



RELEASE ABATEMENT MEASURE (RAM) STATUS REPORT  
NO. 14, FORMER MANUFACTURED GAS PLANT (MGP) SITE  
10-2 PARCEL B, 129 COMMERCIAL STREET  
MALDEN, MASSACHUSETTS  
RTN 3-0362 AND LINKED RTN 3-3757 ✓  
TIER IB PERMIT 7378

U/A

SCANNED

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APR 11 2005

by

Haley & Aldrich, Inc.  
Boston, Massachusetts

DEP  
NORTHEAST REGIONAL OFFICE

for

Massachusetts Electric Company  
Westborough, Massachusetts

File No. 06558-711  
April 2005

HALEY &  
ALDRICH

**HALEY &  
ALDRICH**

**Letter of Transmittal**



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East Hartford, CT 06108-7303

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HaleyAldrich.com

Date 11 April 2005  
File Number 06558-711  
From Richard J. Rago

To Massachusetts Department of Environmental Protection  
Northeast Regional Office  
1 Winter Street  
Boston, Massachusetts 02108  
Attention Site Management Branch  
Copy to Distribution  
Subject Former Manufactured Gas Plant (MGP) Site  
Parcel B, 129 Commercial Street  
Malden, Massachusetts  
RTN 3-0362  
Tier IB Permit 7378

Copies	Date	Description
1, original	4/7/2005	BWSC Form 106
1	4/7/2005	Release Abatement Measure (RAM) Status Report No. 14
last entry		

Transmitted via ☐ First class mail ☐ Overnight express ☒ Hand delivery ☐ Other

**Remarks**

Please do not hesitate to call if you have any questions

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Massachusetts Department of Environmental Protection  
Bureau of Waste Site Cleanup

BWSC106

J.R.

RELEASE ABATEMENT MEASURE (RAM)  
TRANSMITTAL FORM

Release Tracking Number

0362

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

A. SITE LOCATION:

1. Site Name/Location Aid: Former Manufactured Gas Plant (MGP) Site

2. Street Address: 129 Commercial Street

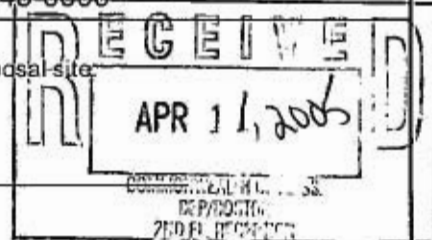
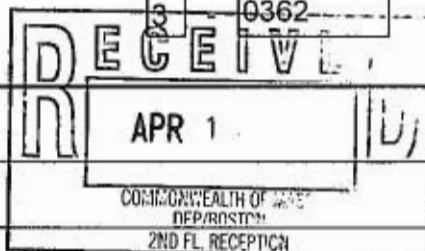
3. City/Town: Malden

4. ZIP Code: 02148-0000

☒ 5. Check here if a Tier Classification Submittal has been provided to DEP for this disposal site.

☐ a. Tier IA ☒ b. Tier IB ☐ c. Tier IC ☐ d. Tier II

6. If a Tier I Permit has been issued, provide Permit Number: 7378



B. THIS FORM IS BEING USED TO: (check all that apply)

1. List Submittal Date of Initial RAM Written Plan (if previously submitted): 07/02/1998  
(mm/dd/yyyy)

☐ 2. Submit an Initial Release Abatement Measure (RAM) Plan.

☐ a. Check here if this RAM Plan received previous oral approval from DEP as a continuation of a Limited Removal Action (LRA).

b. List Date of Oral Approval: \_\_\_\_\_  
(mm/dd/yyyy)

☐ 3. Submit a Modified RAM Plan of a previously submitted written RAM Plan.

☒ 4. Submit a RAM Status Report.

☐ 5. Submit a RAM Completion Statement.

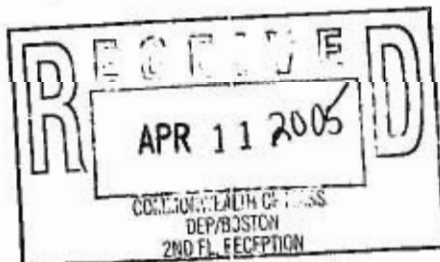
☐ 6. Submit a Revised RAM Completion Statement.

7. Provide Additional RTNs:

☐ a. Check here if this RAM Submittal covers additional Release Tracking Numbers (RTNs). RTNs that have been previously linked to a Primary Tier Classified RTN do not need to be listed here. This section is intended to allow a RAM to cover more than one unclassified RTN and not show permanent linkage to a Primary Tier Classified RTN.

b. Provide the additional Release Tracking Number(s) covered by this RAM Submittal.

☐ -  ☐ -



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(All sections of this transmittal form must be filled out unless otherwise noted above)



Massachusetts Department of Environmental Protection  
Bureau of Waste Site Cleanup

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RELEASE ABATEMENT MEASURE (RAM)  
TRANSMITTAL FORM

Release Tracking Number

3 - 0362

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

C. RELEASE OR THREAT OF RELEASE CONDITIONS THAT WARRANT RAM:

1. Identify Media Impacted and Receptors Affected: (check all that apply)

- ☒ a. Air ☐ b. Basement ☐ c. Critical Exposure Pathway ☒ d. Groundwater ☐ e. Residence  
☐ f. Paved Surface ☐ g. Private Well ☐ h. Public Water Supply ☐ i. School ☐ j. Sediments  
☒ k. Soil ☐ l. Storm Drain ☐ m. Surface Water ☐ n. Unknown ☐ o. Wetland ☐ p. Zone 2  
☐ q. Others Specify: \_\_\_\_\_

2. Identify all sources of the Release or Threat of Release, if known: (check all that apply)

- ☐ a. Above-ground Storage Tank (AST) ☐ b. Boat/Vessel ☐ c. Drums ☐ d. Fuel Tank  
☐ e. Pipe/Hose/Line ☐ f. Tanker Truck ☐ g. Transformer ☐ h. Under-ground Storage Tank (UST)  
☐ i. Vehicle ☒ j. Others Specify: Disposal associated with former MGP operations

3. Identify Oils and Hazardous Materials Released: (check all that apply)

- ☐ a. Oils ☐ b. Chlorinated Solvents ☐ c. Heavy Metals  
☒ d. Others Specify: MGP contaminants: VOCs, PAHs, Cyanide

D. DESCRIPTION OF RESPONSE ACTIONS: (check all that apply, for volumes list cumulative amounts)

- |  |   |
|--|---|
| <input type="checkbox"/> 1. Assessment and/or Monitoring Only                | <input type="checkbox"/> 2. Temporary Covers or Caps                        |
| <input type="checkbox"/> 3. Deployment of Absorbent or Containment Materials | <input type="checkbox"/> 4. Temporary Water Supplies                        |
| <input checked="" type="checkbox"/> 5. Structure Venting System              | <input type="checkbox"/> 6. Temporary Evacuation or Relocation of Residents |
| <input type="checkbox"/> 7. Product or NAPL Recovery                         | <input type="checkbox"/> 8. Fencing and Sign Posting                        |
| <input type="checkbox"/> 9. Groundwater Treatment Systems                    | <input type="checkbox"/> 10. Soil Vapor Extraction                          |
| <input type="checkbox"/> 11. Bioremediation                                  | <input type="checkbox"/> 12. Air Sparging                                   |
| <input type="checkbox"/> 13. Excavation of Contaminated Soils                |   |

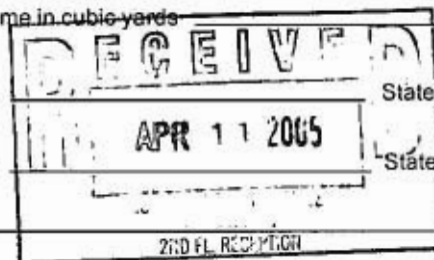
☐ a. Re-use, Recycling or Treatment ☐ i. On Site Estimated volume in cubic yards \_\_\_\_\_

☐ ii. Off Site Estimated volume in cubic yards \_\_\_\_\_

ii.a. Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_

ii.b. Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_

iii. Describe: \_\_\_\_\_



State: \_\_\_\_\_

State: \_\_\_\_\_





Massachusetts Department of Environmental Protection  
Bureau of Waste Site Cleanup

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Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

D. DESCRIPTION OF RESPONSE ACTIONS (cont): (check all that apply, for volumes list cumulative amounts)

☐ b. Store

☐ i. On Site Estimated volume in cubic yards \_\_\_\_\_

☐ ii. Off Site Estimated volume in cubic yards \_\_\_\_\_

iiia. Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_ State: \_\_\_\_\_

iiib. Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_ State: \_\_\_\_\_

☐ c. Landfill

☐ i. Cover Estimated volume in cubic yards \_\_\_\_\_

Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_ State: \_\_\_\_\_

☐ ii. Disposal Estimated volume in cubic yards \_\_\_\_\_

Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_ State: \_\_\_\_\_

☐ 14. Removal of Drums, Tanks or Containers:

a. Describe Quantity and Amount: \_\_\_\_\_

b. Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_ State: \_\_\_\_\_

c. Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_ State: \_\_\_\_\_

☒ 15. Removal of Other Contaminated Media:

a. Specify Type and Volume: To date: 47 55-gal drums (approx 7755 LBS) spent activated carbon

b. Receiving Facility: Clean Harbors Town: Bristol State: CT

c. Receiving Facility: Clean Harbors Town: Braintree State: MA

☐ 16. Other Response Actions:

Describe: \_\_\_\_\_

☐ 17. Use of Innovative Technologies:

Describe: \_\_\_\_\_



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TRANSMITTAL FORM

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Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

E. LSP SIGNATURE AND STAMP :

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief,

> if Section B of this form indicates that a **Release Abatement Measure Plan** is being submitted, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B of this form indicates that a **Release Abatement Measure Status Report** is being submitted, the response action(s) that is (are) the subject of this submittal (i) is (are) being implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B of this form indicates that a **Release Abatement Measure Completion Statement** is being submitted, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP #: 2242

2. First Name: Richard

3. Last Name: Standish

4. Telephone: (860) 290-3131

5. Ext.: \_\_\_\_\_

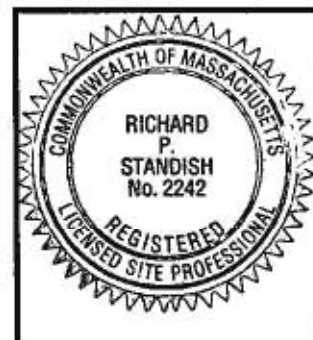
6. FAX: (860) 282-9500

7. Signature: Richard P. Standish

8. Date: 04/07/2005

(mm/dd/yyyy)

