



MEMORANDUM

Pima County Department of Environmental Quality

DATE: 5/6/15

TO: Dr. Eugenia Favela
Superintendent

FROM: Beth Gorman
Senior Program Manager

Hector Encinas
Chief Financial Officer

RE: Pima County DEQ Beryllium Monitoring Report 1st Quarter 2015

Attached is the Pima County Department of Environmental Quality's (PDEQ) Air Monitoring Division Beryllium Monitoring Network Summary for the 1st Quarter of 2015.

Highlights:

- 105 samples collected resulting in 65 valid and 40 invalid samples (61.9% data recovery). EPA requires monitoring data recovery at 75%.
- No beryllium values were detected over the Practical Quantitation Limit (PQL).
- The PQL was updated from 0.265 to 0.225 to reflect the lowest standard used in the analysis.
- PDEQ air monitoring staff has offered to meet with and/or retrain SUSD staff to improve data recovery percentage rate and ensure quality data is being collected.

For additional information on this report, please contact me at Pima County Department of Environmental Quality at (520) 724-7400.

Attachment

Cc: Ursula Nelson, Pima County Department of Environmental Quality Director
Richard Grimaldi, Pima County Department of Environmental Quality Deputy Director



PIMA COUNTY

ENVIRONMENTAL QUALITY

Pima County

Department of Environmental Quality

Air Monitoring Division

Beryllium Monitoring Network Summary

1st Quarter 2015

*Pima County Department of Environmental Quality
33 N. Stone Avenue, Suite 700
Tucson, Arizona 85701*

Summary

The Pima County Department of Environmental Quality has contracted with the Pima County Regional Wastewater Reclamation Department (RWRD) to perform analysis on filters sampled in the Beryllium Monitoring Network located in the Sunnyside Unified School District.

For the 1st quarter of 2015 there was a total of 105 PM₁₀ samples collected resulting in 65 valid and 40 invalid samples; for a data recovery of 61.9 %. Two samples were collected to be used as precision checks as recommended in *40 CFR, Part 58, Appendix A, Section 5.3.1*. All samples run for a 24-hour period as specified in *40 CFR, Part 50, Appendix B*.

There were a total of 65 samples analyzed for beryllium. Beryllium concentrations are reported as <0.225 ng/m³ PQL (Practical Quantitation Level. In the preamble to a November 13, 1985 rulemaking (50 FR 46906), the PQL was defined as “the lowest concentration of an analyte that can be reliably measured within specific limits of precision and accuracy during routine laboratory operating conditions.” The Agency has used the PQL to estimate or evaluate the minimum concentration at which most laboratories can be expected to reliably measure a specific chemical contaminant during day-to-day analysis.

The following pages display the sampling dates, sampling locations, PM₁₀ concentrations (µg/m³) calculated in standard conditions, PM₁₀ 24-hour NAAQS standard, precision measurements, and beryllium analysis results, accompanying graphs and a brief explanation of all invalid samples for the 1st quarter of 2015.

PM₁₀ /Beryllium Concentrations

Monthly Summary of PM₁₀/Beryllium Data

January 2015

Date	Location	Standard Concentration PM ₁₀ (µg/m ³)	24-hour NAAQS PM ₁₀ (µg/m ³)	Beryllium (ng/m ³)
01/01/15	Los Amigos	11.0	150	<0.225
01/02/15	Los Niños	7.8	150	<0.225
01/03/15	Chaparral M.S.	13.4	150	<0.225
01/04/15	Transportation Bldg	7.4	150	<0.225
01/05/15	Sunnyside H.S.	12.1	150	<0.225
01/06/15	Ocotillo #1	17.2	150	<0.225
01/06/15	Ocotillo #2	20.2	150	<0.225
01/07/15	Los Amigos	10.6	150	<0.225
01/08/15	Los Niños	9.7	150	<0.225
01/09/15	Chaparral M.S.	7.7	150	<0.225
01/10/15	Transportation Bldg.	INVALID	INVALID	INVALID
01/11/15	Sunnyside H.S.	8.5	150	<0.225
01/12/15	Ocotillo #1	9.9	150	<0.225
01/12/15	Ocotillo #2	11.4	150	<0.225
01/13/15	Los Amigos	6.6	150	<0.225
01/14/15	Los Niños	10.1	150	<0.225
01/15/15	Chaparral M.S.	14.2	150	<0.225
01/16/15	Transportation Bldg.	INVALID	INVALID	INVALID
01/17/15	Sunnyside H.S.	10.7	150	<0.225
01/18/15	Ocotillo #1	13.8	150	<0.225
01/18/15	Ocotillo #2	16.2	150	<0.225
01/19/15	Los Amigos	13.6	150	<0.225
01/20/15	Los Niños	18.3	150	<0.225
01/21/15	Chaparral M.S.	16.6	150	<0.225
01/22/15	Transportation Bldg.	16.2	150	<0.225
01/23/15	Sunnyside H.S.	INVALID	INVALID	INVALID
01/24/15	Ocotillo #1	12.0	150	<0.225
01/24/15	Ocotillo #2	10.5	150	<0.225
01/25/15	Los Amigos	12.2	150	<0.225
01/26/15	Los Niño's	15.6	150	<0.225
01/27/15	Chaparral M.S.	INVALID	INVALID	INVALID
01/28/15	Transportation Bldg.	INVALID	INVALID	INVALID
01/29/15	Sunnyside H.S.	18.6	150	<0.225
01/30/15	Ocotillo #1	5.4	150	<0.225
01/30/15	Ocotillo #2	6.6	150	<0.225
01/31/15	Los Amigos	6.4	150	<0.225

