



MEMORANDUM

Pima County Department of Environmental Quality

TO: Mr. Steven Holmes
Superintendent

Hector Encinas
Chief Financial Officer

DATE: 8/24/15

FROM: Beth Gorman
Senior Program Manager

RE: Pima County DEQ Beryllium Monitoring Report 2nd Quarter 2015

Attached is the Pima County Department of Environmental Quality's (PDEQ) Air Monitoring Division Beryllium Monitoring Network Summary for the 2nd Quarter of 2015.

Highlights:

- 101 samples collected resulting in 91 valid and 10 invalid samples (90.10% 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

2nd Quarter 2015

*Pima County Department of Environmental Quality
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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 2nd quarter of 2015 there was a total of 101 PM₁₀ samples collected resulting in 91 valid and 10 invalid samples; for a data recovery of 90.1 %. Twelve 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 91 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 2nd quarter of 2015.

PM₁₀ /Beryllium Concentrations

Monthly Summary of PM₁₀/Beryllium Data

April 2015

Date	Location	Standard Concentration PM ₁₀ (µg/m ³)	24-hour NAAQS PM ₁₀ (µg/m ³)	Beryllium (ng/m ³)
04/01/15	Los Amigos	19.1	150	<0.225
04/02/15	Los Niños	28.4	150	<0.225
04/03/15	Chaparral M.S.	INVALID	INVALID	INVALID
04/04/15	Transportation Bldg	INVALID	INVALID	INVALID
04/05/15	Sunnyside H.S.	19.0	150	<0.225
04/06/15	Ocotillo #1	18.1	150	<0.225
04/06/15	Ocotillo #2	20.5	150	<0.225
04/07/15	Los Amigos	20.1	150	<0.225
04/08/15	Los Niños	22.5	150	<0.225
04/09/15	Chaparral M.S.	INVALID	INVALID	INVALID
04/10/15	Transportation Bldg.	INVALID	INVALID	INVALID
04/11/15	Sunnyside H.S.	19.2	150	<0.225
04/12/15	Ocotillo #1	7.7	150	<0.225
04/12/15	Ocotillo #2	15.3	150	<0.225
04/13/15	Los Amigos	16.7	150	<0.225
04/14/15	Los Niños	14.3	150	<0.225
04/15/15	Chaparral M.S.	26.4	150	<0.225
04/16/15	Transportation Bldg.	22.3	150	<0.225
04/17/15	Sunnyside H.S.	20.0	150	<0.225
04/18/15	Ocotillo #1	27.5	150	<0.225
04/18/15	Ocotillo #2	29.4	150	<0.225
04/19/15	Los Amigos	23.3	150	<0.225
04/20/15	Los Niños	33.0	150	<0.225
04/21/15	Chaparral M.S.	34.1	150	<0.225
04/22/15	Transportation Bldg.	21.4	150	<0.225
04/23/15	Sunnyside H.S.	27.6	150	<0.225
04/24/15	Ocotillo #1	19.1	150	<0.225
04/24/15	Ocotillo #2	20.1	150	<0.225
04/25/15	Los Amigos	18.5	150	<0.225
04/26/15	Los Niño's	12.0	150	<0.225
04/27/15	Chaparral M.S.	INVALID	INVALID	INVALID
04/28/15	Transportation Bldg.	13.1	150	<0.225
04/29/15	Sunnyside H.S.	13.4	150	<0.225
04/30/15	Ocotillo #1	22.7	150	<0.225
04/30/15	Ocotillo #2	21.7	150	<0.225

Samples running on 4/3/15, 4/9/15 and 4/27/15 invalid due to the power being turned off for renovations.

Samples running on 4/4/15 and 4/10/15 invalid due part of the filter missing.

NAAQS = National Ambient Air Quality Standard for PM₁₀

PM₁₀ /Beryllium Concentrations (continued)

Monthly Summary of PM₁₀/Beryllium Data

May 2015

Date	Location	Standard Concentration PM₁₀ (µg/m³)	24-hour NAAQS PM₁₀ (µg/m³)	Beryllium (ng/m³)
05/01/15	Los Amigos	23.9	150	<0.225
05/02/15	Los Niños	28.8	150	<0.225
05/03/15	Chaparral M.S.	19.5	150	<0.225
05/04/15	Transportation Bldg	14.6	150	<0.225
05/05/15	Sunnyside H.S.	INVALID	INVALID	INVALID
05/06/15	Ocotillo #1	22.5	150	<0.225
05/06/15	Ocotillo #2	22.8	150	<0.225
05/07/15	Los Amigos	19.6	150	<0.225
05/08/15	Los Niños	25.6	150	<0.225
05/09/15	Chaparral M.S.	19.0	150	<0.225
05/10/15	Transportation Bldg	16.9	150	<0.225
05/11/15	Sunnyside H.S.	20.1	150	<0.225
05/12/15	Ocotillo #1	27.3	150	<0.225
05/12/15	Ocotillo #2	31.1	150	<0.225
05/13/15	Los Amigos	11.2	150	<0.225
05/14/15	Los Niños	37.7	150	<0.225
05/15/15	Chaparral M.S.	23.4	150	<0.225
05/16/15	Transportation Bldg.	8.0	150	<0.225
05/17/15	Sunnyside H.S.	8.2	150	<0.225
05/18/15	Ocotillo #1	INVALID	INVALID	INVALID
05/18/15	Ocotillo #2	24.0	150	<0.225
05/19/15	Los Amigos	6.2	150	<0.225
05/20/15	Los Niños	21.8	150	<0.225
05/21/15	Chaparral M.S.	18.1	150	<0.225
05/22/15	Transportation Bldg.	16.7	150	<0.225
05/23/15	Sunnyside H.S.	12.3	150	<0.225
05/24/15	Ocotillo #1	18.4	150	<0.225
05/24/15	Ocotillo #2	18.9	150	<0.225
05/25/15	Los Amigos	13.8	150	<0.225
05/26/15	Los Niños	24.1	150	<0.225
05/27/15	Chaparral M.S.	INVALID	INVALID	INVALID
05/28/15	Transportation Bldg.	22.9	150	<0.225
05/29/15	Sunnyside H.S.	17.4	150	<0.225
05/30/15	Ocotillo #1	23.5	150	<0.225
05/30/15	Ocotillo #2	27.2	150	<0.225
05/31/15	Los Amigos	18.5	150	<0.225