9. LSP Stamp:





Massachusetts Department of Environmental Protection  
Bureau of Waste Site Cleanup

BWSC106

RELEASE ABATEMENT MEASURE (RAM)  
TRANSMITTAL FORM

Release Tracking Number

3 - 0362

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

F. PERSON UNDERTAKING RAM:

1. Check all that apply: ☐ a. change in contact name ☐ b. change of address ☐ c. change in the person undertaking response actions
2. Name of Organization: Massachusetts Electric Company
3. Contact First Name: Michele 4. Last Name: Leone
5. Street: 25 Research Drive 6. Title: \_\_\_\_\_
7. City/Town: Westborough 8. State: MA 9. ZIP Code: 01582-0000
10. Telephone: (508) 389-4296 11. Ext.: \_\_\_\_\_ 12. FAX: (508) 389-4299

G. RELATIONSHIP TO RELEASE OR THREAT OF RELEASE OF PERSON UNDERTAKING RAM:

- ☒ 1. RP or PRP ☐ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter  
☒ e. Other RP or PRP Specify: Party of Interest
- ☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)
- ☐ 3. Agency or Public Utility on a Flight of Way (as defined by M.G.L. c. 21E, s. 5(j))
- ☐ 4. Any Other Person Undertaking RAM Specify Relationship: \_\_\_\_\_

H. REQUIRED ATTACHMENT AND SUBMITTALS:

- ☐ 1. Check here if any Remediation Waste, generated as a result of this RAM, will be stored, treated, managed, recycled or reused at the site following submission of the RAM Completion Statement. You must submit a Phase IV Remedy Implementation Plan along with the appropriate transmittal form (BWSC108).
- ☒ 2. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.
- ☒ 3. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the implementation of a Release Abatement Measure.
- ☐ 4. Check here if any non-updatable information provided on this form is incorrect, e.g. Release Address/Location Aid. Send corrections to the DEP Regional Office.
- ☐ 5. If a RAM Compliance Fee is required for this RAM, check here to certify that a RAM Compliance Fee was submitted to DEP, P. O. Box 4062, Boston, MA 02211.
- ☒ 6. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.



Massachusetts Department of Environmental Protection  
Bureau of Waste Site Cleanup

BWSC106

RELEASE ABATEMENT MEASURE (RAM)  
TRANSMITTAL FORM

Release Tracking Number

3 - 3757

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

I. CERTIFICATION OF PERSON UNDERTAKING RAM:

1. I, Michael Lotti, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment for willfully submitting false, inaccurate, or incomplete information.

2. By: [Signature]

Signature

3. Title: Environmental Engineer

4. For: Massachusetts Electric Company

(Name of person or entity recorded in Section F)

5. Date: 04/04/2005

(mm/dd/yyyy)

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section F.

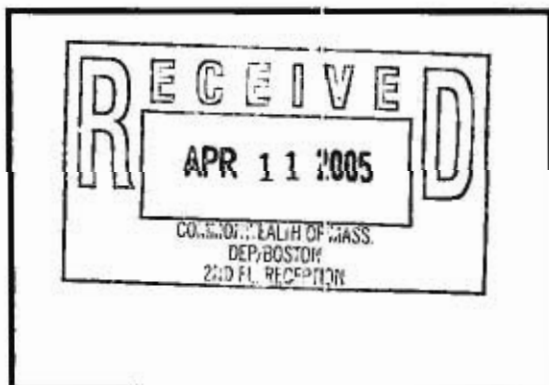
7. Street: \_\_\_\_\_

8. City/Town: \_\_\_\_\_ 9. State: \_\_\_\_\_ 10. ZIP Code: \_\_\_\_\_

11. Telephone: \_\_\_\_\_ 12. Ext.: \_\_\_\_\_ 13. FAX: \_\_\_\_\_

YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO \$10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.

Date Stamp (DEP USE ONLY:)



# HALEY & ALDRICH

7 April 2005  
File No. 06558-711

Massachusetts Department of Environmental Protection  
Northeast Regional Office  
1 Winter Street  
Boston, Massachusetts 02108

Attn: Site Management Branch

Subject: Release Abatement Measure (RAM) Status Report No. 14  
Former Manufactured Gas Plant (MGP) Site  
Parcel B, 129 Commercial Street  
Malden, Massachusetts  
RTN 3-0362  
Tier IB Permit 7378

## OFFICES

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California

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Washington  
District of Columbia

Ladies and Gentlemen:

On behalf of Massachusetts Electric Company (MEC), Haley & Aldrich, Inc. is submitting this Release Abatement Measure (RAM) Status Report No. 14 for the above referenced site. The original BWSC-106 Transmittal form is included with this report and a copy is included in Appendix A of this report. Work on the subject site is being conducted under the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000. This Status Report was prepared in accordance with the guidelines presented in 310 CMR 40.0445.

RAM Status Report No. 14 presents findings during the reporting period 7 October 2004 through 7 April 2005 related to indoor air sampling and on-going operation and maintenance of the sub-slab venting system located at 129 Commercial Street, Malden, Massachusetts.

## BACKGROUND

The subject site is located on Parcel B of the former Malden manufactured gas plant (MGP) site and is currently occupied by a bakery company located at 129 Commercial Street, Malden, Massachusetts. The site is bounded to the north by Charles Street, to the east by Commercial Street, to the south by Adams Street, and to the west by the MBTA Orange Line commuter railway as shown on Figure 1, "Project Locus."

Phase II field investigations associated with the former Malden MGP site identified elevated concentrations of volatile organic compounds (VOCs) and polynuclear aromatic hydrocarbons (PAHs) in soil, and elevated concentrations of VOCs, PAHs and cyanide in groundwater beneath the 129 Commercial Street building. VOCs were also identified in indoor air at the facility. The presence of VOCs in indoor air did not constitute an imminent hazard for the

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workers in the building, and applicable occupational standards set by the Occupational Safety and Health Administration (OSHA) and the National Institute for Occupational Safety and Health (NIOSH) were not exceeded. MEC conducted response actions to reduce VOC concentrations to reduce potential long-term risks.

The original intent of the RAM was to mitigate the VOC migration into indoor air by applying epoxy sealants to selected floor areas inside the bakery building, as described in the 2 July 1998 RAM Plan. The RAM Plan also called for implementation of a second phase of work consisting of conducting a facility wide sealing program at identified migration pathway points if the first phase floor sealing activities were successful in reducing VOC concentrations in the packaging room. As described in RAM Status Report No. 1 dated 22 January 1999, since floor sealing efforts in the packaging room area of the facility to reduce VOC migration into the building were unsuccessful, the second phase was not implemented.

Haley & Aldrich evaluated alternative response actions to mitigate the VOC migration into indoor air, and submitted a RAM Plan modification to the Massachusetts Department of Environmental Protection (DEP) dated 9 April 1999. During normal bakery operations, a negative air pressure is created inside the building, which may enhance soil vapor migration into the building. The RAM modification proposed installation of an active sub-slab venting system in the general area of the packaging room where the highest indoor VOC concentrations had been encountered in the past. The active sub-slab venting system was proposed to create a negative pressure gradient beneath the floor slab such that soil vapors would migrate to the sub-slab venting system rather than penetrating through the floor slab into indoor air and thereby reduce the potential long term health risks. The active sub-slab venting was not proposed to remediate the source of contamination.

RAM Status Report No. 2, dated 21 July 1999, outlined the proposed active sub-slab venting system and summarized correspondence with DEP concerning the 9 April 1999 RAM Plan Modification through the date of the status report as discussed below. DEP issued a "Conditional Approval of Release Abatement Measure; Designation of Interim Deadline; M.G.L. 21E & 310 CMR 40.0000," letter dated 9 June 1999 which approved the RAM Plan modification with conditions. The Interim Deadline condition identified the need to submit a Phase II Report and Phase III Remedial Action Plan for the entire site to DEP within 120 days of receipt of the conditional approval letter. Haley & Aldrich responded to DEP in a letter dated 24 June 1999 which requested clarification of certain conditions, and deletion of an Interim Deadline condition. DEP issued an "Amendment of Conditional Approval of Release Abatement Measure M.G.L Chapter 21E, & 310 CMR 40.0000", dated 27 July 1999 which allowed for either submittal of a Phase II Report & Phase III Remedial Action Plan within 60 days of the date of the letter, or a Tier Classification and Tier I Permit Application within 60 days of obtaining knowledge of the need to reclassify the site pursuant to 310 CMR 40.0530 of the MCP. A Tier Re-Classification/Tier IA Permit Application was submitted to DEP on 20 August 1999, and Tier IB Permit 7378 with an effective date of 28 December 1999 was subsequently issued by DEP.

As part of the DEP 9 June 1999 conditional approval, a new RAM Status submittal deadline was established to be within 120 days of the date of the letter, or by 7 October 1999. RAM Status Report No. 3, dated 7 October 1999, was submitted to DEP, and detailed the design and installation of the sub-slab venting system. The system was initially started on 21 October 1999, operated for four days, shut down for adjustments, and re-started on 16 November 1999. Details of the initial operation and shut down, system adjustments and re-start, as well as the pilot test and long term operation plan were described in RAM Status Report No. 4, dated 7 April 2000. RAM Status Report No. 5, dated 6 October 2000 through RAM Status Report No. 13, dated 7 October 2004 detailed operation and maintenance of the sub-slab venting system and summarized indoor air sampling results and system monitoring data collected during the respective reporting periods. RAM Status Report No. 14 details indoor air sampling activities and on-going operation and maintenance of the sub-slab venting system, and summarizes monitoring data collected from 7 October 2004 through 7 April 2005.

Efforts on this project will continue to be coordinated and carried out by the following:

**Party of Interest**

Massachusetts Electric Company  
25 Research Drive  
Westborough, Massachusetts 01582  
Contact: Michele V. Leone, Senior Environmental Engineer  
Telephone Number (508) 389-4296

**Licensed Site Professional**

Richard P. Standish, LSP  
Licensed Site Professional No. 2242  
Haley & Aldrich, Inc.  
800 Connecticut Boulevard, Suite 100  
East Hartford, Connecticut 06108-7303  
Telephone Number (860) 290-3131

**STATUS OF RESPONSE ACTIONS**

**On-going System Operation**

Haley & Aldrich monitors the sub-slab venting system approximately once per week as part of an ongoing operation and maintenance (O&M) schedule. Total VOC levels in influent and effluent vapor from the off-gas control device (sub-slab venting treatment unit) are measured during these visits with a photoionization detector (PID). Influent and effluent vapor samples are collected and analyzed by Gas Chromatography (GC) on a monthly basis. The results are discussed below.