Sample running on 01/10/15 was invalid due to part of the filter missing.

Sample running on 01/16/15 was invalid due to no ending flow rate annotated.

Samples running on 01/23/15, 01/27/15 and 01/28/15 invalid due to the samplers not running 24 hours ± 1 hour.

NAAQS = National Ambient Air Quality Standard for PM₁₀

PM₁₀ /Beryllium Concentrations (continued)

Monthly Summary of PM₁₀/Beryllium Data

February 2015

Date	Location	Standard Concentration PM₁₀ (µg/m³)	24-hour NAAQS PM₁₀ (µg/m³)	Beryllium (ng/m³)
02/01/15	Los Niños	8.8	150	<0.225
02/02/15	Chaparral M.S.	11.0	150	<0.225
02/03/15	Transportation Bldg	10.1	150	<0.225
02/04/15	Sunnyside H.S.	INVALID	INVALID	INVALID
02/05/15	Ocotillo #1	INVALID	INVALID	INVALID
02/05/15	Ocotillo #2	INVALID	INVALID	INVALID
02/06/15	Los Amigos	INVALID	INVALID	INVALID
02/07/15	Los Niños	INVALID	INVALID	INVALID
02/08/15	Chaparral M.S.	INVALID	INVALID	INVALID
02/09/15	Transportation Bldg	INVALID	INVALID	INVALID
02/10/15	Sunnyside H.S.	INVALID	INVALID	INVALID
02/11/15	Ocotillo #1	INVALID	INVALID	INVALID
02/11/15	Ocotillo #2	INVALID	INVALID	INVALID
02/12/15	Los Amigos	INVALID	INVALID	INVALID
02/13/15	Los Niños	INVALID	INVALID	INVALID
02/14/15	Chaparral M.S.	INVALID	INVALID	INVALID
02/15/15	Transportation Bldg.	INVALID	INVALID	INVALID
02/16/15	Sunnyside H.S.	INVALID	INVALID	INVALID
02/17/15	Ocotillo #1	INVALID	INVALID	INVALID
02/17/15	Ocotillo #2	INVALID	INVALID	INVALID
02/18/15	Los Amigos	INVALID	INVALID	INVALID
02/19/15	Los Niños	INVALID	INVALID	INVALID
02/20/15	Chaparral M.S.	INVALID	INVALID	INVALID
02/21/15	Transportation Bldg.	INVALID	INVALID	INVALID
02/22/15	Sunnyside H.S.	14.6	150	<0.225
02/23/15	Ocotillo #1	INVALID	INVALID	INVALID
02/23/15	Ocotillo #2	INVALID	INVALID	INVALID
02/24/15	Los Amigos	INVALID	INVALID	INVALID
02/25/15	Los Niños	INVALID	INVALID	INVALID
02/26/15	Chaparral M.S.	INVALID	INVALID	INVALID
02/27/15	Transportation Bldg.	INVALID	INVALID	INVALID
02/28/15	Sunnyside H.S.	13.9	150	<0.225

Samples running on 02/04/15, 02/05/15, 02/06/15, 02/07/15, 02/08/15, 02/09/15, 02/19/15 and 02/20/15, invalid due to double exposure caused by filter not being changed.

