MEMORANDUM

Pima County Department of Environmental Quality

DATE: March 8, 2010

TO: Raul Ochoa
Assistant Superintendent Operations & Facilities Planning

FROM: Beth Gorman
Program Manager

RE: Pima County DEQ Beryllium Monitoring Report 4th Quarter 2009

Attached is the Pima County Department of Environmental Quality's (PDEQ) Air Monitoring Division Beryllium Monitoring Network Summary for the 4th Quarter of 2009.

Highlights:

- 110 samples collected resulting in 104 valid and 6 invalid samples (94.5% data recovery). EPA requires monitoring data recovery at 75%.
- No beryllium values were detected over the Practical Quantitation Limit (PQL).
- PDEQ and SUSD staff are continuing to employ stringent monitoring protocols to ensure quality data is being collected properly to better protect public health.

For additional information on this report, please contact me at Pima County Department of Environmental Quality at (520) 740-3340.

Attachment

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

Pima County

Department of Environmental Quality

Air Monitoring Division

Beryllium Monitoring Network Summary

4th Quarter 2009

Pima County Department of Environmental Quality
150 West Congress St., 1st Floor
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 4th quarter of 2009 there was a total of 110 PM_{10} samples collected resulting in 104 valid and 6 invalid samples; for a data recovery of 94.5 %. Thirteen 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 107 samples analyzed for beryllium. Beryllium concentrations are reported as <0.265 ng/m^3 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, PM_{10} concentrations (µg/m^3) calculated in standard conditions, PM_{10} 24-hour NAAQS standard, precision measurements, Beryllium analysis results, accompanying graphs and a brief explanation of all invalid samples for the 4th quarter of 2009.

PM_{10} /Beryllium Concentrations

Monthly Summary of PM_{10}/Beryllium Data

October - 2009

Date	Location	Standard Concentration PM_{10} (µg/m^3)	24-hour NAAQS PM_{10} (µg/m^3)	Beryllium (ng/m3)
10/01/09	Chaparral M.S.	50.0	150	<0.265
10/02/09	Transportation Bldg	38.8	150	<0.265
10/03/09	Sunnyside H.S.	12.4	150	<0.265
10/04/09	Ocotillo #1	12.9	150	<0.265
10/04/09	Ocotillo #2	12.7	150	<0.265
10/05/09	Los Amigos	34.8	150	<0.265
10/06/09	Los Niños	41.0	150	<0.265
10/07/09	Chaparral M.S.	32.8	150	<0.265
10/08/09	Transportation Bldg	25.4	150	<0.265
10/09/09	Sunnyside H.S.	32.1	150	<0.265
10/10/09	Ocotillo #1	31.5	150	<0.265
10/10/09	Ocotillo #2	30.6	150	<0.265
10/11/09	Los Amigos	15.3	150	<0.265
10/12/09	Los Niños	23.8	150	<0.265
10/13/09	Chaparral M.S.	INVALID	150	<0.265
10/14/09	Transportation Bldg	36.6	150	<0.265
10/15/09	Sunnyside H.S.	42.9	150	<0.265
10/16/09	Ocotillo #1	37.7	150	<0.265
10/16/09	Ocotillo #2	39.5	150	<0.265
10/17/09	Los Amigos	22.6	150	<0.265
10/18/09	Los Niños	21.4	150	<0.265
10/19/09	Chaparral M.S.	18.4	150	<0.265
10/20/09	Transportation Bldg	INVALID	150	<0.265
10/21/09	Sunnyside H.S.	33.5	150	<0.265
10/22/09	Ocotillo #1	23.8	150	<0.265
10/22/09	Ocotillo #2	28.3	150	<0.265
10/23/09	Los Amigos	48.2	150	<0.265
10/24/09	Los Niños	34.2	150	<0.265
10/25/09	Chaparral M.S.	29.9	150	<0.265
10/26/09	Transportation Bldg	47.8	150	<0.265
10/27/09	Sunnyside H.S.	59.9	150	<0.265
10/28/09	Ocotillo #1	30.0	150	<0.265
10/28/09	Ocotillo #2	31.4	150	<0.265
10/29/09	Los Amigos	27.5	150	<0.265
10/30/09	Los Niños	35.5	150	<0.265
10/31/09	Chaparral M.S.	32.1	150	<0.265

Sample running on 10/13/09 invalid for PM10 due to sampler flow being >44 CFM.

Sample running on 10/20/09 invalid for PM10 due to sampler flow being >44 CFM.

