	5	5	2	5	6	15	15	100%	-6.4	4.3	14.9
6	NM	0765	New Mexico Environment Department	9	8	4	9	8	8	9	8	8	24	20	83%	-20.0	-12.7	-5.4
6	OK	807	Delaware Nation, OK	1	5	1	1	5	0	1	5	3	15	4	27%	-17.1	3.2	23.5
6	OK	0812	Oklahoma Dept. Of Environmental Quality	7	8	5	7	8	7	7	8	9	24	21	88%	-6.5	1.2	8.8
6	OK	905	Cherokee Nation, Oklahoma	5	5	0	2	5	0	2	5	2	15	2	13%	-18.4	-3.5	11.5
6	OK	920	Quapaw Tribe of Indians, OK	1	5	0	1	5	0	1	5	2	15	2	13%	-140.3	-18.0	104.3
6	TX	1035	Texas Commission On Environmental Quality	15	8	5	15	8	7	15	8	6	24	18	75%	-12.9	-8.1	-3.3
7	IA	0613	Linn County Health Department	2	5	4	2	5	6	2	5	6	15	16	100%	-15.8	-8.9	-2.0

Attachment 5b. Bias assessment with all valid PEP/Primary pairs (SPMs allowed) included in completeness but only pairs >= 3 µg/m3 included in bias estimates.

Reg	State	PQAO	PQAO Name	2008			2009			2010			3-Year Valid			Bias (%)		
				Primary	Required	Valid Pairs	Primary	Required	Valid Pairs	Primary	Required	Valid Pairs	Required	Valid Pairs	% Comp	Lower Bound	Mean	Upper Bound
7	IA	0874	Polk County Physical Planning	2	5	7	2	5	5	2	5	5	15	17	100%	-13.6	-8.6	-3.6
7	IA	1080	University Hygenic Laboratory	8	8	7	9	8	9	9	8	6	24	22	92%	-9.4	-2.0	5.3
7	KS	0563	Kansas Department Of Health And Environment	10	8	8	10	8	9	10	8	7	24	24	100%	-12.8	-8.9	-5.1
7	MO	0588	Missouri Laboratory Services Program	15	8	9	20	8	9	14	8	3	24	21	88%	-10.4	-5.3	-0.3
7	NE	0752	Nebraska Department Of Environmental Control	3	5	4	4	5	3	3	5	7	15	14	93%	-19.7	-10.6	-1.5
7	NE	0816	Omaha-Douglas County Health Department	4	5	4	5	5	5	5	5	3	15	12	80%	-13.0	-1.9	9.2
8	CO	0240	Colorado Department of Public Health And Environment	14	8	6	14	8	7	14	8	8	24	21	88%	-14.2	-7.6	-0.9
8	CO	750	Southern Ute Indian Tribe of Southern Ute Reservation, CO	0	5	0	2	5	0	2	5	4	15	4	27%	-49.7	0.8	51.3
8	MT	0730	Mt Dept Of Environmental Quality, Air Quality Division	18	8	9	18	8	6	20	8	4	24	19	79%	-9.0	-4.7	-0.5
8	ND	0782	North Dakota State Department Of Health	4	5	5	4	5	5	6	8	5	18	15	83%	-8.8	2.1	13.0
8	SD	0973	South Dakota Dept Environmental Protection Air Quality Program	9	8	4	9	8	4	9	8	8	24	16	67%	-13.5	-7.0	-0.5
8	UT	1113	Utah Department Of Environmental Quality	10	8	9	9	8	7	9	8	6	24	22	92%	-10.0	-3.1	3.8
8	WY	1188	Wyoming Air Quality Division, Dept Of Environmental Quality	7	8	6	9	8	6	9	8	5	24	17	71%	-18.2	-10.4	-2.5
9	AZ	0053	Arizona Department Of Environmental Quality	6	8	4	6	8	5	7	8	6	24	15	63%	-21.5	-11.9	-2.2
9	AZ	615	Salt River Pima-Maricopa Indian Community of Salt River Reservation, AZ	1	5	0	1	5	4	1	5	5	15	9	60%	-23.6	-15.8	-7.9
9	AZ	0643	Maricopa County Air Quality	3	5	3	3	5	4	4	5	6	15	13	87%	-14.4	-8.5	-2.5
9	AZ	0864	Pima County Health Department	2	5	5	2	5	5	2	5	6	15	16	100%	-26.2	-20.3	-14.3
9	AZ	0865	Pinal County APCD	3	5	4	3	5	5	3	5	6	15	15	100%	-9.7	13.8	37.2
9	CA	0086	Bay Area Air Quality Management District	15	8	8	22	8	11	13	8	4	24	23	96%	-8.7	-3.8	1.0
9	CA	0145	California Air Resources Board	40	8	11	44	8	13	54	8	12	24	36	100%	-15.7	-10.6	-5.5
9	CA	0942	San Diego County Air Pollution Control District	10	8	5	11	8	5	11	8	5	24	15	63%	-13.8	-8.3	-2.9
9	CA	0972	South Coast Air Quality Management District	21	8	10	21	8	8	21	8	9	24	27	100%	-18.2	-14.4	-10.6
9	HI	0481	Hawaii State Department Of Health	6	8	5	7	8	2	5	5	0	21	7	33%	-28.1	-19.2	-10.2
9	NV	0226	Clark County, NV DAQEM	3	5	4	3	5	5	4	5	6	15	15	100%	-8.6	-2.6	3.3
9	NV	1138	Washoe County District Health Department	1	5	4	1	5	5	1	5	5	15	14	93%	-14.5	-9.2	-4.0
10	AK	0015	Alaska Department Of Environmental Conservation	4	5	4	5	5	3	4	5	7	15	14	93%	-24.3	-19.6	-15.0
10	ID	180	Shoshone-Bannock Tribes of Fort Hall Reservation of Idaho	1	5	2	2	5	6	2	5	0	15	8	53%	-22.9	-9.6	3.7
10	ID	0511	Idaho Department Of Health And Welfare-Environment Division	8	8	8	7	8	7	7	8	8	24	23	96%	-16.6	-12.5	-8.3
10	OR	0821	Oregon Department Of Environmental Quality	19	8	8	21	8	9	21	8	6	24	23	96%	-20.7	-16.4	-12.1
10	WA	1136	Washington State Department Of Ecology	11	8	5	10	8	3	12	8	4	24	12	50%	-23.0	-14.4	-5.8