Samples running on 2/10/15, 02/11/15, 02/12/15, 02/13/15, 02/14/15, 02/15/15, 02/16/15, 02/17/15, 02/18/15, 02/21/15, 02/23/15, 02/24/15, 02/25/15, 02/26/15 and 02/27/15 invalid due to no sample caused by filters not being installed.

NAAQS = National Ambient Air Quality Standard for PM₁₀

PM₁₀ /Beryllium Concentrations (continued)

Monthly Summary of PM₁₀/Beryllium Data

March 2015

Date	Location	Standard Concentration PM₁₀ (µg/m³)	24-hour NAAQS PM₁₀ (µg/m³)	Beryllium (ng/m³)
03/01/15	Ocotillo #1	3.8	150	<0.225
03/01/15	Ocotillo #2	11.8	150	<0.225
03/02/15	Los Amigos	11.8	150	<0.225
03/03/15	Los Niños	4.6	150	<0.225
03/04/15	Chaparral M.S.	INVALID	INVALID	INVALID
03/05/15	Transportation Bldg.	17.5	150	<0.225
03/06/15	Sunnyside H.S.	13.7	150	<0.225
03/07/15	Ocotillo #1	7.9	150	<0.225
03/07/15	Ocotillo #2	11.4	150	<0.225
03/08/15	Los Amigos	14.0	150	<0.225
03/09/15	Los Niños	16.1	150	<0.225
03/10/15	Chaparral M.S.	24.8	150	<0.225
03/11/15	Transportation Bldg.	19.7	150	<0.225
03/12/15	Sunnyside H.S.	19.2	150	<0.225
03/13/15	Ocotillo #1	15.6	150	<0.225
03/13/15	Ocotillo #2	27.3	150	<0.225
03/14/15	Los Amigos	21.8	150	<0.225
03/15/15	Los Niños	11.8	150	<0.225
03/16/15	Chaparral M.S.	14.7	150	<0.225
03/17/15	Transportation Bldg.	17.9	150	<0.225
03/18/15	Sunnyside H.S.	INVALID	INVALID	INVALID
03/19/15	Ocotillo #1	INVALID	INVALID	INVALID
03/19/15	Ocotillo #2	INVALID	INVALID	INVALID
03/20/15	Los Amigos	6.7	150	<0.225
03/21/15	Los Niños	14.0	150	<0.225
03/22/15	Chaparral M.S.	17.5	150	<0.225
03/23/15	Transportation Bldg.	12.9	150	<0.225
03/24/15	Sunnyside H.S.	INVALID	INVALID	INVALID
03/25/15	Ocotillo #1	20.3	150	<0.225
03/25/15	Ocotillo #2	INVALID	INVALID	INVALID
03/26/15	Los Amigos	18.4	150	<0.225
03/27/15	Los Niños	15.5	150	<0.225
03/28/15	Chaparral M.S.	INVALID	INVALID	INVALID
03/29/15	Transportation Bldg.	12.5	150	<0.225
03/30/15	Sunnyside H.S.	22.1	150	<0.225
03/31/15	Ocotillo #1	INVALID	INVALID	INVALID
03/31/15	Ocotillo #2	28.7	150	<0.225

Sample running on 03/04/15 was invalid due to the flow being < 36cfm (cubic feet per minute).

Sample running on 03/18/15, 03/24/15 and 03/25/15 invalid due to the samplers not running 24 hours ± 1 hour.

Sample running on 03/19/15 was invalid due to no ending flow rate annotated.

Sample running on 03/28/15 was invalid due to a no sample. Access to the building unavailable due to renovations.

Sample running on 03/31/15 was invalid due to part of the filter missing.

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Precision of Duplicate Pairs – PM10

At low concentrations, agreement between the measurements of collocated samplers, expressed as relative percent difference, may be relatively poor. For this reason, collocated measurement pairs are selected for use in the precision and bias calculations only when both measurement pairs are equal to or above $15\mu\text{g}/\text{m}^3$ (40CFR58, Appendix A, Section 4c).

Sample Date	Primary Sampler Number	Measured PM ₁₀ ($\mu\text{g}/\text{m}^3$)	Duplicate Sampler Number	Measured PM ₁₀ ($\mu\text{g}/\text{m}^3$)	Difference ($\mu\text{g}/\text{m}^3$)	Percent Difference %
01/06/15	1	17.2	2	20.2	3.0	16.04
03/13/15	1	15.6	2	27.3	11.7	54.55

PM₁₀ Concentration Charts



