

Exchange Network Enabler

Air Data – Yesterday , Today, Tomorrow

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Pre Exchange Network – Opportunities

- Limited access to air data
- Labor intensive data collection process
- Data quality issues
- Barriers to integrating information

Air Emissions Data

- Source Registration via snail mail
- Set up temporary work area
- Sort, prepare, groan
- Hire data entry staff
- 6 weeks to enter data
- Spot audits of data quality
- Interpretation of data



**MassDEP Air Program Staff behold
Source Registration Forms**

MassDEP Air Database System

Air Emission & Facility Data

- 1980s Mainframe system
- Accessed by 5 people
- Slow, difficult to use
- Extract & eMail to EPA
- Data posted on EPA site and the calls came in – “that’s not what I submitted”

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( 7.1 ) AAT Year 2000 ( BC2200M2 )
**** VIEW A CASE ****

File No. H2006/1 File Loc'n RBG1 08/02/2006 Transf File
Case Type FOI Freedom of Information Act Transf Date
837 Rec'd Loading Case
Date Lodged 01/02/2006

Applicant Citizen AGS Ref No. CSOX
Respondent Registrar, Admin Appeals Tribunal Appl Ref No.
Resp Ref No.
TAX Year
Amount $

Public Hearing Y
Case Status COMPLETE Int. Case I S29 Sent 06/02/2006 Send S29 N
Remarks

Decision Date 08/02/2006 Type HAF Decision Number
Written Reasons (Y/N) Y Decision rec'd in Library Pages
PF4 Decisions PF5 Remarks PF6 Hearings PF7 Print PF8 Appeals PF9 Files
Command : PF10 Parties PF11 Abstract PF12 Links