### **Indoor Air Sampling**

Previously, indoor air sample pairs were collected during production and non-production hours (between September 2000 and July 2001) to evaluate the influence of the facility air handling system on indoor air VOC levels. The air handling system operated at a higher rate during production hours than non-production hours. Test results confirmed higher VOC levels during operating hours than non-operating hours. It is thought that the facility air handling system creates a negative pressure within the building when in operation and promotes the migration of VOCs from the subsurface into the building. Therefore, sampling during production hours is thought to be more protective since the facility air handling system may create a negative pressure within the building, thereby facilitating soil vapor intrusion.

During this reporting period, indoor air samples were collected during production hours only by Haley & Aldrich. The first round of indoor air samples was collected on 26 October 2004 and the second round was collected on 13 January 2005. Samples were collected at the same locations previously tested throughout the facility, except for Site 10. One new location was added (Site 11), as shown on Figure 2. Site 11 is adjacent to and approximate 5 ft. away from the former Site 10, which is no longer accessible due to building renovations. Indoor air test results, both previous and new, are summarized on Table I in units of  $\mu\text{g}/\text{m}^3$ . Laboratory data for this reporting period are located in Appendix B, along with indoor air test results summarized in units of parts per billion by volume (ppbV).

### **NEW SITE INFORMATION**

#### **Treatment System Influent and Effluent Air Testing**

As indicated above, O&M visits have been conducted approximately once per week throughout the reporting period. Influent and effluent readings are currently monitored with an HNU Systems PID equipped with an 11.7 eV lamp. System influent, mid-carbon (Effluent-1) and post-carbon (Effluent-2) VOC levels were below the detection level of the instrument (0.1 ppm). A graphical representation of influent PID measurements, both previous and new, is presented in Figure 3. A more detailed description of monitoring data is discussed later in this report.

As specified by DEP in their 9 June 1999 conditional approval letter, off-gas control device (sub-slab venting system treatment unit) influent and effluent vapor samples have been collected on a monthly basis and submitted for laboratory analysis. Samples are collected from the system influent port prior to treatment and at effluent ports on each drum of granular activated carbon. Samples are quantitatively tested for benzene, toluene, ethylbenzene, m&p xylene, and o-xylene, and styrene (including qualitative naphthalene screening) by GC-FID analysis at the Haley & Aldrich laboratory. Results of chemical analysis of sub-slab venting system vapor samples, both previous and new, are presented on Table II, and a graphical representation of the test results are shown on Figure 4.

VOCs were not detected in the influent, mid-carbon (Effluent-1), or post-carbon (Effluent-2) samples during this reporting period.

### **Indoor Air Sampling and Test Results**

A summary of indoor air quality data, both previous and new, is provided on Table I. Laboratory data for this reporting period is located in Appendix B. As in the past, the recent results are below the applicable occupational standards set by OSHA and NIOSH, and would not constitute an imminent hazard for the workers in the building.

During the 26 October 2004 sampling, low concentrations of VOCs were detected, including m&p-xylenes, and toluene in Sites #2, #4, #5, #6, #7, #8, and #11, and benzene in Site #2 and Site #7. The indoor air test results from 26 October 2004 did not exceed MADEP indoor air background levels for the compounds tested. Analytical data for the laboratory duplicate of Site #7 indicated that styrene was detected at 7.1 ug/m<sup>3</sup>. These data indicate unacceptable laboratory precision for styrene in this laboratory duplicate pair and are not considered to be of suitable data quality for consideration herein. A review of data for Site #7 indicates that the original 26 October 2004 field sample data are consistent with previous site data and considered to be representative of typical field conditions at Site #7, wherein styrene was not detected.

During the 13 January 2005 sampling, low concentrations of VOCs were detected, including benzene, ethylbenzene, m&p-xylenes, o-xylenes, and toluene in Sites #2, #4, #5, #6, #7, #8, and #11, and styrene in Site #8. The indoor air test results from 13 January 2005 did not exceed MADEP indoor air background levels for the compounds tested.

Overall, the indoor air test results are consistent with past sampling events conducted during production hours at the facility.

The next quarterly indoor air sampling round is scheduled for April 2005. Results will be included in the next RAM Status Report due October 2005.

### **REMEDIATION WASTE MANAGEMENT**

No remediation waste was generated or disposed of during this reporting period.

A total of 47 drums, or approximately 7,755 pounds of spent carbon, have been generated and removed from the site since start-up of the sub-slab ventilation system. Also during the reporting period, there was no accumulation of water within the sub-slab venting system.

### **MONITORING DATA FROM OPERATION OF THE REMEDIAL SYSTEM**

Vacuum and pressure, air velocity, PID readings, and vapor temperature are monitored on a regular basis. System data is presented in Table III.



### **Vacuum and Discharge Pressure**

Vacuum conditions are monitored with fixed vacuum gauges on the influent piping prior to the blower and on the knockout drum. A portable gauge is used to periodically measure vacuum at the individual extraction points (EP-1 through EP-5). Vacuum conditions at EP-1, 2, 3 and 4 measured less than 1 inch of water during the reporting period. Vacuum conditions at extraction point EP-4 measured approximately 1 inch of water.

Vacuum at the blower ranged between 5 and 11 inches of water, vacuum at the knockout drum ranged between 3 and 5 inches of water, and discharge pressure ranged between 37 and 42 inches of water during this period.

### **PID Screening and GC Analysis**

VOC levels are screened with an HNu Systems 11.7 eV PID at 3 locations along the vapor stream: Influent (pre-carbon), Effluent-1 (mid-carbon) and Effluent-2 (post-carbon). PID readings of the influent were at background levels (0.0 ppm) as measured throughout the reporting period. A graphical representation of PID readings from system start-up to the present is shown on Figure 3. Effluent PID readings were at background levels throughout the reporting period.

Air samples were collected on a monthly basis in Tedlar bags and analyzed with a Gas Chromatograph (GC). Samples were collected from the influent, mid-carbon (Effluent-1), and post-carbon (Effluent-2) positions. Similar to PID screening, GC analysis shows VOC concentrations in the influent are at or near background levels. VOCs were not detected in the pre-carbon, mid-carbon (Effluent-1), or post-carbon (Effluent-2) samples collected during this reporting period. A graphical representation of GC analytical results of the influent from system start-up to the present is shown on Figure 4.

### **Influent / Effluent Air Velocity and VOC Removal**

Air flow in and out of the system is measured with a Dwyer 401T Air Velocity Meter. During this reporting period, the influent flow rate ranged from 350 fpm (31 cfm) to 500 fpm (44 cfm) and the effluent flow rate ranged from 1200 fpm (105 cfm) to 1250 fpm (109 cfm). Based on flow rates and monthly GC analysis of air samples, it is estimated that nearly 900 lbs of VOCs have been removed from beneath the building since commencement of sub-slab ventilation in November 1999.

### **FUTURE RESPONSE ACTIONS**

Future response actions that will be associated with ongoing system O&M activities include indoor air sampling at 3 month intervals, monthly screening of system influent and effluent vapor samples, and replacement of activated carbon if necessary. The next quarterly indoor air sampling round is scheduled for April 2005. Results will be included in the next RAM Status Report due 7 October 2005.




Indoor air testing suggests the sub-slab venting system was effective during this reporting period and performance may have improved from previous reporting periods, when the system was primarily effective only when the facility was in non-production mode.

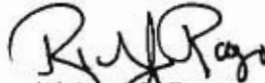
System enhancements and alternative response actions were evaluated as part of the Phase III Remedial Action Plan to develop a long-term plan to address indoor air quality at the facility. The Phase III was submitted to DEP in June 2003 and a Remedial Action Alternative (RAA) was recommended. At this time, the proposed RAA may include an air sparging and/or SVE system installed via Horizontal Directional Drilling (HDD).


A partial Class C RAO was submitted for the former Malden MGP site in February 2004. It is anticipated that the installation of the RAA system will be conducted as part of the Post-RAO response actions conducted at 129 Commercial Street, and implemented via a modification to the RTN 3-0362/RTN 3-3757 RAM for 129 Commercial Street.

Please do not hesitate to call the undersigned or Michele Leone of MEC at 508-389-4296 if you have any questions or comments.

Sincerely yours,  
HALEY & ALDRICH, INC.

  
Todd R. Butler  
Engineer

  
Richard J. Rago  
Senior Scientist

  
Richard P. Standish, LSP-of-Record  
Senior Vice President

Enclosures:

Table I	Summary of Indoor Air Quality Data
Table II	Chemical Analysis of Sub-Slab Venting System Vapor Samples
Table III	Sub-Slab Venting System Monitoring Data
Figure 1	Project Locus
Figure 2	Extraction Well Point and Indoor Air Sample Locations
Figure 3	PID Measurements of Sub-Slab Vapor Influent
Figure 4	GC Analysis of Sub-Slab Vapor Influent
Appendix A	Copy of Form BWSC-106
Appendix B	Indoor Air Quality Analytical Data

c: Massachusetts Electric Company; Attn: Michele V. Leone  
Massachusetts Electric Company; Attn: Michael Lotti  
KeySpan Energy Delivery of New England; Attn: Patricia A. Haederle  
KeySpan Energy Delivery of New England; Attn: Richard J. Schmitz

