

# New York PM<sub>2.5</sub> Data Management System

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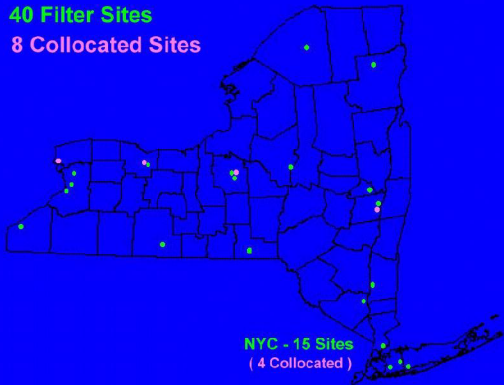
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*Assistance From: Don Daoust & Dirk Felton*

# New York PM<sub>2.5</sub> Monitoring Sites

40 Filter Sites

8 Collocated Sites



NYC - 15 Sites  
( 4 Collocated )

# NY Site Filter & Data Procedures

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## ■ Filter Handling Procedures

- ▶ Laboratory Ships Weighed Filters  
*(Albany, NYC, 3 University Sites)*
- ▶ Weekly Filter Exchanges
- ▶ Site Operators Program & Collect Samples
- ▶ Filters Shipped Back To Laboratory

## ■ Data Handling Procedures

- ▶ Site Operators Download Data From Samplers  
*Samplers: R & P 2025 Sequential Sampler*  
*State: Palmtops      Universities: Laptops*
- ▶ Transferred To PC, E-mailed To Central Office
- ▶ Laboratory: E-mail Filter Mass Data Table

# New York Data Management System

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- **Yearly Data Stored In Access<sup>®</sup> Database With Manipulations By Visual Basic<sup>®</sup> Programs**
  - ▶ Program 1 (*DIRECT INPUT*) Reads Text Files & Transfers Data Into Access<sup>®</sup> Table
    - 41 Parameters per Record
  - ▶ Program 2 (*PROCESS*) Removes Input Table Records
    - Deletes Identical Duplicates (& *Spacers: P99999999*)
    - Moves New Records To Data Table
    - Moves Problem Records To Error Table



# New York Data Management System

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- **Yearly Data Stored In Access<sup>®</sup> Database With Manipulations By Visual Basic<sup>®</sup> Programs**
  - ▶ Program 3 (*AUTO VERIFY*) Evaluates Data Table
    - Each Filter Record Must Pass 4 Criteria
      - Sampler Status Code
      - Critical Criteria (*Elapsed Time, Average Flow Rate, Flow COV*)
      - Field Sheet Verification
      - Laboratory Results
    - Write Data Into Summary Table (*Merge Lab & Field Data*)
  - ▶ Program 4 (*AIRS DATA*) Creates AIRS Input File
    - 10 Lines AIRS Input Data per Filter Record
    - Appropriate Missing Codes For Invalid Samples
    - Flags For Ambient/Filter Temp > 5°C Samples

# Auto-Verify Procedure

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- **Check Sampler Status Code**
  - ▶ 10 of 26 Codes Result In Invalid Flag
  - ▶ 1 of 26 Codes Flag Data
- **Critical Criteria Check**
  - ▶ Sampling Time = 1440 minutes  $\pm$  60 minutes
  - ▶ Average Flow Rate = 16.67 L/min  $\pm$  5 %
  - ▶ Flowrate Coefficient of Variation < 2.0
- **Field Sheet Verification**
  - ▶ Electronic Data Matches Field Sheet Information
  - ▶ Verify Sample Pickup Within 96 Hours
  - ▶ Record Impactor Change Date
  - ▶ Record Operator Comments - Missing Codes

# Field Sheet Verification Form

## PM 2.5 Field Data Sheet Verification:

Close Form - Return to Main Menu

Site Name:

Magazine Number:

Next

Previous

Site ID:

3/4/00

3/7/00

Refresh

|     | Filter Number                         | Cassette #                            | UseByDate                                      | ( Expected )<br>Sample Date         | Actual<br>Start Date                | Field Sheet Match                                                            | Verification Status                                              |
|-----|---------------------------------------|---------------------------------------|------------------------------------------------|-------------------------------------|-------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------|
| # 1 | <input type="text" value="P0181948"/> | <input type="text" value="RP019090"/> | <input type="text" value="#####"/>             | <input type="text" value="3/4/00"/> | <input type="text" value="3/4/00"/> | <input type="text" value="TRUE"/> <input type="text" value="Filtr 1 Match"/> | <input type="text"/>                                             |
| # 2 | <input type="text" value="P0181949"/> | <input type="text" value="RP035767"/> | <input type="text" value="#####"/>             | <input type="text" value="3/7/00"/> | <input type="text" value="3/7/00"/> | <input type="text" value="TRUE"/> <input type="text" value="Filtr 2 Match"/> | <input type="text"/>                                             |
|     |                                       |                                       | <input type="text" value="Blank Filter: Yes"/> |                                     |                                     |                                                                              |                                                                  |
| # 3 | <input type="text" value="P0181950"/> | <input type="text" value="RP019872"/> | <input type="text" value="#####"/>             | <input type="text" value="3/8/00"/> | <input type="text" value="3/8/00"/> | <input type="text" value="BLANK"/> <input type="text" value="Blank Filter"/> | <input type="text" value="Will Change Site ID to #####-Blank."/> |