H08CP1 023 C14 15
```

Typical Air System Screen

Event at Permitted Facility

- Emergency Responders head to site
- Air compliance staff head to the telephones and the file cabinets, photocopier, Fax machine, not the mainframe system
 - Too few people had access
 - System was hard to use
 - Data quality concerns

Exchange Network Air Project

National Air Emissions Inventory (NEI)

- Integrated Air Facility Permit data with environmental repository EPICS
- Replaced 1980s Air system with web application
- Flowing data to EPA via Network
- **ENABLED eDEP use**

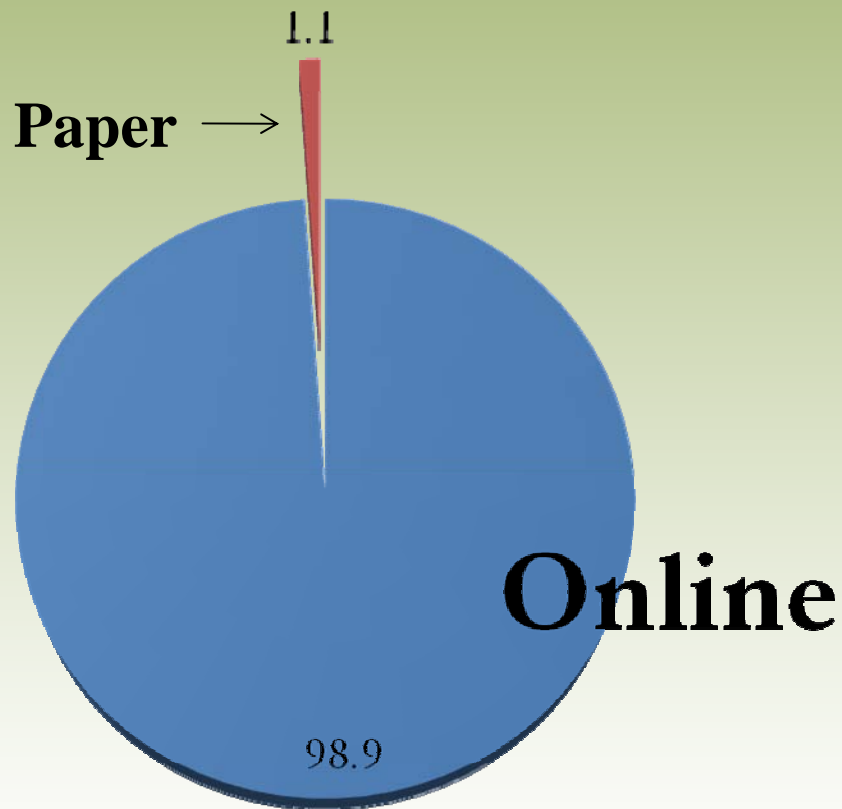


eDEP Online Reporting to EPICS

- Quality improvements
- Pre-populated data
- Entered by facilities
- Validated before submission
- Data flows to EPICS
- Then on to EPA
- Correct data posted on EPA website

The screenshot shows the eDEP online filing system interface. At the top, there is a logo for eDEP and the text "MassDEP's Online Filing System". Navigation links include "MassDEP Home", "Contact", "Feedback", "Tour", and "Privacy Policy". The main heading is "Login or Get Username & Password". A note states: "Note: eDEP is unavailable from 9:00PM Friday through 3:00AM Saturday for backup purposes. We are sorry for any inconvenience this may cause." Below this, there is a section for "eDEP New Features" with a link to "Preview eDEP's new look & new features". A welcome message follows: "Welcome to eDEP, a secure site for submitting environmental permits, transmittals, certifications, and reports electronically to the Massachusetts Department of Environmental Protection (DEP). With eDEP, you can fill out your forms online; save your work and return to it later; submit your forms and payments to DEP electronically, 'sign' your submittals; and print out receipts of your transactions." A list of links includes "What is eDEP & other FAQ's?", "What forms can I file in eDEP?", "Instructions for eDEP Forms", and "eDEP Contacts & Feedback". On the right side, there is a "Log into eDEP" section with fields for "Username:" and "Password:", a "Login" button, a "Forgot your Password?" link, and a "New User" button. Below this is a section for "Register and get Username and Password" and "Read the eDEP Requirement" with system requirements for PC's and Mac's.

eDEP Air Emissions 2007 Reporting



Post Exchange Network Event

“Explosion at Cement Plant sends 61 people to hospital”

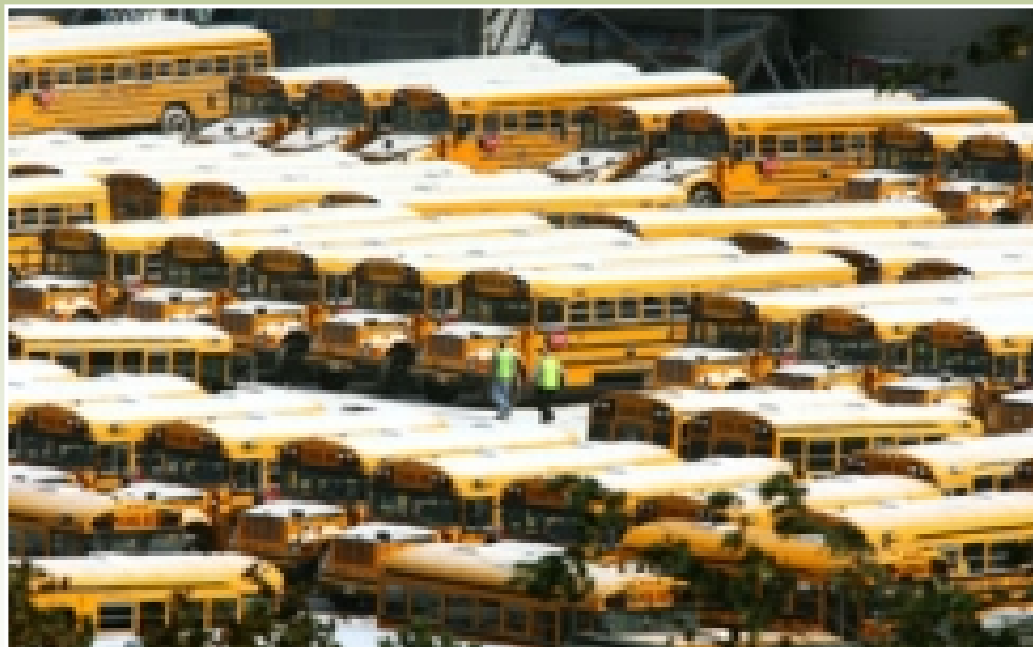
- Boston Globe

**“Health Advisory
Issued After
Concrete Dust
Incident”**

- Boston Herald

**“Dust from cement
plant covers school
buses, sickens
drivers”**

- Boston Metro



Post Exchange Network Event

- Emergency responders had information onsite
- Air program staff reviewed facility permit & compliance status, eMailed reports to Public Affairs office

LAFARGE NORTH AMERICA		Facility AQ Number: 1191473
		DEP Account Number: 362391
		Year of Record: 2006
Facility		
Location Address	285 MEDFORD ST CHARLESTOWN, MA 021290000 Phone: 6172419040 Fax: 6172429050	Stacks: 7 View Stacks Emission Units: 11 View Emission Units View Emissions View Actions Create Side-by-Side Report
Mailing Address	285 MEDFORD STREET CHARLESTOWN, MA 021290000	
Responsible official	Name: Phone: Email:	
Contacts are the most recent entered.		
Facility Contact	Owner	Air Emissions Contact
