COMMONWEALTH OF PUERTO RICO
Office of the Governor
Environmental Quality Board

Evaluation and Strategic Planning Area

October 14, 2009

MR GEORGE PAVLOU
ACTING REGIONAL ADMINISTRATOR
USEPA REGION 2
290 BROADWAY
NEW YORK NY 10007-1866

Dear Mr. Pavlou:

The Puerto Rico Environmental Quality Board (PREQB) is submitting the recommendations and designations of the areas of Commonwealth of Puerto Rico (CPR) for the new revised lead (Pb) National Ambient Air Quality Standards (NAAQS). This designation was made is accordance with the requirements of Section 107(d) (1) (A) of the Clean Air Act.

The recommendations and designations are based on available information on existing air monitoring data and the emissions inventory of sources that emit Pb. Based on the technical evaluation and the most recent data (2005-2008) the following are the designations and recommendations for the areas of CPR.

- attainment for the San Juan area based on existing monitoring data;
- unclassified for the Arecibo area until sufficient air quality data from the newly lead monitoring station is available to take final action.
- unclassified/attainment for the rest of the areas in Puerto Rico because sufficient monitoring data is not available to make a determination and the emissions sources located at this areas are below one (1) ton/yr.

If you have any questions, please contact me at (787) 767-8156 or Mrs. Lucía Fernández, Chief of Data Validation and Air Modeling Division, at 787-767-8181 extension 3255.

Cordially,

Pedro J. Nieves Miranda
Chairman

LFF/mec

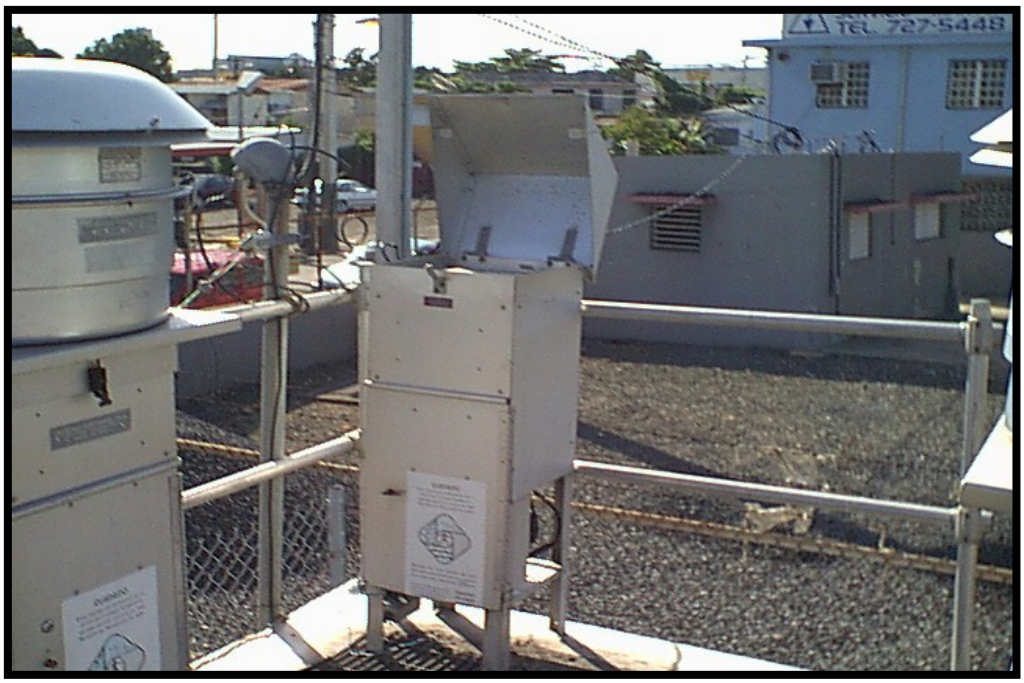
Enclosure: Puerto Rico Area Designation for the Lead

Cc: Richard Ruvo

Cruz A. Matos Environmental Agencies Building
Tel. 787-767-8181 • Fax 787-767-2592
PO Box 11488, San Juan, Puerto Rico 00910