Date Filter #1 Removed From Sampler (Before/On):

Refresh Screen

Date Filter #2 Removed From Sampler (Before/On):

Next

Previous

Date of Last Impactor Clean / Replace:

Filter #1

Copy -->

Filter #2

Previous Change:  Copy -->

Filter #1 Current Instrument Sample Flags:

Filter #2 Current Instrument Sample Flags:

SmryCode Filt One:

SmryCode Filt Two:

## PM2.5 Field Data Sheet:

Site Name and Number NYBG 7094-06

Operator FDM

| Filter# | Cassette# | Use By Date | Sample Date         |          |
|---------|-----------|-------------|---------------------|----------|
| #1      | P0181948  | RP019090    | 03/15/00            | 03/04/00 |
| #2      | P0181948  | RP035767    | 03/15/00            | 03/07/00 |
| #3      |           |             | Blank: Yes___ No___ |          |
| #4      |           |             | Empty: Yes___ No___ |          |

Date Filter #1 Removed From Sampler: \_\_\_\_\_ Less Than 96 Hr: \_\_\_\_\_

Date Filter #2 Removed From Sampler: \_\_\_\_\_ Less Than 96 Hr: \_\_\_\_\_

Date of Last Impactor Clean / Replace: \_\_\_\_\_

Date of Last Instrument Data Download: \_\_\_\_\_

Sampler Flags, Status Conditions or Power Outages: \_\_\_\_\_

Notes: \_\_\_\_\_

# Auto-Verify Procedure

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- **Laboratory Results Check**
  - ▶ **Receiving Temperature < 4°C**
  - ▶ **Invalidating Comments**
    - **Tear, Rip, Smudge**
  - ▶ **Net Loading Mass**
- **Write Data To Summary Table**
  - ▶ Merge Laboratory & Field Data
  - ▶ Calculate Concentrations
  - ▶ Display Verification Status
    - **Four Digit Code (5555)**
      - 1 = Passed      4 = Field Blank
      - 5 = Waiting      9 = Failed
  - ▶ Source For Quarterly Site Reports