RAINHA, TED TED RAINHA 285 MEDFORD ST CHARLESTOWN, MA 021290000 USA Phone: 6172419040 Fax: 6172429050 Email: ted.rainha@lafarge-na.com	LAFARGE BUILDING MATERIALS INC PO BOX 3 RAVENA, NY 121430000 UNITED STATES Phone: 5187565026 Fax: Email:	RAINHA, TED TED RAINHA 285 MEDFORD ST CHARLESTOWN, MA 021290000 USA Phone: 6172419040 Fax: 6172429050 Email: ted.rainha@lafarge-na.com
Facility type:	P - PRIVATE	
ORIS facility code:		
NAICS code(s):	327999 - All Other Miscellaneous Nonmetallic Mineral Product Manufact	
Air Program code:	SIP - STATE IMPLEMENTATION PLAN	

EPICS Air Application

Ambient Air Quality Data

- Monitoring stations collect data
- Resource intensive QA/QC process
- Not suitable for citizen consumption
- Inadequate ability to share raw data with partners (Public Health Agency, Schools, Environmental Advocates, Research groups, etc.)

Public Air Quality Data

MassDEP provides a daily ozone forecast from April through September and a daily fine particles forecast all year round. Starting in 2008, the ozone forecasting season begins on April 1 (rather than on May 1), and forecasts will be based on the tighter ozone standard adopted by EPA in March 2008.

SEARCH

TUESDAY, NOV 4

Ozone	AQI	Rating
Western Mass.	NOT REPORTED	
Central Mass.	NOT REPORTED	
Eastern Mass.	NOT REPORTED	
Southcoast/Cape	NOT REPORTED	

Fine Particles	AQI	Rating
Blue Hill	52	moderate
Boston	80	moderate
Fall River	48	good
Haverhill	55	moderate
Lynn	60	moderate
Pittsfield	60	moderate
Quabbin	45	good
Springfield	65	moderate
Worcester	70	moderate

Air Quality Forecast

- Forecast info only
 - Fine Particles all year
 - Ozone Apr-Sept.
- Few Contextual links
- Color code - NA
- Raw data available IF
 - You know who to call
 - You know what to ask for
 - You know how to use it

Exchange Network Air Project

- **Ambient Air Quality (AQS)**
 - Streamline monthly air monitoring data flow
 - Easily flow daily pollutant data
 - Automate manual QA/QC of data
 - Deliver real-time air quality data to citizens
 - Provide tools to download raw data sets



MassAir Web Services

About MassDEP

Public Participation & News

Air & Climate

- reports, plans, & data
- air quality & monitoring
- rules & regulations
- permits, reporting & forms
- grants & assistance
- programs & initiatives
- publications & fact sheets

Water, Wastewater & Wetlands

Waste & Recycling

Toxics & Hazards

Cleanup of Sites & Spills

Now & Forecast | **Trends & Data** | **Pollutants & Standards** | **My Community**

Current Max | Forecast | Ozone | Fine Particles (PM2.5) | CO | SO2 | NO2 |

Current Max Pollution Level (9AM ~ 10AM)

Map View | Table View

Legend:

- Good
- Moderate
- Unhealthy for Sensitive Groups
- Unhealthy
- Very Unhealthy
- Hazardous

Alerts & Feedback

- Sign up for Alerts
- Ask a Question
- Provide Feedback

Haze Cams

View Boston haze cams






Learn More

MassAir – Health Implications

[Health Implications](#) [What causes good or bad air?](#) [Federal Standards](#)

Health Implications

The monitor colors on the map tell you how relatively clean or polluted the air is, and what this might mean for your health.

-  No Data
No monitor for the pollutant at this site or monitor is down.
-  0-50 = Good
Air pollution poses little or no risk
-  51-100 = Moderate
Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people. Unusually sensitive people should consider reducing prolonged or heavy exertion outdoors.
-  101-150 = Unhealthy for Sensitive Groups