**HALEY &  
ALDRICH**

TABLE I

**SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Sample Results (Results listed in ug/m <sup>3</sup> )												
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11	
13-Jan-05	Benzene	21	--	--	3.8	--	2.6	2.8	2.8	2.8	2.8	3.5	--	--	3.4
	Ethylbenzene	9.62	--	--	2.8	--	2.7	3.5	1.5	2.3	2.3	2.4	--	--	2.6
	m-&p-xylenes	40	--	--	8.2	--	8	11	3.6	6	6	6.4	--	--	6.9
	Naphthalene	5	--	--	ND(1.4)	--	ND(1.3)	ND(1.5)	ND(1.2)	ND(1.2)	ND(1.2)	ND(1.4)	--	--	ND(1.8)
	o-xylenes	10	--	--	2.8	--	2.2	2.6	1.3	1.7	1.7	2.1	--	--	2.1
	Styrene	2.79	--	--	ND(1.4)	--	ND(1.3)	ND(1.5)	ND(1.2)	ND(1.2)	ND(1.2)	1.5	--	--	ND(1.8)
	Toluene	28.65	--	--	18	--	16	16	15	10	12	12	--	--	13
26-Oct-04	Benzene	21	--	--	2.2	--	ND(1.7)	ND(1.5)	ND(1.8)	1.7	ND(1.5)	--	--	--	1.9
	Ethylbenzene	9.62	--	--	ND(1.4)	--	ND(1.7)	ND(1.5)	ND(1.8)	ND(1.6)	ND(1.5)	--	--	--	ND(1.6)
	m-&p-xylenes	40	--	--	3.6	--	3.2	4.4	3.1	4	2.9	--	--	--	3.5
	Naphthalene	5	--	--	ND(1.4)	--	ND(1.7)	ND(1.5)	ND(1.8)	ND(1.6)	ND(1.5)	--	--	--	ND(1.6)
	o-xylenes	10	--	--	ND(1.4)	--	ND(1.7)	ND(1.5)	ND(1.8)	ND(1.6)	ND(1.5)	--	--	--	ND(1.6)
	Styrene	2.79	--	--	ND(1.4)	--	ND(1.7)	ND(1.5)	ND(1.8)	ND(1.6)	ND(1.5)	--	--	--	ND(1.6)
	Toluene	28.65	--	--	6.8	--	6.7	9	13	6.9	5.1	--	--	--	6.6
06-Aug-04	Benzene	21	--	--	ND(1.8)	--	ND(3.5)	ND(3.4)	ND(3.3)	ND(3.4)	ND(3.5)	--	ND(3.5)	--	--
	Ethylbenzene	9.62	--	--	ND(1.8)	--	ND(3.5)	ND(3.4)	ND(3.3)	ND(3.4)	ND(3.5)	--	ND(3.5)	--	--
	m-&p-xylenes	40	--	--	2.9	--	3.5	ND(3.4)	ND(3.3)	ND(3.4)	ND(3.5)	--	ND(3.5)	--	--
	Naphthalene	5	--	--	ND(1.8)	--	ND(3.5)	ND(3.4)	ND(3.3)	ND(3.4)	ND(3.5)	--	ND(3.5)	--	--
	o-xylenes	10	--	--	ND(1.8)	--	ND(3.5)	ND(3.4)	ND(3.3)	ND(3.4)	ND(3.5)	--	ND(3.5)	--	--
	Styrene	2.79	--	--	ND(1.8)	--	ND(3.5)	ND(3.4)	ND(3.3)	ND(3.4)	ND(3.5)	--	ND(3.5)	--	--
	Toluene	28.65	--	--	5.1	--	9	7.5	ND(3.3)	ND(3.4)	3.6	--	ND(3.5)	--	--

TABLE I

SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

SAMPLE	ANALYTE	MADEP Indoor Air Background	Site 1	Site 1A	Site 2	Site 3	Sample Results (Results listed in ug/m <sup>3</sup> )									
							Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11		
06-May-04	Benzene	21	--	--	ND(1.5)	--	ND(1.9)	1.7	ND(1.9)	ND(1.8)	ND(2.1)	--	ND(1.9)	--		
	Ethylbenzene	9.62	--	--	ND(1.5)	--	ND(1.9)	1.7	ND(1.9)	2	ND(2.1)	--	ND(1.9)	--		
	m-&p-xylenes	40	--	--	2.9	--	3.5	4.2	4	7.6	5.4	--	6.4	--		
	Naphthalene	5	--	--	ND(1.5)	--	ND(1.9)	ND(1.6)	ND(1.9)	ND(1.8)	ND(2.1)	--	ND(1.9)	--		
	o-xylenes	10	--	--	ND(1.5)	--	ND(1.9)	1.6	ND(1.9)	3	2.2	--	2.6	--		
	Styrene	2.79	--	--	ND(1.5)	--	ND(1.9)	ND(1.6)	ND(1.9)	ND(1.8)	ND(2.1)	--	2.8	--		
	Toluene	28.65	--	--	85	--	33	72	18	13	8.7	--	11	--		
12-Feb-04	Benzene	21	--	--	20.8	--	ND(1.7)	ND(1.7)	ND(8.6)	ND(12.8)	ND(18.5)	--	ND(20.1)	--		
	Ethylbenzene	9.62	--	--	16.9	--	ND(1.6)	ND(1.7)	ND(8.7)	ND(13)	ND(18.7)	--	ND(20)	--		
	m-&p-xylenes	40	--	--	52.1	--	2	3	ND(8.7)	ND(13)	ND(18.7)	--	ND(20)	--		
	Naphthalene	5	--	--	2	--	ND(1.7)	ND(1.7)	ND(8.9)	ND(13.1)	ND(18.3)	--	ND(19.9)	--		
	o-xylenes	10	--	--	18.7	--	ND(1.6)	ND(1.7)	ND(8.7)	ND(13)	ND(18.7)	--	ND(20)	--		
	Styrene	2.79	--	--	2.1	--	ND(1.7)	ND(1.7)	ND(8.5)	ND(12.8)	ND(18.7)	--	ND(20)	--		
	Toluene	28.65	--	--	71.6	--	4.5	5.3	56.5	ND(12.8)	ND(18.5)	--	ND(20)	--		
30-Oct-03	Benzene	21	--	--	1.9	--	ND(1.7)	ND(1.5)	--	ND(1.8)	ND(3.5)	--	ND(3.8)	--		
	Ethylbenzene	9.62	--	--	ND(1.6)	--	ND(1.7)	2.4	--	ND(1.9)	ND(3.5)	--	ND(3.7)	--		
	m-&p-xylenes	40	--	--	3	--	5.2	7.8	--	5.2	ND(3.5)	--	ND(3.7)	--		
	Naphthalene	5	--	--	ND(1.6)	--	ND(1.7)	ND(1.5)	--	ND(1.8)	ND(3.5)	--	ND(3.7)	--		
	o-xylenes	10	--	--	ND(1.6)	--	ND(1.7)	ND(1.5)	--	ND(1.8)	ND(3.5)	--	7.4	--		
	Styrene	2.79	--	--	ND(1.6)	--	ND(1.7)	ND(1.5)	--	ND(1.9)	ND(3.4)	--	ND(3.7)	--		
	Toluene	28.65	--	--	6	--	27.1	23	--	23	13.2	--	10.2	--		

**TABLE I**  
**SUMMARY OF INDOOR AIR QUALITY DATA**  
**129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE**  
**MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
23-Jul-03	Benzene	21	ND(1.9)	--	--	--	ND(1.8)	ND(1.6)	ND(3.5)	ND(3.8)	ND(2.5)	--	ND(3.8)	--
	Ethylbenzene	9.62	ND(1.9)	--	--	--	ND(1.8)	ND(1.6)	ND(3.6)	ND(3.9)	ND(2.5)	--	ND(3.8)	--
	m-&p-xylenes	40	ND(1.9)	--	--	--	2.3	2.6	ND(3.6)	ND(3.9)	2.5	--	5.6	--
	Naphthalene	5	ND(1.8)	--	--	--	ND(1.8)	ND(1.6)	ND(3.6)	ND(4)	ND(2.5)	--	ND(3.8)	--
	o-xylenes	10	ND(1.9)	--	--	--	ND(1.8)	ND(1.6)	ND(3.6)	ND(3.9)	ND(2.5)	--	ND(3.8)	--
	Styrene	2.79	ND(1.9)	--	--	--	ND(1.8)	ND(1.7)	ND(3.6)	ND(4)	ND(2.5)	--	28.5	--
	Toluene	28.65	23.7	--	--	--	52.7	64	56.5	27.9	35.8	--	35.4	--
25-Apr-03	Benzene	21	--	--	ND(1.9)	--	ND(1.8)	ND(4.2)	ND(95.8)	ND(38.3)	ND(38.3)	--	ND(108.6)	--
	Ethylbenzene	9.62	--	--	ND(1.9)	--	ND(1.8)	ND(4)	ND(95.5)	ND(39.1)	ND(39.5)	--	ND(108.5)	--
	m-&p-xylenes	40	--	--	ND(1.9)	--	ND(1.8)	ND(4)	ND(95.5)	ND(39.1)	ND(39.5)	--	ND(108.5)	--
	Naphthalene	5	--	--	ND(1.9)	--	ND(1.8)	ND(4)	ND(94.3)	ND(39.3)	ND(39.8)	--	ND(104.8)	--
	o-xylenes	10	--	--	ND(1.9)	--	ND(1.8)	ND(4)	ND(95.5)	ND(39.1)	ND(39.5)	--	ND(108.5)	--
	Styrene	2.79	--	--	ND(1.9)	--	ND(1.8)	ND(4)	ND(93.7)	ND(39.2)	ND(39.6)	--	ND(106.4)	--
	Toluene	28.65	--	--	4.1	--	23.7	41.4	ND(94.2)	ND(37.7)	ND(41.4)	--	ND(105.5)	--
24-Jan-03	Benzene	21	--	--	1.9	--	ND(1.5)	ND(1.3)	ND(1.6)	ND(2.2)	ND(1.8)	--	ND(1.8)	--
	Ethylbenzene	9.62	--	--	ND(1.5)	--	ND(1.5)	ND(1.3)	ND(1.6)	ND(2.2)	ND(1.8)	--	ND(1.7)	--
	m-&p-xylenes	40	--	--	2.5	--	ND(1.5)	1.6	2.3	ND(2.2)	ND(1.8)	--	2.5	--
	Naphthalene	5	--	--	ND(1.5)	--	ND(1.5)	ND(1.3)	ND(1.6)	ND(2.2)	ND(1.8)	--	ND(1.7)	--
	o-xylenes	10	--	--	1.5	--	ND(1.5)	ND(1.3)	ND(1.6)	ND(2.2)	ND(1.8)	--	ND(3.9)	--
	Styrene	2.79	--	--	ND(1.5)	--	ND(1.5)	ND(1.3)	ND(1.6)	ND(2.2)	ND(1.8)	--	4.3	--
	Toluene	28.65	--	--	4.1	--	2.4	2.9	2.4	2.3	ND(1.8)	--	2	--