# Site Specific Quarterly Report

709406 New York Botanical Gardens

Section: City ( Bob Elton ) Engr. Zaky Menesha

1999NY PM2.5 Data Summary

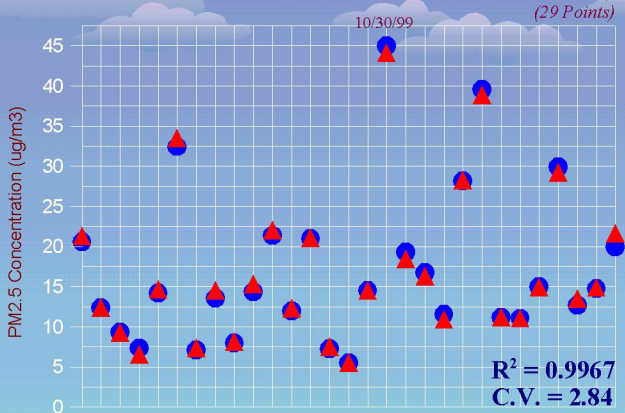
| RunDate  | Filter # | AVCode    | Validity      | Conc(ug/m3) | Explanation                             | Msg Code & Description     | Status Code & Description        | Serial # |
|----------|----------|-----------|---------------|-------------|-----------------------------------------|----------------------------|----------------------------------|----------|
| 10/3/99  |          | 9983      |               |             | No E-Data.                              | 9983 Collection Error      |                                  |          |
| 10/6/99  |          | 9983      |               |             | No E-Data.                              | 9983 Collection Error      |                                  |          |
| 10/9/99  | P9022379 | 1111      | Auto/Verified | 15.92       |                                         |                            | 00000000 None                    | 20356    |
| 10/12/99 | P9022468 | 1111      | Auto/Verified | 7.13        |                                         |                            | 00000000 None                    | 20356    |
| 10/15/99 | P9022469 | 1111      | Auto/Verified | 7.17        |                                         |                            | 00000000 None                    | 20356    |
| 10/18/99 | P9022578 | 1111      | Auto/Verified | 6.33        |                                         |                            | 00000000 None                    | 20356    |
| 10/21/99 | P9022579 | 1111      | Auto/Verified | 11.63       |                                         |                            | 00000000 None                    | 20356    |
| 10/24/99 | P9022682 | 1111      | Auto/Verified | 6.29        |                                         |                            | 00000000 None                    | 20356    |
| 10/27/99 | P9022683 | 1111      | Auto/Verified | 10.96       |                                         |                            | 00000000 None                    | 20356    |
| 10/30/99 | P9022788 | 1111      | Auto/Verified | 35.21       |                                         |                            | 00000000 None                    | 20356    |
| 11/2/99  | P9022789 | 1991 9983 |               |             | Operator Error - Programming Mistake w/ | 9983 Collection Error      | 00000000 None                    | 20356    |
| 11/5/99  | P9022897 | 1111      | Auto/Verified | 15.29       |                                         |                            | 00000000 None                    | 20356    |
| 11/8/99  | P9022898 | 1111      | Auto/Verified | 7.25        |                                         |                            | 00000000 None                    | 20356    |
| 11/11/99 | P9022996 | 1111      | Auto/Verified | 7.92        |                                         |                            | 00000000 None                    | 20356    |
| 11/14/99 | P9022997 | 1111      | Auto/Verified | 27.63       |                                         |                            | 00000000 None                    | 20356    |
| 11/17/99 |          | 9988      |               |             | Power Failure                           | 9988 Power Failure (POWER) |                                  |          |
| 11/20/99 | P9023137 | 9111 9984 |               | 14.42       | Lab Wgt > 30Days                        | 9984 Lab Error             | 00000000 None                    | 20356    |
| 11/23/99 | P9023225 | 1111      | Auto/Verified | 20.63       |                                         |                            | 00000000 None                    | 20356    |
| 11/26/99 | P9023226 | 1111      | Auto/Verified | 6.92        |                                         |                            | 00000000 None                    | 20356    |
| 11/29/99 | P9023339 | 1111      | Auto/Verified | 8.13        |                                         |                            | 00000000 None                    | 20356    |
| 12/2/99  | P9023340 | 1111      | Auto/Verified | 10.29       |                                         |                            | 00000000 None                    | 20356    |
| 12/5/99  | P9023424 | 9111 9977 |               | 32.42       | Filter Damage - Scratched               | 9977 Filter Leak           | 00000000 None                    | 20356    |
| 12/8/99  | P9023425 | 1111      | Auto/Verified | 21.63       |                                         |                            | 00000000 None                    | 20356    |
| 12/11/99 | P9023565 | 1111      | Auto/Verified | 4.17        |                                         |                            | 00000000 None                    | 20356    |
| 12/14/99 | P9023566 | 1111      | Auto/Verified | 9.46        |                                         |                            | 00000000 None                    | 20356    |
| 12/17/99 | P9023733 | 9111 9976 |               | 13.50       | LabFiltTemp>4                           | 9976 Filter Damage         | 00000000 None                    | 20356    |
| 12/20/99 | P9023735 | 9991 9976 |               |             | LabFiltTemp>4                           | 9976 Filter Damage         | 00800000 No Filters in Magazine, | 20356    |
| 12/23/99 | P9023847 | 1111      | Auto/Verified | 18.46       |                                         |                            | 00000000 None                    | 20356    |
| 12/26/99 | P9023848 | 1111      | Auto/Verified | 17.00       |                                         |                            | 00000000 None                    | 20356    |
| 12/29/99 | P9023940 | 1111      | Auto/Verified | 18.17       |                                         |                            | 00000000 None                    | 20356    |