Attachment 6

2008-2010 Data Processing Details

This attachment documents data processing steps followed in the development of this 3-year QA report. The purpose of this documentation is to ensure users of this report are aware of and understand these steps and to provide details that may be useful for the generation of future reports. Specifically, this attachment describes the development of the databases for routine completeness, flow rate, precision, and bias for the 2008-2010 PM_{2.5} QA Report. The first section provides information that is relevant for all four databases. This section is followed by four sections containing details specific to each of the four databases. This attachment closes with some additional information uncovered during these analyses.

STEPS RELEVANT for all databases

Some steps were followed for all four databases. These steps involved identifying which PM_{2.5} monitors to include and what data to use from each of those monitors.

Certain monitors are required to follow all quality assurance requirements listed in *40 CFR Part 58 Appendix A* and others are not, although they may in fact follow the requirements. Those required to follow *Appendix A* are identified as Primary and are associated with specific monitor types. Also, many of the summaries in this report are separated by sampling methodology. Some monitoring locations reported data under multiple sampling methodologies during 2008-2010. The following subsections provide details about the identification of primary monitors, determination of monitor types, and handling of multiple sampling methodologies.

Primary Monitors

Primary monitors are those for which their data are to be compared to the PM_{2.5} NAAQS. Identification of primary monitors was achieved by retrieving a list of primary monitors from AQS, this list being one of the tables maintained in Discoverer, specifically Primary_monitor_periods_V. The retrieval was executed on May 15, 2013. For each monitor, the file contained a 9-digit site code, 1-digit POC, and Begin and End Dates demarking when each monitor was primary. A monitor will have multiple records in this file if the monitor was primary for disjoint periods of time. If a monitor was primary for disjoint periods of time separated by only a few days, then it was assumed the monitor was primary for both periods of time, including the few days in between. There were only two such cases.

At the outset of the development of this report, it was decided to summarize flow rate, precision, and bias data only for monitors that had been primary for at least half of 2008-2010 (at least 500 days). The reasoning for this was that patterns at the national level would be clearer if the set of monitors on which results were based were long-term monitors. However, after reviewing the results, it was found that this decision resulted in a significant reduction in the number of pairs available for the bias assessment. Thus the 500-day requirement was removed for the bias work. For future reports, this requirement likely should be relaxed also for the precision and flow rate analyses.