TABLE I

SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

SAMPLE	ANALYTE	MADEP Indoor Air Background	Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
08-Oct-02	Benzene	21	--	--	ND(2.3)	--	ND(1.2)	--	ND(2.1)	ND(2)	ND(2)	--	1.9	--
	Ethylbenzene	9.62	--	--	ND(2.3)	--	ND(1.2)	--	ND(2.1)	ND(2)	ND(2)	--	3.6	--
	m-&p-xylenes	40	--	--	1.6	--	2.6	--	2.1	ND(2)	ND(2)	--	6.1	--
	Naphthalene	5	--	--	ND(2.3)	--	ND(1.2)	--	ND(2.1)	ND(2)	ND(2)	--	ND(1.7)	--
	o-xylenes	10	--	--	ND(2.3)	--	ND(1.2)	--	ND(2.1)	ND(2)	ND(2)	--	2.5	--
	Styrene	2.79	--	--	ND(2.3)	--	ND(1.1)	--	ND(2.1)	ND(2)	ND(2)	--	23.4	--
	Toluene	28.65	--	--	4.5	--	24.5	--	45.2	8.7	6.8	--	9.4	--
25-Jun-02	Benzene	21	--	--	--	--	1.4	ND(1)	6.1	5.7	3.1	--	5.4	--
	Ethylbenzene	9.62	--	--	--	--	3.1	2.5	ND(1)	ND(1)	ND(2)	--	3.1	--
	m-&p-xylenes	40	--	--	--	--	8.7	6.5	2.6	3	3	--	5.6	--
	Naphthalene	5	--	--	--	--	ND(1)	ND(1)	ND(1)	ND(1)	ND(2)	--	ND(1)	--
	o-xylenes	10	--	--	--	--	2.2	ND(1)	ND(1)	ND(1)	ND(2)	--	2.2	--
	Styrene	2.79	--	--	--	--	ND(1)	ND(1)	ND(1)	ND(1)	ND(2)	--	20	--
	Toluene	28.65	--	--	--	--	34.7	49	41.4	18.8	8.7	--	8.3	--
10-Apr-02	Benzene	21	--	--	ND(1)	--	ND(1)	ND(1)	ND(20.1)	4.5	ND(20.1)	--	ND(20.1)	--
	Ethylbenzene	9.62	--	--	ND(1)	--	ND(1)	1.3	ND(20)	ND(2)	ND(20)	--	ND(20)	--
	m-&p-xylenes	40	--	--	2.3	--	2.4	4.3	ND(20)	ND(2)	ND(20)	--	ND(20)	--
	Naphthalene	5	--	--	ND(1)	--	ND(1)	ND(1)	ND(19.9)	ND(2)	ND(19.9)	--	ND(19.9)	--
	o-xylenes	10	--	--	ND(1)	--	ND(1)	ND(1)	ND(20)	ND(2)	ND(20)	--	ND(20)	--
	Styrene	2.79	--	--	ND(1)	--	ND(1)	ND(1)	ND(20)	ND(2)	ND(20)	--	ND(20)	--
	Toluene	28.65	--	--	4.1	--	19.2	14.3	ND(20)	11.3	ND(20)	--	ND(20)	--



TABLE I

**SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Sample Results (Results listed in ug/m <sup>3</sup> )											
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
10-Jan-02	Benzene	21	--	--	--	--	ND(1)	ND(2)	38.3	44.7	47.9	--	31.9	--
	Ethylbenzene	9.62	--	--	--	--	ND(1)	ND(2)	ND(4)	ND(4)	ND(7.8)	--	ND(7.8)	--
	m-&p-xylenes	40	--	--	--	--	4.3	4.8	ND(4)	ND(4)	ND(7.8)	--	ND(7.8)	--
	Naphthalene	5	--	--	--	--	ND(1)	ND(2)	ND(4)	ND(4)	ND(7.9)	--	ND(7.9)	--
	o-xylenes	10	--	--	--	--	ND(1)	ND(2)	ND(4)	ND(4)	ND(7.8)	--	ND(7.8)	--
	Styrene	2.79	--	--	--	--	ND(1)	ND(2)	ND(4)	ND(4)	ND(8.1)	--	8.9	--
	Toluene	28.65	--	--	--	--	19.6	19.2	37.7	13.2	10.5	--	10.9	--
11-Oct-01	Benzene	21	ND(1)	--	--	--	ND(1)	ND(2)	10.9	11.5	12.5	--	7.7	--
	Ethylbenzene	9.62	ND(1)	--	--	--	1.9	ND(2)	ND(1)	ND(1)	ND(2)	--	3.2	--
	m-&p-xylenes	40	ND(1)	--	--	--	5.6	3.5	2.8	2.5	3	--	5.2	--
	Naphthalene	5	ND(1)	--	--	--	ND(1)	ND(2)	ND(1)	ND(1)	ND(2)	--	ND(1)	--
	o-xylenes	10	ND(1)	--	--	--	2	ND(2)	ND(1)	ND(1)	ND(2)	--	2.2	--
	Styrene	2.79	ND(1)	--	--	--	ND(1)	ND(2)	ND(1)	ND(1)	ND(2)	--	15.8	--
	Toluene	28.65	4.1	--	--	--	20.7	17.3	31.3	10.9	7.9	--	8.3	--
01-Jul-01	Benzene	21	--	--	ND(2)	--	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	--	--	--
	Ethylbenzene	9.62	--	--	ND(2)	--	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	--	--	--
	m-&p-xylenes	40	--	--	ND(2)	--	ND(2)	ND(2)	2	2.2	ND(2)	--	--	--
	Naphthalene	5	--	--	ND(2)	--	ND(2)	ND(2)	ND(2)	1.7	ND(2)	--	--	--
	o-xylenes	10	--	--	ND(2)	--	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	--	--	--
	Styrene	2.79	--	--	ND(2)	--	ND(2)	ND(2)	6.4	2.8	3.5	--	--	--
	Toluene	28.65	--	--	4.5	--	6.4	109.2	8.3	9.4	9.4	--	--	--

**TABLE I**  
**SUMMARY OF INDOOR AIR QUALITY DATA**  
**129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE**  
**MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Site 1	Site 1A	Site 2	Site 3	Sample Results (Results listed in ug/m <sup>3</sup> )										Site 8	Site 9	Site 10	Site 11
29-Jun-01	Benzene	21	--	--	ND(1)	--	2.2	6.7	31.6	35.1	35.1	--	30.7	--	--	--	--	--	--	--
	Ethylbenzene	9.62	--	--	ND(1)	--	6.5	3.7	ND(1)	ND(1)	ND(1)	--	10.9	--	--	--	--	--	--	--
	m-&p-xylenes	40	--	--	3.4	--	23	12.2	3.3	4.3	3.3	--	13.5	--	--	--	--	--	--	--
	Naphthalene	5	--	--	ND(1)	--	5.8	ND(1)	ND(1)	2.5	3.4	--	41.9	--	--	--	--	--	--	--
	o-xylenes	10	--	--	ND(1)	--	6.9	3.7	ND(1)	ND(1)	ND(1)	--	6.1	--	--	--	--	--	--	--
	Styrene	2.79	--	--	ND(1)	--	ND(1)	ND(1)	2.7	ND(1)	1.7	--	25.5	--	--	--	--	--	--	--
	Toluene	28.65	--	--	7.2	--	16.6	67.8	52.7	20.7	9.4	--	16.6	--	--	--	--	--	--	--
18-Mar-01	Benzene	21	--	--	ND(1)	--	ND(1)	ND(1)	ND(2)	ND(2)	ND(1)	--	16.3	--	--	--	--	--	--	--
	Ethylbenzene	9.62	--	--	ND(1)	--	ND(1)	ND(1)	ND(1)	ND(2)	ND(1)	--	5.2	--	--	--	--	--	--	--
	m-&p-xylenes	40	--	--	ND(1)	--	ND(1)	ND(1)	3.1	3.2	4.1	--	13	--	--	--	--	--	--	--
	Naphthalene	5	--	--	ND(1)	--	ND(1)	ND(1)	ND(2.5)	ND(2)	ND(1)	--	ND(1)	--	--	--	--	--	--	--
	o-xylenes	10	--	--	ND(1)	--	ND(1)	ND(1)	ND(2)	ND(2)	ND(1)	--	4.8	--	--	--	--	--	--	--
	Styrene	2.79	--	--	ND(1)	--	ND(1)	ND(1)	ND(2)	ND(2)	ND(1)	--	14.5	--	--	--	--	--	--	--
	Toluene	28.65	--	--	ND(1)	--	4.1	4.5	15.4	25.6	64	--	35.8	--	--	--	--	--	--	--
16-Mar-01	Benzene	21	--	--	4.2	--	63.9	ND(1)	24.3	29.7	41.5	--	26.2	--	--	--	--	--	--	--
	Ethylbenzene	9.62	--	--	9.1	--	269.1	2.8	ND(1)	1.7	1.6	--	4.2	--	--	--	--	--	--	--
	m-&p-xylenes	40	--	--	15.6	--	208.3	10	5.2	5.2	5.6	--	10.9	--	--	--	--	--	--	--
	Naphthalene	5	--	--	23.1	--	256.8	ND(1)	ND(1)	3.1	2.7	--	ND(1)	--	--	--	--	--	--	--
	o-xylenes	10	--	--	7.8	--	86.8	2.4	2.3	ND(1)	2.7	--	6.9	--	--	--	--	--	--	--
	Styrene	2.79	--	--	1.7	--	37	ND(1)	ND(1)	ND(1)	1.3	--	12.8	--	--	--	--	--	--	--
	Toluene	28.65	--	--	24.5	--	226	21.5	64	23.4	97.9	--	34.3	--	--	--	--	--	--	--

TABLE I

SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

SAMPLE	ANALYTE	MADEP Indoor Air Background	Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
03-Dec-00	Benzene	21	--	--	2.4	--	1.3	TR(1.3)	2.5	2.2	TR(1.9)	--	11	--
	Ethylbenzene	9.62	--	--	1.1	--	ND(1)	ND(2)	ND(1)	ND(2)	ND(2)	--	3.9	--
	m-&p-xylenes	40	--	--	3.2	--	1.5	TR(1.8)	2.3	2	2.1	--	6.6	--
	Naphthalene	5	--	--	ND(1)	--	ND(1)	ND(2)	1.2	ND(2)	ND(2)	--	TR(1.6)	--
	o-xylenes	10	--	--	1.3	--	ND(1)	ND(2)	ND(1)	ND(2)	ND(2)	--	2.7	--
	Styrene	2.79	--	--	ND(1)	--	ND(1)	ND(2)	ND(1)	ND(2)	ND(2)	--	30	--
	Toluene	28.65	--	--	6.3	--	5	5.6	5.2	5.7	5.3	--	6.4	--
01-Dec-00	Benzene	21	--	--	3.2	--	1.6	1.9	13	16	14	--	23	--
	Ethylbenzene	9.62	--	--	1.7	--	ND(1)	TR(0.99)	TR(1.5)	TR(1.4)	ND(1)	--	3.8	--
	m-&p-xylenes	40	--	--	5.2	--	2.3	2.9	3.9	3.9	2.3	--	7.3	--
	Naphthalene	5	--	--	ND(1)	--	ND(1)	ND(1)	TR(1.3)	2.5	ND(1)	--	2.1	--
	o-xylenes	10	--	--	1.9	--	ND(1)	1	TR(1.2)	TR(1.2)	ND(1)	--	2.8	--
	Styrene	2.79	--	--	ND(1)	--	ND(1)	ND(1)	TR(1.5)	TR(1.2)	ND(1)	--	25	--
	Toluene	28.65	--	--	13	--	22	14	16	12	21	--	9.6	--
22-Oct-00	Benzene	21	--	--	1.4	--	--	--	1.7	--	--	--	--	--
	Ethylbenzene	9.62	--	--	ND(1)	--	--	--	1.4	--	--	--	--	--
	m-&p-xylenes	40	--	--	2.5	--	--	--	5.2	--	--	--	--	--
	Naphthalene	5	--	--	ND(1)	--	--	--	2	--	--	--	--	--
	o-xylenes	10	--	--	TR(0.9)	--	--	--	1.9	--	--	--	--	--
	Styrene	2.79	--	--	ND(1)	--	--	--	3.3	--	--	--	--	--
	Toluene	28.65	--	--	3.7	--	--	--	7.4	--	--	--	--	--