Members of sensitive groups may experience health effects. For example, people with lung disease are at greater risk from exposure to ozone, while people with either lung disease or heart disease are at greater risk from exposure to particle pollution. Active children and adults, and people with lung disease, such as asthma, should reduce prolonged or heavy exertion outdoors. The general public is not likely to be affected when the AQI is in this range.
-  151-200 = Unhealthy
Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects. Active children and adults, older adults, and people with lung disease, such as asthma, should avoid prolonged or heavy exertion outdoors. Everyone else, especially children, should reduce prolonged or heavy exertion outdoors.

[Monitoring Program](#)

- [Where we monitor and why](#)
- [Aquinna Wampanoag Site](#)
- [What's new in Air Monitoring?](#)

MassAir – Google Mix

About MassDEP

Public Participation & News

Air & Climate

- :: reports, plans, & data
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- :: publications & fact sheets

Water, Wastewater & Wetlands

Waste & Recycling

Toxics & Hazards

Cleanup of Sites & Spills

Service Center

- [Calendar](#)
- [My Community](#)
- [Online Services](#)
- [Regional Offices](#)

Now & Forecast
Trends & Data
Pollutants & Standards
My Community

[Current Max](#) | [Forecast](#) | [Ozone](#) | [Fine Particles \(PM2.5\)](#) | [CO](#) | [SO2](#) | [NO2](#)

Current Max Pollution Level (9AM ~ 10AM)

Map View | Table View

↑

← →

↓

+

-

Worcester-Summer St (WORCESTER)

SUMMER ST
WORCESTER, MA 01604

* Carbon Monoxide (CO): 0.6 (ppm)

* Nitrogen Dioxide (NO2): 0.025 (ppm)

* Sulfur Dioxide (SO2): 0.006 (ppm)

* Fine Particles (PM2.5): 12.9 (ug/m3 LC)

Good

Moderate

Unhealthy for Sensitive Groups

Unhealthy

Very Unhealthy

Hazardous

Map data ©2008 Tele Atlas - [Terms of Use](#)

Display wind direction and speed [Zoom to Boston](#)

= Enlarge and shrink map [Data Disclaimer](#)

Alerts & Feedback

- [Sign up for Alerts](#)
- [Ask a Question](#)
- [Provide Feedback](#)

Haze Cams

[View Boston haze cams](#)

Learn More

- [Graph levels for the past day, week, or year](#)
- [Levels in Neighboring States](#)
- [Health Effects](#)
- [What you can do](#)

Federal Standards

[Health Implications](#)

[What causes good or bad air?](#)

[Federal Standards](#)

MassAir Trend Graphing Tool

About MassDEP

Public Participation & News

Air & Climate

- :: reports, plans, & data
- :: **air quality & monitoring**
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- :: permits, reporting & forms
- :: grants & assistance
- :: programs & initiatives
- :: publications & fact sheets

Water, Wastewater & Wetlands

Waste & Recycling

Toxics & Hazards

Cleanup of Sites & Spills

Service Center

- Calendar
- My Community
- Online Services
- Regional Offices
- Report Pollution

Now & Forecast
Trends & Data
Pollutants & Standards
My Community

Trends By Pollutant | Trends By Site | Get Data | Reports & Studies |

Select data for your graph to display:

Pollutant: Fine Particles (PM2.5) Period: Past 24 Hours

Calculation: Hourly Average Region: Boston Get Graph

Monitor Sites: Blue Hill-3 Boston-North End-3 Lynn-Water Treatment- Show AQI

Graph View
Table View

Download XML
Download CSV
View HTML

Long-term Trends by Pollutant

MassDEP has been monitoring some pollutants for more than 20 years. You can find summaries of long-term historic data for these pollutants at the following links . . .

- Ozone
- Particulate Matter (PM)
- Lead
- Toxics

MassAir Data Download Tool