Monitor Type

Data submitted to AQS must have an associated monitor type or types. Certain monitor types are required to follow the collocation requirements for precision and bias, as listed in *40 CFR Part 58 Appendix A*.

Monitor types for each PM_{2.5} monitor were identified through a retrieval from AQS involving the merging of two tables in Discoverer, one of monitor types and one of parameters to subset to PM_{2.5}. In Discoverer, the tables used were Monitor_Type_Assignments_V and Monitors_V, respectively. The retrieval was executed on January 3, 2013. For each monitor type for each monitor, the file contained a 9-digit site code, 1-digit POC, and Begin and End Dates demarking the effective dates for that monitor type. A monitor will have multiple records in this file if the monitor has had multiple monitor types. For sites with multiple monitor types, effective dates for the different types may overlap, meaning multiple types may be present concurrently, or be disjointed; meaning only one type is present at a time.

For Routine Completeness, monitors that were SLAMS, Tribal Monitors, NCore, or Proposed NCore at some time during 2008-2010 were included.

For Flow Rate, any record associated with a monitor type of SLAMS, NCore, Proposed NCore, Special Purpose, or Tribal Monitors were retained.

For Bias and Precision, monitor types and combinations thereof retained and omitted for this report are provided in the following table. Note that these combinations are for sites that were primary at some time in 2008-2010 only. Sites that were not primary in 2008-2010 and sites that were primary outside of 2008-2010 may have other combinations, but these combinations were not considered in the development of the following table since interest for this report was solely with monitors that were primary for some time in 2008-2010. It was noted that no monitor had more than 2 concurrent monitor types.

Single and Concurrent Combinations of Monitor Types Retained and Omitted for 2008-2010 PM_{2.5} QA Report (Cases presented are those observed on 2008-2010 database, not all possible combinations)		
Number of Concurrent Types	Combinations of Monitor Types Retained	Combinations of Monitor Types Omitted
1	SLAMS NCORE Proposed NCORE Tribal Monitors	Industrial Non-EPA Federal Non-Regulatory Other QA Collocated Special Purpose Supplemental Speciation

Single and Concurrent Combinations of Monitor Types Retained and Omitted for 2008-2010 PM_{2.5} QA Report (Cases presented are those observed on 2008-2010 database, not all possible combinations)		
Number of Concurrent Types	Combinations of Monitor Types Retained	Combinations of Monitor Types Omitted
2	SLAMS + NCORE SLAMS + Special Purpose SLAMS + Tribal Monitors SLAMS + QA Collocated SLAMS + Other NCORE + Proposed NCORE NCORE + Tribal Monitors NCORE + QA Collocated NCORE + Other Proposed NCORE + Tribal Monitors	NCORE + Special Purpose Tribal Monitors + Non-Regulatory Special Purpose + Unknown Special Purpose + Non-Regulatory
Example: Suppose a monitor is Other 1/1/08-6/1/10 and is SLAMS 1/1/10-12/31/10. Then for 1/1/08-12/31/09, monitor is Other only so dates are omitted, for 1/1/10-6/1/10, monitor is Other and SLAMS so dates are retained, and for 6/2/10-12/31/10, monitor is SLAMS only so dates are retained.		

The Bias Assessment summarized in Attachment 5 (Bias for each PQAQO) was performed allowing 2 sets of monitor types. For one case, bias pairs associated with a monitor of type Special Purpose or concurrent monitor types of NCore and Special Purpose were excluded and for the second case, bias pairs for these monitor types were included. The reason for running the bias analysis both ways is due to some potential confusion about whether data from a Special Purpose monitor is subject to *Appendix A* requirements. Since there are few bias pairs per PQAQO, if a PQAQO decided that Special Purpose monitors were subject to *Appendix A* requirements, then including these could significantly impact the number of bias pairs available for that PQAQO.

For future reports, it is suggested that the flow rate, precision, and bias summaries all use the same definition of retained and omitted monitor types for consistency across all reports.