Commonwealth of Puerto Rico
Puerto Rico Environmental Quality Board

Puerto Rico Area Designation for the Revised Lead National Ambient Air Quality Standard



October 14, 2009

TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS

AIRS: Aerometric Information Retrieval System

CAA: Clean Air Act

CFR: Code Federal Register

CPR: Commonwealth of Puerto Rico

EPA: Environmental Protection Agency

EQB: Environmental Quality Board

FRM: Federal Reference Method

NAAQS: National Air Ambient Quality Standards

PB: Lead

PR: Puerto Rico

PREQB: Puerto Rico Environmental Quality Board

TSP: Total Suspended Particulate

$\mu g/m^{3:}$ unit, micrograms per cubic meter

EXECUTIVE SUMMARY

Section 109(d)(1) of the Clean Air Act (CAA) requires the Environmental Protection Agency (EPA) to complete through review of the National Ambient Air Quality Standards (NAAQS) on 5 year intervals using the criteria published on section 108 of the CAA. In accordance with such requirements on October 15, 2009, EPA revised the Lead NAAQS. The new primary lead standard was lowered from the 1.5 micrograms per cubic meter ($\mu g/m^3$) level set in 1978, to a level of 0.15 $\mu g/m^3$ based on a quarterly averaging time. The reason for the change was to provide increased protection against lead-related welfare effects.

Section 107(d) (1) (A) of the Clean Air Act (CAA) establish the process for area designations following the establishment of a new revised NAAQS. Under this section, States are required to submit recommendations to EPA not later than one year after the promulgation of a new or revised standard. The areas must be classify as *attainment, nonattainment, or unclassifiable* with respect to the new or revised standard. The recommendations must be submitted to EPA by October 15, 2009.

The Environmental Quality Board (EQB) is responsible for developing and implementing emission control programs for attaining and maintaining the NAAQS. As required by section 107(d), the Commonwealth of Puerto Rico (CPR) is submitting the designations and recommendations for the new revised lead standard for EPA approval. In this document EQB is providing the list of designations recommendations for all areas in CPR base on available information on existing monitoring data and will be waiting for designation of the newly lead monitoring station are available.

AREA DESIGNATION

1) San Juan Area

The designation of the San Juan area is base on available monitoring data from monitoring station located at the Baldorioty Avenue, which is identified with the AIRS Number 72-127-0003. The lead and its compounds are measured as elemental lead in total suspended particulate (Pb-TSP), sampled and analyzed by a Federal Reference Method (FRM) in 40 Code of Federal Regulations Part 50 Appendix G – High Volume TSP.

The site was designed to account for geographic size, population density, complexity of terrain, meteorology, and to measured air quality to compare with the primary NAAQS for lead and to record the highest concentration in the area. The San Juan municipality has the Luis Muñoz Marin International Airport and EQB already has a lead monitor in the area. The EQB evaluated the quality assured, certified air quality data for the most recent three consecutive year period that includes the years 2005 to 2008, and determined that the data obtained do not exceed the revised lead NAAQS.

Figure 1 – Actual Lead Monitoring Network- San Juan

Procedure and results from San Juan Area

The Pb NAAQS is met at a monitoring site when the identified design value is valid and less than or equal to 0.15 micrograms per cubic meter (µg/m3). In accordance with 40 CFR Part 50 final version of Appendix R provides that the 3-month averages which include either of the two months prior to a three-calendar-year period will be associated with that 3-year period, and that the 3-month averages which include either of the two months after the three calendar year period will not be associated with it. The latter two months would be within the next 3-year period and their data would affect compliance during that next 3-year period.