The screenshot shows the MassAir Data Download Tool interface. On the left is a navigation menu with categories: About MassDEP, Public Participation & News, Air & Climate (with sub-items like reports, plans, & data; air quality & monitoring; rules & regulations; permits, reporting & forms; grants & assistance; programs & initiatives; publications & fact sheets), Water, Wastewater & Wetlands, Waste & Recycling, Toxics & Hazards, Cleanup of Sites & Spills, and Service Center (with icons for Calendar, My Community, and Online Services).

The main content area has a top navigation bar with tabs: Now & Forecast, Trends & Data (selected), Pollutants & Standards, and My Community. Below this is a secondary navigation bar with links: Trends By Pollutant, Trends By Site, Get Data (selected), Reports & Studies, and a vertical bar.

The 'Download Data Files:' section contains two dropdown menus: 'Please select a pollutant:' with the value 'Acceptable Bams PM2.5 Aqi & Speciation Mass' and 'Please select date period:' with the value '2008 December - Acceptable Bams PM2.5 Aqi & Speciation Mass'. Below these are three buttons: 'Download XML', 'Download CSV', and 'View HTML'.

Below the buttons, the text reads 'Download Data' and 'About Downloading Data'. A list of links follows, each with a downward arrow icon: 'How to get the data you want', 'Data Formats', 'Data Types Available', and 'Data Quality Review Status'.

MassAir Data Download Results

MassDEP Air Quality Monitoring Data Display

Site: Blue Hill (25-021-3003)

Site Information

State Code: MA
 County Code: 021
 Support Agency Code: 0660
 Location Address: BLUE HILL OBS
 City Code: 41725
 Address Postal Code: 02186
 Local Identifier: Blue Hill
 Local Name: MILTON
 Urban Area Code: 1120
 AQCR Code: 119
 Land Use Identifier: FOREST
 Location Setting Identifier: SUBURBAN
 Site Established Date: 2001-01-01
 Latitude: 42.211674000000002
 Longitude: -71.113864000000007
 Horizontal Collection Method Code: 015
 Horizontal Reference Datum: WGS84

Monitor Information (1 of 1)

Substance Identifier Code: 88502
 Substance Name: Acceptable Bams PM2.5 Aqi & Speciation Mass
 Substance Occurrence Code: 3

Raw Results: Acceptable Bams PM2.5 Aqi & Speciation Mass (88502)

Sample Date	Sample Time	Raw Result	Unit	Uncertainty Value	Qualifier Code	Method Code	Duration Code	Frequency Code	Data Validity	Data Approval	Alternate MDI
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MassAir Staff QA/QC Tool

QA Tools

- Data Management
- Data Comparison and Graphing
- Field Analyst Logs

Admin Tools

- EPA AQS Submission
- Administrator Tools
- Public Website Admin Tools

Data Review | **Data Upload** | **Data Entry**

Data Review

Below is a form that allows you to search for data that has already been uploaded to the system. Fill in the desired search Criteria below and click "Search" to retrieve the data from the system.

Each result can be edited by clicking the corresponding icon in the "Edit" column.

Null Code Reference Qualifier Code Reference

Data Search

Parameter Group: Duration: Manually Entered: Yes

Sites:	<input type="checkbox"/> Parameters:	Occurrence:
<input type="checkbox"/> [1] Adams-Mt. Greylock (25-003-4002)	<input type="checkbox"/> Carbon Monoxide	<input type="checkbox"/> 1
<input type="checkbox"/> [3] Amherst-U. Mass (25-015-0103)	<input type="checkbox"/> Nitric Oxide	<input type="checkbox"/> 2
<input type="checkbox"/> [31] Blue Hill (25-021-3003)	<input type="checkbox"/> Nitrogen Dioxide	<input type="checkbox"/> 3
<input type="checkbox"/> Boston-Charlestown (25-025-0027)	<input type="checkbox"/> Oxides Of Nitrogen	<input type="checkbox"/> 4