*Sample invalid for use in Beryllium analysis.

NAAQS = National Ambient Air Quality Standard for PM_{10}

PM_{10} /Beryllium Concentrations (continued)

Monthly Summary of PM_{10}/Beryllium Data

November - 2009

Date	Location	Standard Concentration PM_{10} ($\mu g/m^3$)	24-hour NAAQS PM_{10} ($\mu g/m^3$)	Beryllium (ng/m3)
11/01/09	Transportation Bldg	18.2	150	<0.265
11/02/09	Sunnyside H.S.	38.0	150	<0.265
11/03/09	Ocotillo #1	28.2	150	<0.265
11/03/09	Ocotillo #2	30.5	150	<0.265
11/04/09	Los Amigos	30.2	150	<0.265
11/05/09	Los Niños	25.2	150	<0.265
11/06/09	Chaparral M.S.	49.2	150	<0.265
11/07/09	Transportation Bldg	INVALID	150	<0.265
11/08/09	Sunnyside H.S.	20.5	150	<0.265
11/09/09	Ocotillo #1	30.4	150	<0.265
11/09/09	Ocotillo #2	32.1	150	<0.265
11/10/09	Los Amigos	34.4	150	<0.265
11/11/09	Los Niños	28.4	150	<0.265
11/12/09	Chaparral M.S.	INVALID	150	INVALID*
11/13/09	Transportation Bldg	12.9	150	<0.265
11/14/09	Sunnyside H.S.	18.5	150	<0.265
11/15/09	Ocotillo #1	15.2	150	<0.265
11/15/09	Ocotillo #2	17.3	150	<0.265
11/16/09	Los Amigos	25.8	150	<0.265
11/17/09	Los Ninos	INVALID	150	INVALID*
11/18/09	Chaparral M.S.	INVALID	150	INVALID*
11/19/09	Transportation Bldg	30.2	150	<0.265
11/20/09	Sunnyside H.S.	44.3	150	<0.265
11/21/09	Ocotillo #1	26.1	150	<0.265
11/21/09	Ocotillo #2	26.3	150	<0.265
11/22/09	Los Amigos	22.3	150	<0.265
11/23/09	Los Ninos	21.2	150	<0.265
11/24/09	Chaparral M.S.	37.4	150	<0.265
11/25/09	Transportation Bldg	36.0	150	<0.265
11/26/09	Sunnyside H.S.	44.4	150	<0.265
11/27/09	Ocotillo #1	24.7	150	<0.265
11/27/09	Ocotillo #2	26.3	150	<0.265
11/28/09	Los Amigos	45.1	150	<0.265
11/29/09	Los Niños	20.8	150	<0.265
11/30/09	Chaparral M.S.	5.5	150	<0.265

Sample running on 11/07/09 invalid for PM10 due to sampler flow being >44 CFM.

Sample running on 11/12/09 invalid due to double exposure caused by filter not being changed by SUSD.

Sample running on 11/17/09 invalid due to the filter not being installed by SUSD.

Sample running on 11/18/09 invalid due to double exposure caused by filter not being change by SUSD.

* Sample invalid for use in Beryllium analysis.

NAAQS = National Ambient Air Quality Standard for PM_{10}

PM_{10} /Beryllium Concentrations (continued)