The Pb sampling for San Juan has a schedule to take a sample every sixth day. The procedure approach to demonstrate attainment and calculate the design value is as follow:

1. Is average all scheduled, make-up, and extra samples taken on a given scheduled sample, typically, there will be up to five such 6-day averages in a month; there can be fewer 6-day averages if one or more of the 6-day periods yielded no valid data.
2. Is average these 6-day averages together to calculate the monthly average. This approach has the effect of giving equal weight to each 6-day period during a month regardless of how many samples were actually obtained during the 6 days, which mitigates the potential for the monthly average to be distorted. 3.
3. Calculating the 3-month average would be to average the three monthly averages giving equal weight to each month, as described above in the standard 2-step approach to calculating the 3-month mean.
4. Also, Puerto Rico applies the 75 percent completeness requirement at the 3-month level by averaging the three monthly completeness values to get the 3-month completeness value. This reduces the likelihood of an incompleteness situation for an entire 3-year evaluation period due to as few as two missed samples in a single month. The data substitution was applied in some individual month that has incomplete data relative to the 75 percent requirement. The data are still substituted within the individual month (i.e., if a day of concentration data is missing from January in one of the three years, the missing concentration is substituted with the highest available measured Pb concentration from other days in the three Januarys). Finally the comparison of the substituted average concentration to the level of the NAAQS is done for the 3-month average concentration not the monthly average concentration since a 3-month averaging time has been selected.
5. Comparison the identified design value with the 0.15 $\mu g/m^3$ to determine if meets the NAAQS.

According with the results, San Juan meets the primary Pb standards. The highest valid 3-month site-level mean over the most recent 38-month period concentration[1] is 0.049 µg/m^3 that is less than 0.15 µg/m^3. The average percent of days within the required monitoring with valid ambient monitoring data is greater than 75 % data completeness. Therefore the data completeness requirement is also met.

2) Arecibo Designations

According with the Pb emissions inventory the Arecibo area was identified with the potential to emit 1 ton of lead a year. EQB recommend establishing a newly monitoring station as part of the lead air quality monitoring network 2009. On January 1, 2010 should be installed and operational. The EQB intend to make designation when the necessary from the newly station is available.

3) Other Areas Designations

The Pb emissions inventory for Puerto Rico demonstrate that the rest areas in Puerto Rico do not have industries with the potential to emit 1 ton of lead a year or have more than 500,000 people. According with that the rest of Puerto Rico should be designated as unclassified/attainment.

CONCLUSION

Based on the technical documents and to the most recent data the following are the designations and recommendations for the new revised lead NAAQS in Puerto Rico:

- attainment for the San Juan area base on existing monitoring data;
- unclassified for the Arecibo area until sufficient air quality data from the newly lead monitoring station are available to take final action.
- unclassified/attainment for the rest of the areas in Puerto Rico because sufficient monitoring data is not available to make a determination and the emissions sources located at this areas are below one (1) ton/yr.

[1] See Table1 - 3-month site

APPENDIX I: DESIGN VALUE CALCULATIONS 3 MONTH ROLLING AVERAGE

Oct 2005 to Sept. 2008

AIRS Number 72-127-0003
Baldorioty Ave. at San Juan, Puerto Rico

Month Period	Design Value by 3-month
Oct/ 2005	0.006
Nov/ 2005	0.008
Dec/ 2005	0.007
Jan / 2006	0.006
Feb / 2006	0.004
Mar / 2006	0.000
Apr / 2006	0.000
May / 2006	0.000
Jun / 2006	0.000
Jul / 2006	0.000
Aug / 2006	0.000
Sep / 2006	0.000
Oct / 2006	0.000
Nov/ 2006	0.003
Dec/ 2006	0.006
Jan / 2007	0.010
Feb / 2007	0.007
Mar / 2007	0.004
Apr / 2007	0.000
May / 2007	0.000
Jun / 2007	0.000
Jul / 2007	0.000
Aug / 2007	0.005
Sep / 2007	0.009
Oct / 2007	0.011
Nov/ 2007	0.011
Dec/ 2007	0.017
Jan / 2008	0.033
Feb / 2008	0.044
Mar / 2008	**0.049**
Apr / 2008	0.036
May / 2008	0.022
Jun / 2008	0.011
Jul / 2008	0.010
Aug / 2008	0.010
Sep / 2008	0.010
Max Rolling Ave.	**0.049**