<input type="checkbox"/> [12] Boston-Kenmore Sq (25-025-0002)	<input type="checkbox"/> Ozone	<input type="checkbox"/> 5
<input type="checkbox"/> [15] Boston-Long Island (25-025-0041)	<input type="checkbox"/> PM10 - Lc	<input type="checkbox"/> 6
<input type="checkbox"/> [32] Boston-North End (25-025-0043)	<input type="checkbox"/> PM2.5 FRM - Local Conditions	<input type="checkbox"/> 7
	<input type="checkbox"/> Sulfur Dioxide	<input type="checkbox"/> 8

Method Code:

Date Period: ~

File Type: File Name:

File Submission: ~

Auto Validation Results:

Validity Code: Conditionally Valid Invalid Unknown Valid

Code Assigned Status: Null Code Assigned QC Code Assigned

MassAir Staff Web Editing Tool

MassDEP ENN4 QA Tools Latest Hourly Data: 2008-12-08 09:00
User ID: EHowe (ADMIN,WEB_ADMIN)

QA Tools

- Data Management
- Data Comparison and Graphing
- Field Analyst Logs

Admin Tools

- EPA AQS Submission
- Administrator Tools
- Public Website Admin Tools**

Alert Messages **Forecast Information** **Public Website Page Editor**

Public Website Page Editor

From this page you may change the HTML blocks of the Air Monitoring Public Website pages. Not all blocks (Top, Bottom, and Side) are available for edit on each Public Website page. Select the page you would like to edit by using the dropdowns and radio button provided on the right side of the screen. The image showing the blocks available for editing will change as you change the dropdowns to reflect the options for the current page.

Click "Load Content" to retrieve the HTML for the current page. Make any changes in the HTML Editing window as you wish and click "Save Content" to commit the changes to the database. For fast copying, you could "Load Content" from one page, change the current page by using the dropdowns/radio button, and then "Save Content" to the new current page. JavaScript may be included in the HTML as desired.

IMPORTANT: When you click "Save Content" the new HTML text will be immediately added to the corresponding Air Monitoring Public Website page. Invalid HTML or JavaScript will result in the failure of the corresponding Public Website page to display or function correctly. Therefore, all changes to the HTML for any Public Website page should be verified in an external HTML Editor and tested in a duplicate non-Production.

Legend: - - - - - Federal Standard / AQI Unhealthy for Sensitive Subgroups

Data Disclaimer -- raw vs. final data Show AQI explain
Help with this graphing tool Negative values explain
Download options explained Units explain

Long-term Trends by Pollutant

MassDEP has been monitoring some pollutants for more than 20 years. You can find summaries long-term historic data for these pollutants at the following links

Tabs: Trends & Data

Items: Trends By Pollutant

1.Top 2.Bottom

1

2

2nd page content. This and other content are at section 08

Exchange Network – Results!

MassDEP

- Improved access to data
- Better quality data
- More opportunities to share data
- Easy to use tools

Citizens

- Improved access to information
- Easy to understand – in context
- Ability to trend or download raw data for analysis

Exchange Network – Partnership

- Based on national standards and network tools
- Component based modules
- Available to other states and tribes
- Expand to neighboring states, regions, etc.

For More Information:

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Thank you.