Monthly Summary of PM_{10}/Beryllium Data

December - 2009

Date	Location	Standard Concentration PM_{10} ($\mu g/m^3$)	24-hour NAAQS PM_{10} ($\mu g/m^3$)	Beryllium (ng/m3)
12/01/09	Transportation Bldg	11.3	150	<0.265
12/02/09	Sunnyside H.S.	19.0	150	<0.265
12/03/09	Ocotillo #1	20.4	150	<0.265
12/03/09	Ocotillo #2	22.3	150	<0.265
12/04/09	Los Amigos	23.4	150	<0.265
12/05/09	Los Niños	13.8	150	<0.265
12/06/09	Chaparral M.S.	18.7	150	<0.265
12/07/09	Transportation Bldg	55.0	150	<0.265
12/08/09	Sunnyside H.S.	75.0	150	<0.265
12/09/09	Ocotillo #1	33.1	150	<0.265
12/09/09	Ocotillo #2	37.4	150	<0.265
12/10/09	Los Amigos	35.2	150	<0.265
12/11/09	Los Niños	30.5	150	<0.265
12/12/09	Chaparral M.S.	15.6	150	<0.265
12/13/09	Transportation Bldg	23.5	150	<0.265
12/14/09	Sunnyside H.S.	28.2	150	<0.265
12/15/09	Ocotillo #1	18.1	150	<0.265
12/15/09	Ocotillo #2	17.0	150	<0.265
12/16/09	Los Amigos	13.2	150	<0.265
12/17/09	Los Niños	21.5	150	<0.265
12/18/09	Chaparral M.S.	29.0	150	<0.265
12/19/09	Transportation Bldg	19.9	150	<0.265
12/20/09	Sunnyside H.S.	19.6	150	<0.265
12/21/09	Ocotillo #1	27.6	150	<0.265
12/21/09	Ocotillo #2	29.3	150	<0.265
12/22/09	Los Amigos	88.5	150	<0.265
12/23/09	Los Ninos	45.8	150	<0.265
12/24/09	Chaparral M.S.	12.6	150	<0.265
12/25/09	Transportation Bldg	12.1	150	<0.265
12/26/09	Sunnyside H.S.	17.1	150	<0.265
12/27/09	Ocotillo #1	11.6	150	<0.265
12/27/09	Ocotillo #2	12.1	150	<0.265
12/28/09	Los Amigos	13.8	150	<0.265
12/29/09	Los Ninos	16.6	150	<0.265
12/30/09	Chaparral M.S.	15.5	150	<0.265
12/31/09	Transportation Bldg	11.9	150	<0.265

* Sample invalid for use in Beryllium analysis.

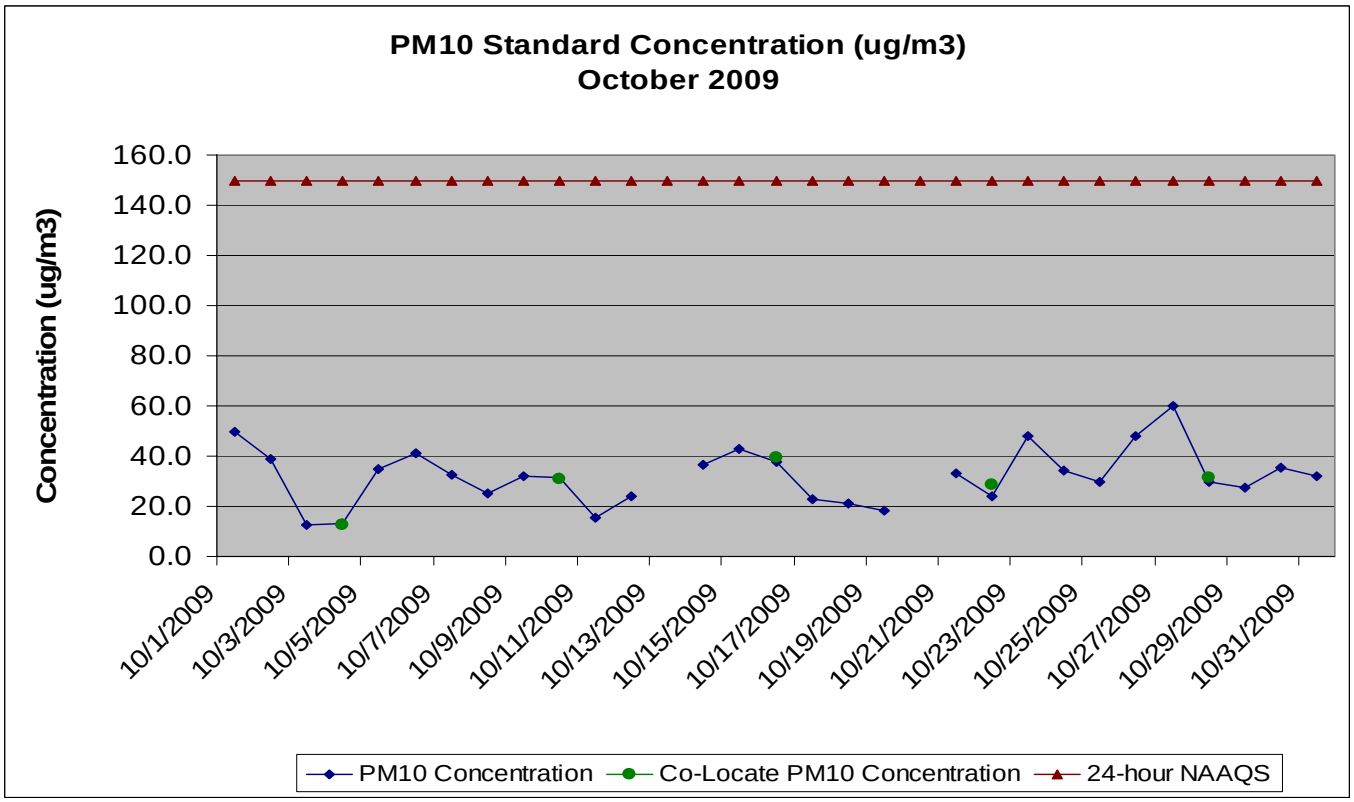
NAAQS = National Ambient Air Quality Standard for PM_{10}