TABLE I  
SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

SAMPLE	ANALYTE	MADEP Indoor Air Background	Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
20-Oct-00	Benzene	21	--	--	2.8	--	--	--	4.5	--	--	--	--	--
	Ethylbenzene	9.62	--	--	1.3	--	--	--	2	--	--	--	--	--
	m-&p-xylenes	40	--	--	4.3	--	--	--	6.1	--	--	--	--	--
	Naphthalene	5	--	--	ND(1)	--	--	--	11.1	--	--	--	--	--
	o-xylenes	10	--	--	1.6	--	--	--	2.2	--	--	--	--	--
	Styrene	2.79	--	--	ND(1)	--	--	--	2.3	--	--	--	--	--
	Toluene	28.65	--	--	7	--	--	--	22.6	--	--	--	--	--
01-Oct-00	Benzene	21	--	--	1.2	--	--	--	1.6	--	--	--	--	--
	Ethylbenzene	9.62	--	--	ND(1)	--	--	--	1.1	--	--	--	--	--
	m-&p-xylenes	40	--	--	1.9	--	--	--	3.2	--	--	--	--	--
	Naphthalene	5	--	--	ND(1)	--	--	--	ND(1)	--	--	--	--	--
	o-xylenes	10	--	--	ND(1)	--	--	--	1.1	--	--	--	--	--
	Styrene	2.79	--	--	ND(1)	--	--	--	1.8	--	--	--	--	--
	Toluene	28.65	--	--	6.7	--	--	--	11.9	--	--	--	--	--
29-Sep-00	Benzene	21	--	--	1.7	--	--	--	24.8	--	--	--	--	--
	Ethylbenzene	9.62	--	--	ND(1)	--	--	--	2.3	--	--	--	--	--
	m-&p-xylenes	40	--	--	2.4	--	--	--	6.5	--	--	--	--	--
	Naphthalene	5	--	--	ND(1)	--	--	--	1.6	--	--	--	--	--
	o-xylenes	10	--	--	ND(1)	--	--	--	1.9	--	--	--	--	--
	Styrene	2.79	--	--	ND(1)	--	--	--	1.7	--	--	--	--	--
	Toluene	28.65	--	--	8.1	--	--	--	17.4	--	--	--	--	--

TABLE I

SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

SAMPLE	ANALYTE	MADEP Indoor Air Background	Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
Sample Results (Results listed in ug/m <sup>3</sup> )														
19-Jul-00	Benzene	21	--	--	3.2	--	2.4	6.1	87.1	93.5	31.6	--	64.5	--
	Ethylbenzene	9.62	--	--	2	--	TR(1.5)	TR(1.3)	TR(1.8)	TR(1.4)	TR(1.2)	--	9.1	--
	m-&p-xylenes	40	--	--	6.5	--	3.7	2.8	4.3	3.3	3.2	--	16.5	--
	Naphthalene	5	--	--	ND(1)	--	ND(1)	ND(1)	3.1	4	TR(1.7)	--	TR(1.4)	--
	o-xylenes	10	--	--	2.5	--	TR(1.4)	TR(1.2)	TR(1.7)	TR(1.3)	TR(1.3)	--	6.5	--
	Styrene	2.79	--	--	ND(1)	--	TR(1.1)	TR(1.4)	6.1	4.1	4.3	--	78.3	--
	Toluene	28.65	--	--	17.8	--	36.3	35.9	35.9	23.3	22.2	--	33.7	--
06-Apr-00	Benzene	21	--	--	2.3	--	TR(1.8)	ND(1)	45.2	32.3	83.9	--	45.2	--
	Ethylbenzene	9.62	--	--	ND(1)	--	16.5	208.7	ND(1)	73.9	17	--	ND(1)	--
	m-&p-xylenes	40	--	--	2.9	--	56.5	739.1	11.7	265.2	60.9	--	10	--
	Naphthalene	5	--	--	ND(1)	--	ND(1)	ND(1)	ND(1)	ND(1)	TR(2.5)	--	ND(1)	--
	o-xylenes	10	--	--	TR(1)	--	9.6	134.8	ND(1)	47.8	10.4	--	TR(4.2)	--
	Styrene	2.79	--	--	ND(1)	--	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	--	9.6	--
	Toluene	28.65	--	--	8.5	--	159.3	2000	125.9	629.6	240.7	--	21.9	--
22-Feb-00	Benzene	21	--	--	2.5	--	2.1	--	58.1	32.3	83.9	--	71	--
	Ethylbenzene	9.62	--	--	1.2	--	1.1	--	2.8	1.7	2.7	--	10	--
	m-&p-xylenes	40	--	--	4	--	3.1	--	8.7	5.2	9.6	--	18.3	--
	Naphthalene	5	--	--	ND(1)	--	ND(1)	--	ND(1)	ND(1)	2.1	--	ND(1)	--
	o-xylenes	10	--	--	1.3	--	1	--	2.9	1.7	2.9	--	6.5	--
	Styrene	2.79	--	--	ND(1)	--	ND(1)	--	1.8	ND(1)	1.8	--	39.1	--
	Toluene	28.65	--	--	8.5	--	9.3	--	32.2	13	16.7	--	23	--



TABLE I  
SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

SAMPLE	ANALYTE	MADEP Indoor Air Background	Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
29-Nov-99	Benzene	21	--	--	3.5	--	1.2	1.8	11.6	11.6	18.1	--	9.7	--
	Ethylbenzene	9.62	--	--	1	--	1.1	1.5	1.2	0.8	TR(0.7)	--	3.8	--
	m-&p-xylenes	40	--	--	3.1	--	3.9	5.2	3	2.3	2.3	--	7	--
	Naphthalene	5	--	--	ND(2.1)	--	ND(2.1)	ND(2.1)	ND(2.1)	ND(2.1)	ND(2.1)	--	ND(2.1)	--
	o-xylenes	10	--	--	TR(1)	--	1.1	1.5	1	0.7	TR(0.7)	--	2.8	--
	Styrene	2.79	--	--	ND(2.2)	--	ND(2.2)	ND(2.2)	1.4	ND(2.2)	1	--	29.6	--
	Toluene	28.65	--	--	7.4	--	9.3	16.7	20.4	8.5	7.8	--	9.3	--
30-Sep-99	Benzene	21	0.9	--	2.1	1.4	TR(1.5)	2.3	61.3	32.3	21.6	--	--	--
	Ethylbenzene	9.62	ND(2.2)	--	1.2	TR(0.9)	TR(1.1)	1.6	17	7.4	4.8	--	--	--
	m-&p-xylenes	40	2	--	3.7	2.8	3.2	3.1	43.5	20.9	13.9	--	--	--
	Naphthalene	5	TR(0.9)	--	1	TR(0.8)	TR(1.6)	1.1	2.2	2.6	2.1	--	--	--
	o-xylenes	10	TR(1)	--	1.7	1.2	TR(1.5)	1.3	12.2	6.5	4.2	--	--	--
	Styrene	2.79	ND(2.2)	--	ND(2.2)	ND(2.2)	ND(2.2)	ND(2.2)	3.3	1.7	165.2	--	--	--
	Toluene	28.65	5.2	--	7	7.8	10.7	9.3	63	18.1	15.9	--	--	--
18-Dec-98	Benzene	21	--	--	--	--	--	--	74.2	22.6	--	--	--	--
	Ethylbenzene	9.62	--	--	--	--	--	--	12.2	7.4	--	--	--	--
	m-&p-xylenes	40	--	--	--	--	--	--	28.7	28.7	--	--	--	--
	Naphthalene	5	--	--	--	--	--	--	ND(1)	2.4	--	--	--	--
	o-xylenes	10	--	--	--	--	--	--	9.6	13	--	--	--	--
	Styrene	2.79	--	--	--	--	--	--	1.3	ND(2)	--	--	--	--
	Toluene	28.65	--	--	--	--	--	--	16.7	13	--	--	--	--

TABLE I

SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

SAMPLE	ANALYTE	MADEP Indoor Air Background	Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
22-Dec-97	Benzene	21	--	--	6.8	--	--	--	58.1	19.7	--	--	--	--
	Ethylbenzene	9.62	--	--	3	--	--	--	5.2	8.7	--	--	--	--
	m-&p-xylenes	40	--	--	10.4	--	--	--	5.7	26.1	--	--	--	--
	Naphthalene	5	--	--	ND(2.1)	--	--	--	ND(2.1)	TR(1.1)	--	--	--	--
	o-xylenes	10	--	--	3.9	--	--	--	1.7	8.7	--	--	--	--
	Styrene	2.79	--	--	ND(2.2)	--	--	--	1.3	3.5	--	--	--	--
	Toluene	28.65	--	--	18.1	--	--	--	9.6	81.5	--	--	--	--
19-Nov-97	Benzene	21	2.9	--	6.1	3.5	2.6	6.1	196.8	41.9	24.2	--	--	--
	Ethylbenzene	9.62	ND(0.9)	--	3.9	1.3	1.7	4.8	11.7	4.3	3	--	--	--
	m-&p-xylenes	40	2.6	--	13.5	4.8	4.3	6.5	12.2	8.7	6.5	--	--	--
	Naphthalene	5	ND(1.1)	--	ND(1.1)	ND(1.1)	ND(1.1)	ND(1.1)	ND(1.1)	ND(1.1)	ND(1.1)	--	--	--
	o-xylenes	10	0.9	--	5.2	1.7	1.7	2.6	3.5	2.6	2.2	--	--	--
	Styrene	2.79	ND(0.9)	--	ND(0.9)	ND(0.9)	ND(0.9)	ND(0.9)	1.7	ND(0.9)	2.2	--	--	--
	Toluene	28.65	9.3	--	24.1	12.6	11.1	15.2	19.3	24.4	13.3	--	--	--
18-Jun-94	Benzene	21	--	3.2	--	--	--	5.8	--	3.5	3.5	2.3	--	--
	Ethylbenzene	9.62	--	1.7	--	--	--	4.8	--	61.7	90	69.1	--	--
	m-&p-xylenes	40	--	4.3	--	--	--	10.9	--	149.1	210	162.2	--	--
	Naphthalene	5	--	1.1	--	--	--	2.1	--	1.1	1.1	1.1	--	--
	o-xylenes	10	--	1.3	--	--	--	3.5	--	32.2	45.7	34.3	--	--
	Styrene	2.79	--	TR(0.11)	--	--	--	1.3	--	3.5	3.5	3	--	--
	Toluene	28.65	--	13.3	--	--	--	44.1	--	29.6	20	20	--	--