Associating PQAQO with Each Monitor

Summaries of PM_{2.5} quality indicators are provided at the Primary Quality Assurance Organization (PQAQO) level. To do so requires assigning each monitor to a PQAQO. To make this assignment, data from an AMP 500 were used. This file contains the Begin and End Dates for each PQAQO associated with each 9-digit site. Data from the AMP 500 were extracted from AQS on November 8, 2012 for this purpose.

For this report, each monitor was assigned to exactly one PQAQO for the entire time frame of 2008-2010. Specifically, each monitor was assigned to the PQAQO for which it was most current

in 2008-2010. For example, if a monitor was in PQA0 A in 2008 and PQA0 B for 2009 and 2010, then the data for this monitor were included in PQA0 B for all of 2008-2010 since PQA0 B is more current than PQA0 A. For another example, if a monitor was in PQA0 C in 2008-2010 and in PQA0 D in 2011, the monitor was included in PQA0 C for all of 2008-2010. Even though PQA0 D is more current, it applies outside of 2008-2010 and thus is not considered.

Associating Method with Each Monitor

Precision and bias collocation requirements are at the method designation level, thus it is necessary to know how many monitors are operating each type of method within each PQA0. To determine method, the method associated with each monitor shown in Attachment 1, the Routine Completeness table, was used. For some of these monitors, the method is listed as “0”. These are cases where data for multiple methods is reported. In these cases, the method with the largest number of concentrations reported for the year on an AMP 501 report from AQS was the one associated with that monitor for the purpose of precision and bias collocation requirements.

In the case of hourly data, these data were averaged to create daily values. If a daily value was based on hourly measurements from more than one method, this daily value was deleted. This resulted in the omission of only one daily value.

At the outset of the development of this report, it was initially decided to retain monitors with only 0 or 1 method changes in all of 2008-2010 for the precision and bias work. The rationale was similar to that used for monitors being primary for at least 500 days. That is, the thought was that monitors that were not changing methods were the more long-term monitors and that they therefore would have more stable precision and bias estimates. Ninety-five percent of all primary monitors in 2008-2010 had 0 or 1 method changes. The other 5% had as few as 2 method changes up to as many as 500 changes. To maximize the amount of data available for the precision and especially the bias analyses, the restriction about the number of method changes was later removed so that any number of changes in reported method was allowed.

For monitors with multiple methods reported within a year, it was initially decided to associate all of the year’s data with the first method reported. The rationale for this was that decisions about collocation are made early in the year so that resources can be allocated appropriately. However, once it was seen that the number of method changes could be very large, it was then decided to use the most commonly reported method.

STEPS RELEVANT for Routine Data Completeness

Data from the AMP 420 report (data completeness) from AQS was used for completeness. For months subsequent to the “end” month specified on the AMP 420, data capture was changed from 0 to blank so those subsequent months did not impact quarterly or annual capture rates. For estimating national completeness, only those monitors that were primary were included for the period during which they were primary. Monitors with a monitor type of “Tribal Monitors” on the AMP 420 were summarized in the “Tribal” category and all other monitors were summarized in the “SLAMS” category.

Attachment 1 contains all sites with sampling Begin and End dates that include some or all of 2008-2010, regardless of whether the site was designated as primary.

STEPS RELEVANT for Flow Rate

Accuracy audit flow data were downloaded from AQS on March 15, 2012, as an AMP 502 report (precision and accuracy). Observations with null value codes were excluded. All other flags had no impact on the development of this database. An average percent difference was calculated for records that contained multiple accuracy measurements. Similarly, an average percent difference was calculated for multiple records with the same audit date.

Data with monitor types of SLAMS, NCORE, Proposed NCORE, Special Purpose, and Tribal monitors were retained. All others were omitted. The monitor type associated with each monitor was the most recent monitoring type for 2008-2010.

To create completeness counts (Table 2-2), for each site/POC, the number of quarters in a year for which an audit was taken was counted. Based on the operation dates for each site/POC, the number of required audits in a year was calculated. Specifically, if a site was operational for 1-6 months in a year, one audit was required, and if a site was operational for >6 months in a year, two audits were required. Completeness percentages were calculated as follows. If audits were taken for at least two quarters in a year, a site/POC was assigned a percent completeness of 100% for that year. If audits were taken for just 1 quarter in a year, the percent completeness was 50% for the year. In this way, no site received greater than 100% completeness even though some sites had more than two audits.