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 15µg/m^3 (40CFR58, Appendix A, Section 4c).

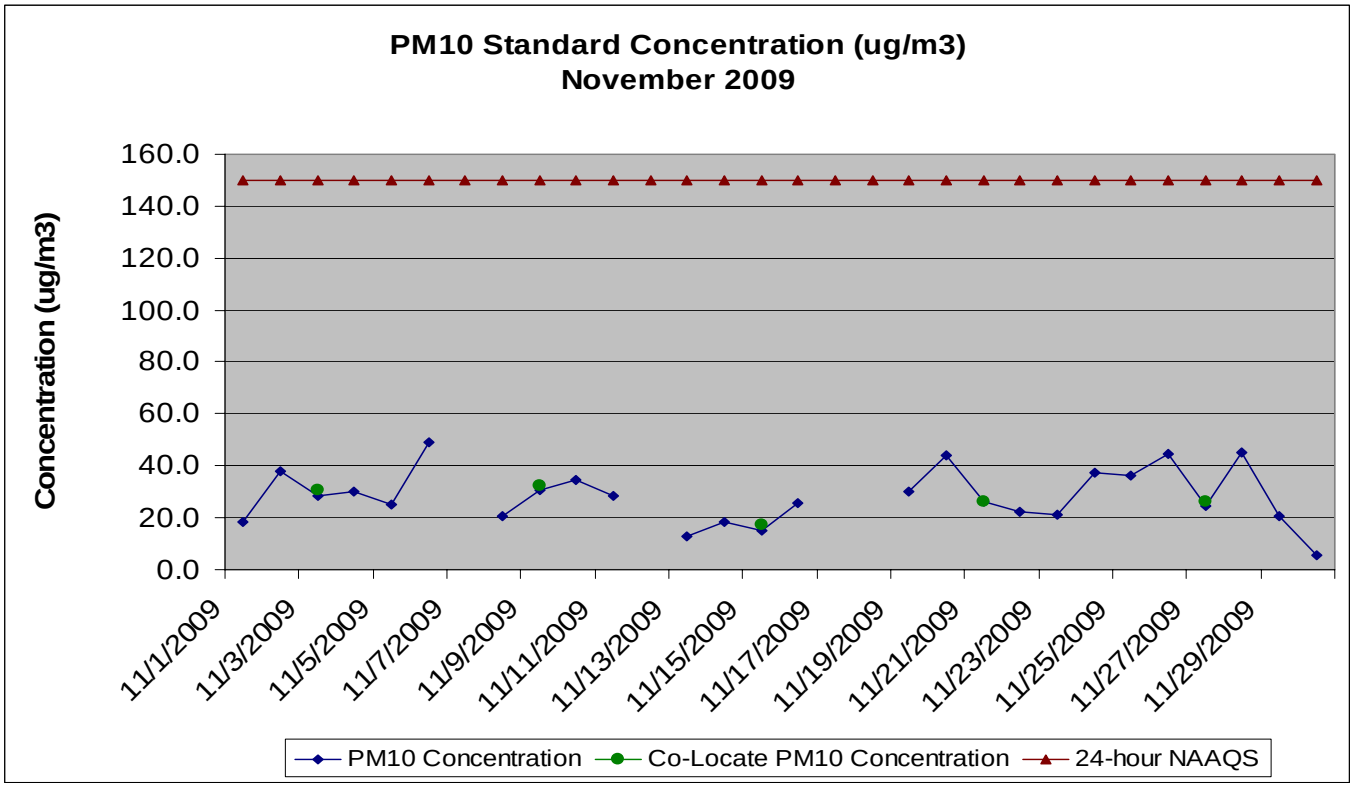
Sample Date	Primary Sampler Number	Measured PM_{10} (µg/m^3)	Duplicate Sampler Number	Measured PM_{10} (µg/m^3)	Difference (µg/m^3)	Percent Difference %
10/10/09	1	31.5	2	30.6	-0.9	-2.90
10/16/09	1	37.7	2	39.5	1.8	4.66
10/22/09	1	23.8	2	28.3	4.5	17.27
10/28/09	1	30.0	2	31.4	1.4	4.56
11/03/09	1	28.2	2	30.5	2.3	7.84
11/09/09	1	30.4	2	32.1	1.7	5.44
11/15/09	1	15.2	2	17.3	2.1	12.92
11/21/09	1	26.1	2	26.3	0.2	0.76
11/27/09	1	24.7	2	26.3	1.6	6.27
12/03/09	1	20.4	2	22.3	1.9	8.90
12/09/09	1	33.1	2	37.4	4.3	12.20
12/15/09	1	18.1	2	17.0	-1.1	-6.27
12/21/09	1	27.6	2	29.3	1.7	5.98