Samples running on 5/27/15 invalid due to the power being turned off for renovations.

Sample running on 5/5/15 invalid due to a bad motor.

Sample running on 5/18/15 invalid due to a bad GFI.

NAAQS = National Ambient Air Quality Standard for PM₁₀

PM₁₀ /Beryllium Concentrations (continued)

Monthly Summary of PM₁₀/Beryllium Data

June 2015

Date	Location	Standard Concentration PM₁₀ (µg/m³)	24-hour NAAQS PM₁₀ (µg/m³)	Beryllium (ng/m³)
06/01/15	Los Niños	19.2	150	<0.225
06/02/15	Chaparral M.S.	INVALID	INVALID	INVALID
06/03/15	Transportation Bldg.	INVALID	INVALID	INVALID
06/04/15	Sunnyside H.S.	21.8	150	<0.225
06/05/15	Ocotillo #1	19.5	150	<0.225
06/05/15	Ocotillo #2	30.9	150	<0.225
06/06/15	Los Amigos	18.4	150	<0.225
06/07/15	Los Niños	13.8	150	<0.225
06/08/15	Chaparral M.S.	INVALID	INVALID	INVALID
06/09/15	Transportation Bldg.	12.0	150	<0.225
06/10/15	Sunnyside H.S.	10.2	150	<0.225
06/11/15	Ocotillo #1	24.6	150	<0.225
06/11/15	Ocotillo #2	21.5	150	<0.225
06/12/15	Los Amigos	19.1	150	<0.225
06/13/15	Los Niños	15.9	150	<0.225
06/14/15	Chaparral M.S.	INVALID	INVALID	INVALID
06/15/15	Transportation Bldg.	19.7	150	<0.225
06/16/15	Sunnyside H.S.	22.6	150	<0.225
06/17/15	Ocotillo #1	18.3	150	<0.225
06/17/15	Ocotillo #2	29.0	150	<0.225
06/18/15	Los Amigos	27.8	150	<0.225
06/19/15	Los Niños	30.5	150	<0.225
06/20/15	Chaparral M.S.	INVALID	INVALID	INVALID
06/21/15	Transportation Bldg.	22.7	150	<0.225
06/22/15	Sunnyside H.S.	20.2	150	<0.225
06/23/15	Ocotillo #1	31.3	150	<0.225
06/23/15	Ocotillo #2	INVALID	INVALID	INVALID
06/24/15	Los Amigos	37.9	150	<0.225
06/25/15	Los Niños	34.6	150	<0.225
06/26/15	Chaparral M.S.	INVALID	INVALID	INVALID
06/27/15	Transportation Bldg.	15.6	150	<0.225
06/28/15	Sunnyside H.S.	13.5	150	<0.225
06/29/15	Ocotillo #1	18.9	150	<0.225
06/29/15	Ocotillo #2	19.2	150	<0.225
06/30/15	Los Amigos	17.9	150	<0.225

Samples running on 6/4/15, 6/8/15, 6/14/15, 6/20/15, and 6/26/15 invalid due to the power being turned off for renovations. Sample running on 6/2/15 and 6/23/15 invalid due to the samplers not running 24 hours ± 1 hour.

NAAQS = National Ambient Air Quality Standard for PM₁₀

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 %
4/6/15	1	18.1	2	20.5	-2.4	-11.71
4/18/15	1	27.5	2	29.4	-1.9	-6.46
4/24/15	1	19.1	2	20.1	-1.0	-4.98
4/30/15	1	22.7	2	21.7	1.0	4.61
5/6/15	1	22.5	2	22.8	-0.3	-1.32
5/12/15	1	27.3	2	31.1	-3.8	-12.22
5/24/15	1	18.4	2	18.9	-0.5	-2.65
5/30/15	1	23.5	2	27.2	-3.7	-13.60
6/5/15	1	19.5	2	30.8	-11.3	-36.69
6/11/15	1	24.6	2	21.5	3.1	14.42
6/17/15	1	18.3	2	29.0	-10.7	-36.90
6/29/15	1	18.9	2	19.2	-0.3	-1.56

PM₁₀ Concentration Charts