Total Records: 30 Verified Records: 22 of 30 yields 73.3% Verified

Average Verified Conc: 13.34

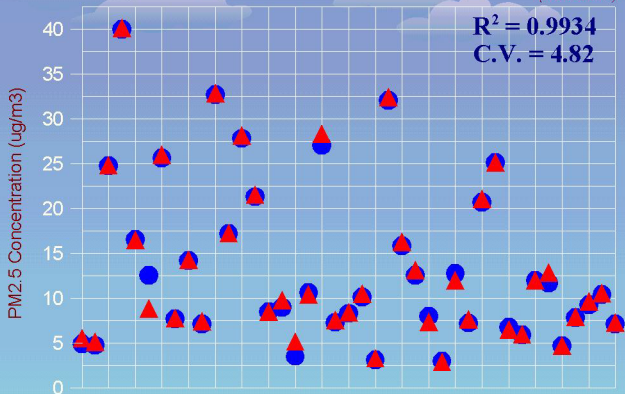
# Canal St. Collocated Data

Aug - Dec 1999



# Niagara Falls Collocated Data 3<sup>rd</sup>&4<sup>th</sup> Quarter '99

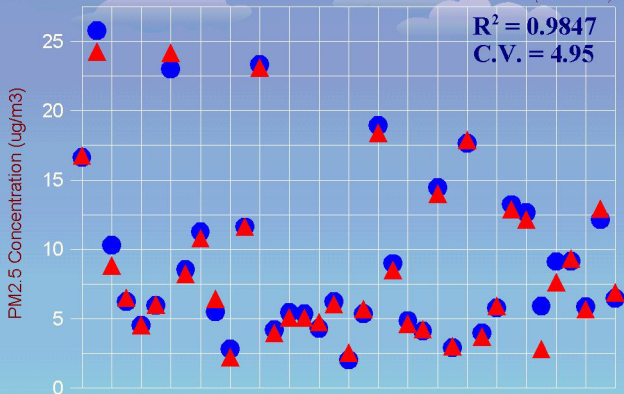
(41 Points)





# Syracuse Collocated Data 3<sup>rd</sup>&4<sup>th</sup> Quarter 1999

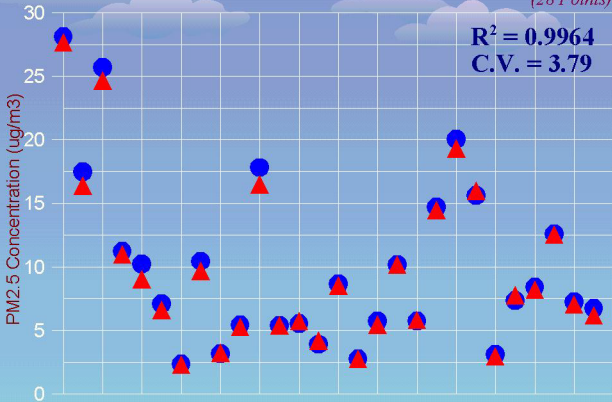
(37 Points)



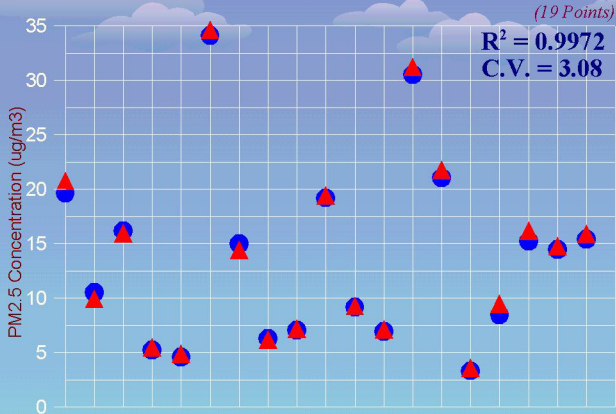
# Rochester Collocated Data

Sept - Dec 1999

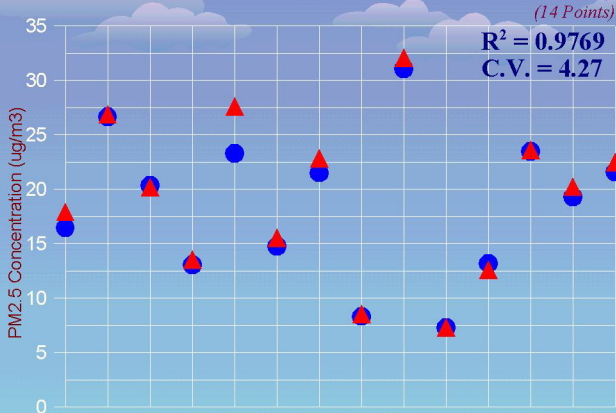
(28 Points)



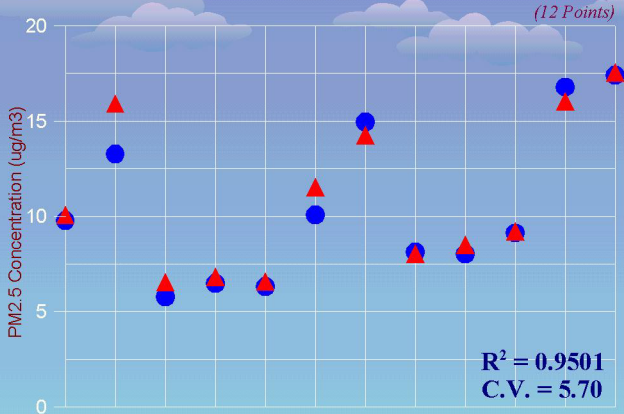
# NYC P.S.-29 Collocated Data 3<sup>rd</sup> & 4<sup>th</sup> Quarter 1999



# NYC P.S.-59 Collocated Data 3<sup>rd</sup> & 4<sup>th</sup> Quarter 1999



# NYC I.S.-52 Collocated Data 4<sup>th</sup> Quarter 1999



# Albany Collocated Data 3<sup>rd</sup> & 4<sup>th</sup> Quarter 1999

(17 Points)