PM_{10} Concentration Charts



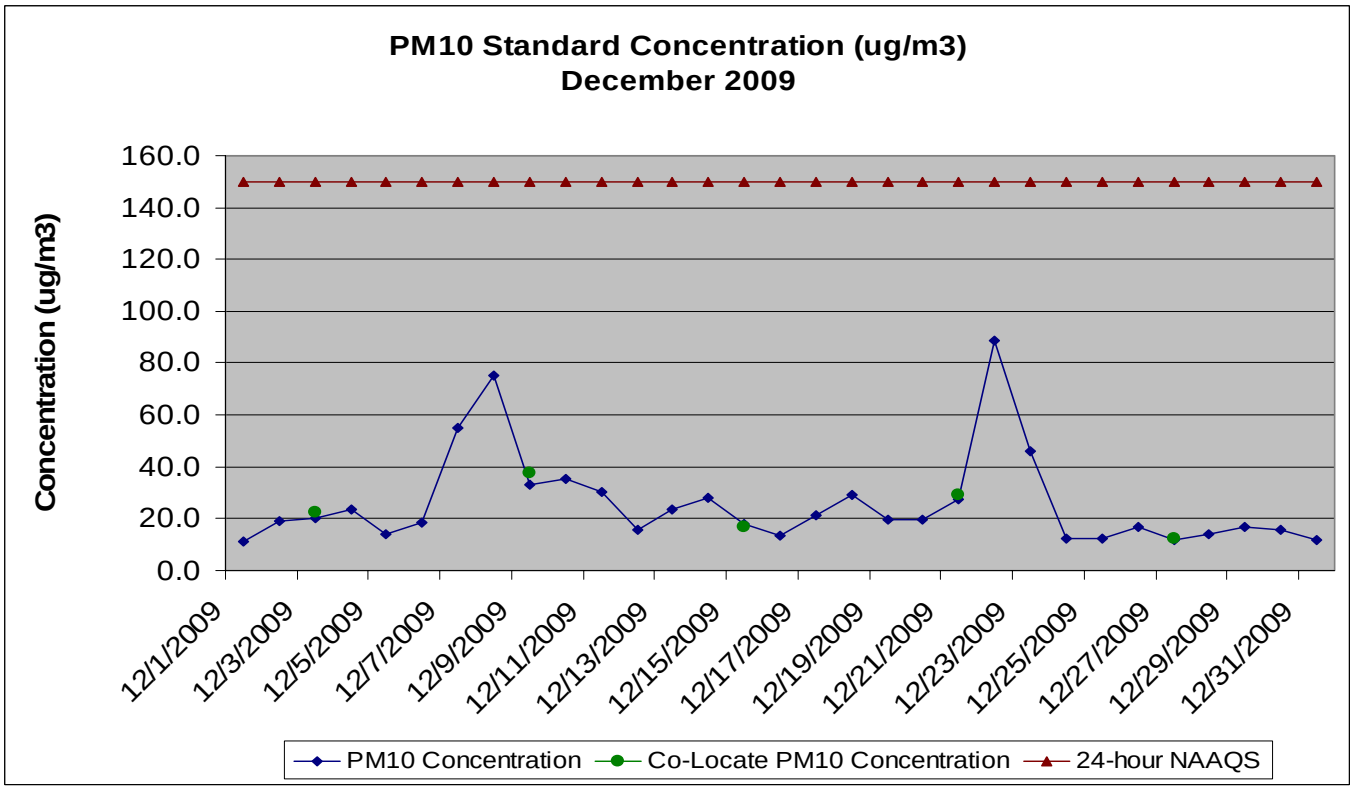
Sample running on 10/13/09 invalid for PM10 due to sampler flow being >44 CFM.
Sample running on 10/20/09 invalid for PM10 due to sampler flow being >44 CFM.