TABLE I

**SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Sample Results (Results listed in ug/m <sup>3</sup> )										
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10

## NOTES AND ABBREVIATIONS:

1. VOCs (volatile organic compound) were analyzed by EPA Method TO14. Results are provided in ug/m<sup>3</sup>, unless otherwise noted.
2. OSHA PEL: Permissible Exposure Limits for air contaminants in Title 29 CFR Part 1910.1000, Department of Labor, Occupational Safety Health Administration, 1989 and 1993 final ruling. Based on the lowest of the 8-hour average, 15-minute readings, or instantaneous readings.
3. ACGIH TLV: Threshold Limit Values recommended by the ACGIH. Based on the lowest of the 8-hour average, 15-minute readings, or instantaneous readings.
4. MICH REL: 1994 Recommended Exposure Limits from the National Institute of Occupational Safety and Health. Based on the lowest of the 8-hour average, 15-minute readings, or instantaneous readings.
5. MADEP Indoor Air Background Values from: MADEP, "Characterizing Risks Posed by Petroleum Contaminated Sites: Implementation of MADEP VPH/EPH Approach," Final Policy, 31 October 2002 (Policy #WSC-02-411); and MCP Toxicity.xls (MCPsunda.zip), 20 December 2001, available at <http://www.state.ma.us/deplbwc/files/standard/gw2/gw2.htm>.
6. ND: compound not detected above quantitation limit, number in parentheses is the quantitation limit.
7. TR: compound detected below the quantitation limit, number in parentheses is the quantitation limit.
8. Test Results associated with 6 April 2000 sampling event are not representative of typical indoor air conditions due to interference from products containing VOCs being used inside the facility at the time of sampling.
9. Results collected from the Rooftop sample location on 22 December 1997 are not shown in this table but have been reported in RAM Status reports dated 7 October 2004 and earlier.
10. Due to facility modifications, Sample location 10 is no longer accessible as of October 2004. This location has been replaced by Sample Location 11; refer to Figure 1 for this sample location.

TABLE II  
CHEMICAL ANALYSIS OF SUB-SLAB VENTING SYSTEM VAPOR SAMPLES  
170 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

Shut valve on 19 January 2000												
INFLUENT												
Sampling Increment	Day 1 16-Nov-99	Day 3 19-Nov-99	Day 7 23-Nov-99	Day 14 30-Nov-99	Day 28 14-Dec-99	2 Months 10-Jan-00	Day 70 25-Jan-00	3 Months 15-Feb-00	4 Months 14-Mar-00	4.5 Months 29-Mar-00	5 Months 26-Apr-00	5.5 Months 1-May-00
PID Reading (ppm)	175	63	60	10.5	2	0.2	195	82	61	38	1.6	19
Compound (ug/L)												
Benzene	348	88	127	19	19	ND	402	192	148	72	47	26
Toluene	45	23	36	7	11	ND	200	173	326	89	103	53
Ethylbenzene	32	15	22	4	5	ND	77	56	153	29	23	23
m,p-Xylene	18	11	17	3	5	ND	76	70	282	48	126	42
o-Xylene	2	ND	3	ND	ND	ND	14	17	36	14	67	18
Naphthalene	NA	NA	NA	150	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	ND	ND	5	ND	ND	ND	13	13	29	10	48	6
Total VOCs	445	137	216	183	40	2	782	520	974	242	420	168

Shut valve on 19 January 2000												
EFFLUENT - 1												
Sampling Increment	Day 1 16-Nov-99	Day 3 19-Nov-99	Day 7 23-Nov-99	Day 14 30-Nov-99	Day 28 14-Dec-99	2 Months 10-Jan-00	Day 70 25-Jan-00	3 Months 15-Feb-00	4 Months 14-Mar-00	4.5 Months 29-Mar-00	5 Months 26-Apr-00	5.5 Months 1-May-00
PID Reading (ppm)	0	0	11	4.1	0	0.2	0	0.8	4	0	0.4	0
Compound (ug/L)												
Benzene	ND	ND	33	14	ND	ND	ND	ND	56	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	5	ND	ND	11	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylene	ND	ND	ND	ND	ND	ND	ND	4	ND	ND	41	ND
o-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	26	ND
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	ND	ND	ND	4	ND	NA	ND	ND	16	ND	15	ND
Total VOCs	0	0	33	18	0	0	0	9	72	ND	93	0

Shut valve on 19 January 2000												
EFFLUENT - 2												
Sampling Increment	Day 1 16-Nov-99	Day 3 19-Nov-99	Day 7 23-Nov-99	Day 14 30-Nov-99	Day 28 14-Dec-99	2 Months 10-Jan-00	Day 70 25-Jan-00	3 Months 15-Feb-00	4 Months 14-Mar-00	4.5 Months 29-Mar-00	5 Months 26-Apr-00	5.5 Months 1-May-00
PID Reading (ppm)	0	0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)												
Benzene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	14	ND
o-Xylene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	9	ND
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA
Styrene	2	NA	2	ND	ND	ND	11	ND	36	ND	6	ND
Total VOCs	2	NA	2	0	0	0	11	0	36	ND	29	0

## NOTES AND ABBREVIATIONS:

- VOCs: volatile organic compounds
- ND: compound not detected above method detection limit (less than approximately 1 ug/L).
- NA: not analyzed.
- INFLUENT: Vapor samples collected prior to carbon treatment.
- EFFLUENT - 1: Vapor samples collected after flowing through primary carbon treatment drums (old carbon).
- EFFLUENT - 2: Vapor samples collected after flowing through secondary carbon treatment drums (new carbon).
- Samples analyzed by gas chromatograph-mass spectrometry (GC/MS).

TABLE II  
CHEMICAL ANALYSIS OF SUB-SLAB VENTING SYSTEM VAPOR SAMPLES  
120 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

Opened valve on 2 October 2000												
INFLUENT Sampling Increment Sample Date	6 Months 24-May-00	7 Months 23-Jun-00	8 Months 31-Jul-00	9 Months 29-Aug-00	10 months 27-Sep-00	11 months 31-Oct-00	12 months 28-Nov-00	13 months 31-Dec-00	14 months 22-Jan-01	15 months 27-Feb-01	15 months 26-Mar-01	16 Months 30-Apr-01
PID Reading (ppm)	9.4	4.2	1.9	0.6	0.4	0	0	0	0	0	0	0
Compound (ug/L)												
Benzene	13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	50	20	7	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	15	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene	27	18	5	18	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene	8	7	ND	2	ND	ND	5	ND	ND	ND	ND	ND
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	ND	ND	3	ND	ND	2	4	3	ND	ND	ND	5
Total VOCs	113	51	15	20	8	2	9	3	6	6	6	5

Opened valve on 2 October 2000												
EFFLUENT - 1 Sampling Increment Sample Date	6 Months 24-May-00	7 Months 23-Jun-00	8 Months 31-Jul-00	9 Months 29-Aug-00	10 Months 27-Sep-00	11 months 31-Oct-00	12 months 28-Nov-00	13 months 31-Dec-00	14 months 22-Jan-01	15 months 27-Feb-01	15 months 26-Mar-01	16 Months 30-Apr-01
PID Reading (ppm)	4.5	3.3	1.2	0.8	0	0	0	0	0	0	0	0
Compound (ug/L)												
Benzene	28	8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	11	13	10	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene	ND	ND	ND	ND	3	ND	ND	ND	ND	ND	ND	ND
O Xylene	ND	ND	ND	11	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	ND	ND	ND	ND	ND	5	11	4	ND	ND	ND	ND
Total VOC's	28	19	13	21	3	5	11	4	6	6	6	6

Opened valve on 2 October 2000												
EFFLUENT - 2 Sampling Increment Sample Date	6 Months 24-May-00	7 Months 21-Jun-00	8 Months 31-Jul-00	9 Months 29-Aug-00	10 Months 27-Sep-00	11 months 31-Oct-00	12 months 28-Nov-00	13 months 31-Dec-00	14 months 22-Jan-01	15 months 27-Feb-01	15 months 26-Mar-01	16 Months 30-Apr-01
PID Reading (ppm)	0	0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)												
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs	0	0	0	0	0	0	0	0	0	0	0	0

## NOTES AND ABBREVIATIONS:

- VOCs: volatile organic compounds
- ND: compound not detected above method detection limit (less than approximately 1 ug/L)
- NA: not analyzed
- INFLUENT: Vapor samples collected prior to carbon treatment
- EFFLUENT - 1: Vapor samples collected after flowing through primary carbon treatment down (mid carbon)
- EFFLUENT - 2: Vapor samples collected after flowing through secondary carbon treatment down (post carbon)
- Samples analyzed by gas chromatograph at ERM & Aldrich Laboratory



TABLE II  
CHEMICAL ANALYSIS OF SUB SLAB VENTING SYSTEM VAPOR SAMPLES  
129 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

INFLUENT	17 Months	18 Months	19 Months	20 Months	21 Months	22 Months	23 Months	24 Months	25 Months	26 Months	27 Months
Sample Date	31-May-01	27-Jun-01	27-Jul-01	31-Aug-01	30-Sep-01	29-Oct-01	30-Nov-01	19-Dec-01	31-Jan-02	27-Feb-02	28-Mar-02
PID Reading (ppm)	0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)											
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	5	2	2	1	2	ND	4	ND	ND	ND	ND
Total VOCs	6	3	0	1	3	0	4	0	0	0	0