To create a summary of percent differences (Figure 2.5) only the primary monitor accuracy audits were used. The percent difference measurements were organized in ascending order and numbered consecutively. This rank of audits was then plotted to create Figure 2.5.

STEPS RELEVANT for Precision

Precision data may be loaded to AQS either as data streams for two independent samplers—with one denoted the primary sampler and one denoted the collocated sampler—or as a Precision and Accuracy Transaction such that the paired values are loaded. Both sources of data must be accessed to compile a complete precision database. That is, neither approach contains all of the precision data.

Data loaded as independent samplers were extracted from AQS Discoverer from the AutomatedPrecisionData view. The data loaded as Precision and Accuracy (P&A) Transactions were extracted from AQS Discoverer from the PrecisionData view. Both extractions were performed on February 14, 2013. Where there were differences between data reported on a P&A transaction and data reported as raw data streams, the data from the raw data streams was retained. There were few differences, some due to different method codes (less than 5 cases), and some due to different concentrations (also less than 5 cases). Hourly data with fewer than 18 hours representing a day (75%) were omitted.

Relative percent differences were calculated for each pair (X_i, Y_i), where i represents a day, using Equation 1. Equation 1 is identical to Equation 10 in *40 CFR Part 58 Appendix A*.

$$d_i = \frac{X_i - Y_i}{(X_i + Y_i)/2} * 100 \quad [\text{Eqn 1}]$$

For this report, only FRMs are summarized for precision. All counts are based on all valid pairs. Precision estimates are based only on those pairs for which the minimum concentration is greater than or equal to 3 µg/m³.

STEPS RELEVANT for Bias

The bias database was generated using two AQS reports: an AMP 350 (Raw Data) and AMP 502 (Precision and Accuracy). Both of these were then imported into Microsoft Access, where a query was run to select concentration data from the AMP 502 where the “Agency Performing Audit” field was not null. These data were then matched to those on the AMP 350, joining by site, date, duration, and POC. The AMP 350 provided the indicated values and methods whereas the AMP502 provided the actual values and methods. Pairs were retained only for those time intervals during which a monitor was primary and of desired monitor types.

Percent differences were calculated for each pair (X_i, Y_i) using Equation 2, where X_i represents the indicated concentration on day i and Y_i represents the actual concentration on day i . Equation 2 is identical to Equation 1 in *40 CFR Part 58 Appendix A*.

$$d_i = \frac{X_i - Y_i}{Y_i} * 100 \quad [\text{Eqn 2}]$$

All bias counts are based on all valid pairs. Bias estimates are based only on those pairs for which the minimum concentrations are greater than or equal to 3 µg/m³.

Additional Details

An important function of the 3-Year PM_{2.5} QA Reports is to check the coding of elements in AQS, elements that are important for summarizing, evaluating, and understanding the quality of the data coming from the PM_{2.5} monitoring network. This function proved especially important for precision for this report.

During the processing of the precision data, it was noted that some PQAOs had no collocation for precision for any primary monitors of the specified monitoring types. As another example, some states had precision data only for collocated FRM monitors of different sampling methodologies even though CFR stipulates that similar methods are to be collocated when the primary sampler is an FRM.

To assist with understanding of these issues, two preliminary bias and precision assessments were generated: one that was based solely on quality assurance data that complied with CFR requirements, and a second that was based on all quality assurance data reported. Where there were differences between the two assessments, especially striking differences such as no data to assess in the CFR-compliant case, the EPA Regional Offices worked with the State, Local, and Tribal entities to understand the differences. In several cases, it was discovered that the AQS codes associated with a monitor were not correct. These were updated and new extractions from AQS were then made for the analyses reported in this report.

For future 3-year QA reports, it may be fruitful to perform this initial step of reviewing coding prior to performing any data analyses.

Also, one of the EPA Regions reviewed summary reports generated by AQS to assess the bias counts reported in Attachment 5 of this report. The AQS report used was the AMP 250. This proved to be an invaluable comparison because it uncovered that the AMP 250 report includes bias pairs from dates for which a monitor was not primary whereas Attachment 5 includes only those bias pairs collected during time periods for which a monitor was listed as being primary. Thus two QA reports may provide different summary statistics depending on what data are allowed or disallowed in those summaries. This highlighted the importance of clearly specifying what data are and are not included in summaries. This attachment was developed with the goal of providing such specificity for the 2008-2010 PM_{2.5} QA Report.

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