NAAQS = National Ambient Air Quality Standards for PM_{10}



Sample running on 11/07/09 invalid for PM10 due to sampler flow being >44 CFM.
Sample running on 11/12/09 invalid due to double exposure caused by filter not being changed by SUSD.
Sample running on 11/17/09 invalid due to the filter not being installed by SUSD.
Sample running on 11/18/09 invalid due to double exposure caused by filter not being change by SUSD.

NAAQS = National Ambient Air Quality Standards for PM_{10}



NAAQS = National Ambient Air Quality Standards for PM_{10}

Audit Results

Audits were performed on all of the samplers for the 4th quarter of 2009. If the audit flow rate percent difference is ≤ ± 10%, the sampler calibration is accepted. Differences exceeding ± 10% require sampler recalibration. Differences exceeding ± 15% will result in invalidation of all data subsequent to the last calibration or valid flow check. The following pages display the audit results for each sampling location.

AUDIT SPREADSHEET FOR PARTICULATES

Month	Ts	Ps
Jan	288.8	693.9
Feb	292.4	693.2
Mar	296.0	692.8
Apr	298.9	692.9
May	300.6	692.9
June	300.3	693.4
Jul	297.6	694.0
Aug	293.8	694.5
Sep	290.1	694.9
Oct	287.2	695.3
Nov	285.8	695.2
Dec	286.5	694.7

Sampler:	Chaparral M.S.	**Ts =**	286.5
Audit Date:	12/21/09	**Ps =**	694.7
Motor:	1424	**Temp c =**	17.30
Temp f:	63.14	**Ta =**	290.3
Press:	27.362	**Pa =**	695.0
Altim:	30.037	**Orifice Calibration Relationship**	
		m= 1.30507	**b=** -0.03648

Plate No.	Orifice dH20	Qa Orifice	Sampler dPex	Sampler dPext
18	4.41	37.7	2.38	1.00
13	3.70	34.6	2.02	0.92
10	3.06	31.6	1.68	0.84
7	2.03	25.9	1.17	0.70
5	1.32	21.1	0.85	0.60

Orifice dH2O	2.904
Sample dPex	1.6
Orifice Qa(m3/m)	0.871861
Sample Qa dPex	30.71088
Audit flow rate % diff:	5.31 %

Orifice		
dH2O	Qa(CFM)	Qa(M3/m)
2.904	30.78	0.87
Sampler w/Orifice		
dPex	Qa(CFM)	Qa(M3/m)
1.62	32.42	0.92

Sampler Audit Relationship		
m =	0.024	
b =	0.078	
r =	0.999	
	pm10	**tsp**
Set Point (cfm)	40.5	50.6
Set Point (H20)	2.7	4.1

AUDIT SPREADSHEET FOR PARTICULATES

Month	Ts	Ps
Jan	288.8	693.9
Feb	292.4	693.2
Mar	296.0	692.8
Apr	298.9	692.9
May	300.6	692.9
June	300.3	693.4
Jul	297.6	694.0
Aug	293.8	694.5
Sep	290.1	694.9
Oct	287.2	695.3
Nov	285.8	695.2
Dec	286.5	694.7

Sampler:	Sunnyside H.S.	**Ts =**	286.5
Audit Date:	12/21/09	**Ps =**	694.7
Motor:	1418	**Temp c =**	21.60
Temp f:	70.88	**Ta =**	294.6
Press:	27.362	**Pa =**	695.0
Altim:	30.037	**Orifice Calibration Relationship**	
		m= 1.30507	**b=** -0.03648

Plate No.	Orifice dH20	Qa Orifice	Sampler dPex	Sampler dPext
18	3.96	36.0	2.30	0.99
13	3.35	33.2	2.01	0.92
10	2.85	30.7	1.70	0.85
7	1.90	25.3	1.18	0.71
5	1.23	20.5	0.83	0.59

Orifice dH2O	2.658
Sample dPex	1.6
Orifice Qa(m3/m)	0.841284
Sample Qa dPex	29.64797
Audit flow rate % diff:	5.17 %

Orifice		
dH2O	Qa(CFM)	Qa(M3/m)
2.658	29.70	0.84
Sampler w/Orifice		
dPex	Qa(CFM)	Qa(M3/m)
1.60	31.24	0.88

Sampler Audit Relationship		
m =	0.026	
b =	0.062	
r =	0.999	
	pm10	**tsp**
Set Point (cfm)	41.1	51.4
Set Point (H20)	3.0	4.5

AUDIT SPREADSHEET FOR PARTICULATES

Month	Ts	Ps
Jan	288.8	693.9
Feb	292.4	693.2
Mar	296.0	692.8
Apr	298.9	692.9
May	300.6	692.9
June	300.3	693.4
Jul	297.6	694.0
Aug	293.8	694.5
Sep	290.1	694.9
Oct	287.2	695.3
Nov	285.8	695.2
Dec	286.5	694.7

Sampler: Los Amigos
Audit Date: 12/21/09
Motor: 1419
Temp f: 58.28
Press: 27.441
Altim: 30.122

Ts = 286.5
Ps = 694.7
Temp c = 14.60
Ta = 287.6
Pa = 697.0
Orifice Calibration Relationship
m= 1.30507 **b=** -0.03648

Plate No.	Orifice dH20	Qa Orifice	Sampler dPex	Sampler dPext
18	3.58	33.9	1.56	0.80
13	2.98	31.0	1.26	0.72
10	2.43	28.1	0.96	0.63
7	1.65	23.3	0.55	0.48
5	1.10	19.2	0.23	0.31

Orifice dH2O 2.348
Sample dPex 0.9
Orifice Qa(m3/m) 0.782163
Sample Qa dPex 27.86929

Audit flow rate % diff: 4.28 %

Orifice		
dH2O	Qa(CFM)	Qa(M3/m)
2.348	27.61	0.78

Sampler w/Orifice		
dPex	Qa(CFM)	Qa(M3/m)
0.91	28.80	0.82

Sampler Audit Relationship
m = 0.034
b = -0.320
r = 0.995

	pm10	tsp
Set Point (cfm)	40.0	50.0
Set Point (H20)	2.5	4.5

AUDIT SPREADSHEET FOR PARTICULATES

Month	Ts	Ps
Jan	288.8	693.9
Feb	292.4	693.2
Mar	296.0	692.8
Apr	298.9	692.9
May	300.6	692.9
June	300.3	693.4
Jul	297.6	694.0
Aug	293.8	694.5
Sep	290.1	694.9
Oct	287.2	695.3
Nov	285.8	695.2
Dec	286.5	694.7

Sampler: Los Niños
Audit Date: 12/21/09
Motor: 1421
Temp f: 67.10
Press: 27.362
Altim: 30.037

Ts = 286.5
Ps = 694.7
Temp c = 19.50
Ta = 292.5
Pa = 695.0
Orifice Calibration Relationship
m= 1.30507 **b=** -0.03648

Plate No.	Orifice dH20	Qa Orifice	Sampler dPex	Sampler dPext
18	3.23	32.5	1.31	0.74
13	2.73	30.0	1.04	0.66
10	2.28	27.5	0.83	0.59
7	1.56	22.9	0.48	0.45
5	1.00	18.5	0.26	0.33

Orifice dH2O 2.160
Sample dPex 0.8
Orifice Qa(m3/m) 0.758525
Sample Qa dPex 26.94804

Audit flow rate % diff: 4.25 %

Orifice		
dH2O	Qa(CFM)	Qa(M3/m)
2.160	26.78	0.76

Sampler w/Orifice		
dPex	Qa(CFM)	Qa(M3/m)
0.78	27.92	0.79

Sampler Audit Relationship
m = 0.029
b = -0.220
r = 0.999

	pm10	tsp
Set Point (cfm)	40.8	51.0
Set Point (H20)	2.3	3.9

AUDIT SPREADSHEET FOR PARTICULATES

Month	Ts	Ps
Jan	288.8	693.9
Feb	292.4	693.2
Mar	296.0	692.8
Apr	298.9	692.9
May	300.6	692.9
June	300.3	693.4
Jul	297.6	694.0
Aug	293.8	694.5
Sep	290.1	694.9
Oct	287.2	695.3
Nov	285.8	695.2
Dec	286.5	694.7

Sampler: Ocotillo #1 **Ts =** 286.5
Audit Date: 12/24/09 **Ps =** 694.7
Motor: 1420 **Temp c =** 13.50
Temp f: 56.30 **Ta =** 286.5
Press: 27.441 **Pa =** 697.0
Altim: 30.122 **Orifice Calibration Relationship**
m= 1.30507 **b=** -0.03648

Plate No.	Orifice dH20	Qa Orifice	Sampler dPex	Sampler dPext
18	3.83	34.9	1.59	0.81
13	3.18	31.9	1.28	0.73
10	2.67	29.3	0.98	0.63
7	1.80	24.3	0.56	0.48
5	1.18	19.8	0.23	0.31

Orifice dH2O	2.532
Sample dPex	0.9
Orifice Qa(m3/m)	0.809658
Sample Qa dPex	28.85584
Audit flow rate % diff:	4.27 %

Orifice		
dH2O	Qa(CFM)	Qa(M3/m)
2.532	28.58	0.81
Sampler w/Orifice		
dPex	Qa(CFM)	Qa(M3/m)
0.93	29.81	0.84

Sampler Audit Relationship
m = 0.033
b = -0.336
r = 0.997

	pm10	tsp
Set Point (cfm)	39.9	49.8
Set Point (H20)	2.3	4.2

AUDIT SPREADSHEET FOR PARTICULATES

Month	Ts	Ps
Jan	288.8	693.9
Feb	292.4	693.2
Mar	296.0	692.8
Apr	298.9	692.9
May	300.6	692.9
June	300.3	693.4
Jul	297.6	694.0
Aug	293.8	694.5
Sep	290.1	694.9
Oct	287.2	695.3
Nov	285.8	695.2
Dec	286.5	694.7

Sampler: Ocotillo #2 **Ts =** 286.5
Audit Date: 12/24/09 **Ps =** 694.7
Motor: 1417 **Temp c =** 13.50
Temp f: 56.30 **Ta =** 286.5
Press: 27.441 **Pa =** 697.0
Altim: 30.122 **Orifice Calibration Relationship**
m= 1.30507 **b=** -0.03648

Plate No.	Orifice dH20	Qa Orifice	Sampler dPex	Sampler dPext
18	3.90	35.2	1.71	0.84
13	3.32	32.6	1.42	0.76
10	2.79	30.0	1.14	0.68
7	1.83	24.5	0.68	0.53
5	1.19	19.9	0.35	0.38

Orifice dH2O	2.606
Sample dPex	1.1
Orifice Qa(m3/m)	0.820999
Sample Qa dPex	29.14093
Audit flow rate % diff:	4.43 %

Orifice		
dH2O	Qa(CFM)	Qa(M3/m)
2.606	28.98	0.82
Sampler w/Orifice		
dPex	Qa(CFM)	Qa(M3/m)
1.06	30.27	0.86

Sampler Audit Relationship
m = 0.030
b = -0.207
r = 0.999

	pm10	tsp
Set Point (cfm)	39.9	49.8
Set Point (H20)	2.3	4.0

AUDIT SPREADSHEET FOR PARTICULATES

Month	Ts	Ps
Jan	288.8	693.9
Feb	292.4	693.2
Mar	296.0	692.8
Apr	298.9	692.9
May	300.6	692.9
June	300.3	693.4
Jul	297.6	694.0
Aug	293.8	694.5
Sep	290.1	694.9
Oct	287.2	695.3
Nov	285.8	695.2
Dec	286.5	694.7

Sampler:	Transportation	**Ts =**	286.5
Audit Date:	12/21/09	**Ps =**	694.7
Motor:	1422	**Temp c =**	20.70
Temp f:	69.26	**Ta =**	293.7
Press:	27.362	**Pa =**	695.0
Altim:	30.037	**Orifice Calibration Relationship**	
		m= 1.30507	**b=** -0.03648

Plate No.	Orifice dH20	Qa Orifice	Sampler dPex	Sampler dPext
18	3.70	34.8	1.65	0.84
13	3.19	32.4	1.31	0.74
10	2.60	29.3	1.04	0.66
7	1.77	24.4	0.68	0.54
5	1.17	20.0	0.41	0.42

Orifice dH2O	2.486
Sample dPex	1.0
Orifice Qa(m3/m)	0.813326
Sample Qa dPex	28.81027
Audit flow rate % diff:	4.44 %

Orifice		
dH2O	Qa(CFM)	Qa(M3/m)
2.486	28.71	0.81

Sampler w/Orifice		
dPex	Qa(CFM)	Qa(M3/m)
1.02	29.99	0.85

Sampler Audit Relationship		
m =	0.028	
b =	-0.139	
r =	0.997	
	pm10	**tsp**
Set Point (cfm)	41.0	51.2
Set Point (H20)	2.3	3.8