EFFLUENT - 1	17 Months	18 Months	19 Months	20 Months	21 Months	22 Months	23 Months	24 Months	25 Months	26 Months	27 Months
Sample Date	31-May-01	27-Jun-01	27-Jul-01	31-Aug-01	30-Sep-01	29-Oct-01	30-Nov-01	19-Dec-01	31-Jan-02	27-Feb-02	28-Mar-02
PID Reading (ppm)	0	1.2	0.8	0	0	0	0	0	0	0	0
Compound (ug/L)											
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	ND	ND	ND	ND	2	ND	ND	1	ND	ND	ND
Total VOCs	0	0	0	0	2	0	0	1	0	0	0

EFFLUENT - 2	17 Months	18 Months	19 Months	20 Months	21 Months	22 Months	23 Months	24 Months	25 Months	26 Months	27 Months
Sample Date	31-May-01	27-Jun-01	27-Jul-01	31-Aug-01	30-Sep-01	29-Oct-01	30-Nov-01	19-Dec-01	31-Jan-02	27-Feb-02	28-Mar-02
PID Reading (ppm)	0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)											
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs	0	0	0	0	0	0	0	0	0	0	0

#### NOTES AND ABBREVIATIONS:

- VOC's: volatile organic compounds.
- ND: compound not detected above method detection limit (less than approximately 1 ug/L).
- NA: not analyzed.
- INFLUENT: Vapor samples collected prior to carbon treatment.
- EFFLUENT - 1: Vapor samples collected after flowing through primary carbon treatment down (roof carbon).
- EFFLUENT - 2: Vapor samples collected after flowing through secondary carbon treatment down (post carbon).
- Samples analyzed by gas chromatograph at Halsey & Halsey Laboratory.

TABLE II  
CHEMICAL ANALYSIS OF SUB-SLAB VENTING SYSTEM VAPOR SAMPLES  
129 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

INFLUENT		28 Months 2-May-02	29 Months 5-Jun-02	30 Months 27-Jul-02	31 months 30-Jul-02	32 months 27-Aug-02	33 Months 25-Sep-02	34 Months 28-Oct-02	35 Months 24-Nov-02	36 Months 31-Dec-02	37 Months 29-Jan-03	38 Months 21-Feb-03	39 Months 31-Mar-03
Sampling Increment Sample Date													
PID Reading (ppm)		0	0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)													
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs		0	0	0	0	0	0	0	0	0	0	0	0

EFFLUENT - 1		28 Months 2-May-02	29 Months 5-Jun-02	30 Months 27-Jul-02	31 months 30-Jul-02	32 months 27-Aug-02	33 Months 25-Sep-02	34 Months 28-Oct-02	35 Months 24-Nov-02	36 Months 31-Dec-02	37 Months 29-Jan-03	38 Months 21-Feb-03	39 Months 31-Mar-03
Sampling Increment Sample Date													
PID Reading (ppm)		0	0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)													
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs		0	0	0	0	0	0	0	0	0	0	0	0

EFFLUENT - 2		28 Months 2-May-02	29 Months 5-Jun-02	30 Months 27-Jul-02	31 months 30-Jul-02	32 months 27-Aug-02	33 Months 25-Sep-02	34 Months 28-Oct-02	35 Months 24-Nov-02	36 Months 31-Dec-02	37 Months 29-Jan-03	38 Months 21-Feb-03	39 Months 31-Mar-03
Sampling Increment Sample Date													
PID Reading (ppm)		0	0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)													
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs		0	0	0	0	0	0	0	0	0	0	0	0

## NOTES AND ABBREVIATIONS:

- VOCs: volatile organic compounds
- ND: compound not detected above method detection limit (less than approximately 1 ug/L)
- NA: not analyzed
- INFLUENT: Vapor samples collected prior to carbon treatment
- EFFLUENT - 1: Vapor samples collected after flowing through primary carbon treatment drum (ind. carbon)
- EFFLUENT - 2: Vapor samples collected after flowing through secondary carbon treatment drum (post-carbon)
- Samples analyzed by J&K Chromatography or H&N & Associates Laboratory

TABLE II  
CHEMICAL ANALYSIS OF SUB-SLAB VENTING SYSTEM VAPOR SAMPLES  
129 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

INFLUENT		40 Months 28-Apr-03	41 Months 29-May-03	42 Months 30-Jun-03	43 months 31-Jul-03	44 months 22-Aug-03	45 Months 30-Sep-03	46 Months 28-Oct-04	47 Months 30-Nov-04	48 Months 18-Dec-04	49 Months 22-Jan-04	50 Months 14-Feb-04
Sampling Increment	Sample Date											
PID Reading (ppm)		0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)												
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene		4	ND	5	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene		7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs		11	0	5	0	0	0	0	0	0	0	0

EFFLUENT - 1		40 Months 28-Apr-03	41 Months 29-May-03	42 Months 30-Jun-03	43 months 31-Jul-03	44 months 22-Aug-03	45 Months 30-Sep-03	46 Months 28-Oct-04	47 Months 30-Nov-04	48 Months 18-Dec-04	49 Months 22-Jan-04	50 Months 14-Feb-04
Sampling Increment	Sample Date											
PID Reading (ppm)		0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)												
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs		0	0	0	0	0	0	0	0	0	0	0

EFFLUENT - 2		40 Months 28-Apr-03	41 Months 29-May-03	42 Months 30-Jun-03	43 months 31-Jul-03	44 months 22-Aug-03	45 Months 30-Sep-03	46 Months 28-Oct-04	47 Months 30-Nov-04	48 Months 18-Dec-04	49 Months 22-Jan-04	50 Months 14-Feb-04
Sampling Increment	Sample Date											
PID Reading (ppm)		0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)												
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs		0	0	0	0	0	0	0	0	0	0	0

## NOTES AND ABBREVIATIONS:

- VOC's, volatile organic compounds
- ND, compound not detected above method detection limit (less than approximately 1 ug/L).
- NA, not analyzed
- SPILL-LEVELS: Vapor samples collected prior to incineration.
- EFFLUENT - 1: Vapor samples collected after filtering through primary carbon treatment (down draft carbon).
- EFFLUENT - 2: Vapor samples collected after filtering through secondary carbon treatment (down draft carbon).
- Resumes analysis by gas chromatography or HPLC & Aroclor Intensity.

[illegible][illegible]

EFFLUENT - 2												
Sampling Increment	53 Months	52 Months	51 Months	54 months	55 months	56 Months	57 Months	58 Months	59 Months	60 Months	61 Months	
Sample Date	31-Mar-04	28-Apr-04	28-May-04	25-Jun-04	30-Jul-04	31-Aug-04	14-Sep-04	27-Oct-04	30-Nov-04	20-Dec-04	25-Jan-05	
100	0	0	0	0	0	0	0	0	0	0	0	
100 Reading (ppm)												
Compound (ug/L)												
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Stylohexane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MALP Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2 Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetophenone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs												

NOTES AND ABBREVIATIONS.

- NO<sub>2</sub><sup>+</sup> volatile organic compounds.  
ND: compound not detected above method detection limit (data thus approximately 1 ng/L).  
NA: not analyzed.

TABLE II  
CHEMICAL ANALYSIS OF SUB-SLAB VENTING SYSTEM VAPOR SAMPLES  
129 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

INFLUENT		62 Months 28 Feb-05	63 Months 21-Mar-05
Sampling Increment	Sample Date		
PID Reading (ppm)		0	0
Compound (ug/L)			
Benzene		ND	ND
Toluene		ND	ND
Ethylbenzene		ND	ND
M&P Xylene		ND	ND
O Xylene		ND	ND
Naphthalene		NA	NA
Styrene		***	***
Total VOCs		0	0

EFFLUENT - 1		62 Months 28 Feb-05	63 Months 21-Mar-05
Sampling Increment	Sample Date		
PID Reading (ppm)		0	0
Compound (ug/L)			
Benzene		ND	ND
Toluene		ND	ND
Ethylbenzene		ND	ND
M&P Xylene		ND	ND
O Xylene		ND	ND
Naphthalene		NA	NA
Styrene		ND	ND
Total VOCs		0	0

EFFLUENT - 2		62 Months 28 Feb-05	63 Months 21-Mar-05
Sampling Increment	Sample Date		
PID Reading (ppm)		0	0
Compound (ug/L)			
Benzene		ND	ND
Toluene		ND	ND
Ethylbenzene		ND	ND
M&P Xylene		ND	ND
O Xylene		ND	ND
Naphthalene		NA	NA
Styrene		ND	ND
Total VOCs		0	0

NOTES AND ABBREVIATIONS

- VOCs: volatile organic compounds
- ND: compound not detected above method detection limit (less than approximately 1 ug/L)
- NA: not analyzed
- INFLUENT: Vapor samples collected prior to carbon treatment
- EFFLUENT - 1: Vapor samples collected after flowing through primary carbon treatment system (ind. carbon)
- EFFLUENT - 2: Vapor samples collected after flowing through secondary carbon treatment system (ind. post carbon)
- Samples analyzed by gas chromatography at Juley & Albrecht Laboratory.



[illegible]

TABLE III  
SUB-SLAB VENTING SYSTEM MONITORING DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

Monitoring Date	Time	Influent Concentrations PID (ppm)	Influent Concentrations H2A GC (ug/L)	Effluent Concentrations Effluent - 1 (ppm)	Effluent - 2 (ppm)	Outdoor Temp	Outlet Vapor Temp	Flow Velocity (ft/min) Influent Effluent	System Vacuum and Pressure (in. water) Blower Knockout Discharge	Vacuum at Extraction Points (in. water) EP-1 EP-2 EP-3 EP-4 EP-5
February 8, 2000	17:30	117		0	0	25	90	1500 1400	17 11.5 36	
February 9, 2000	7:45	120		0	0	15	90	1500 1400	18 11 30	
February 9, 2000	8:30	129		0	0	40	102	1500 1400	17.5 11 36	
February 10, 2000	18:30	134		40	0	35	103	1500 1400	17.5 11.5 35	
February 11, 2000	7:00	137		106	0	35	103	1500 1400	17 13.5 35	
February 12, 2000	7:00	138		0	0	0	100	1500 1400	17.5 11 36	
February 13, 2000	15:00	120		0	0	25	100	1500 1400	17.5 11 30.5	
February 14, 2000	17:10	76		0	0	30	103	1500 1400	17.5 11 35	
February 15, 2000	8:10	82	520	0.3	0	30	102	1500 1400	17.5 11 36	
February 16, 2000	7:30	85		48	0	35	101	1500 1400	17.5 11 37	
February 18, 2000	7:00	78		0	0	20	100	1500 1400	17 10.5 30	
February 19, 2000	7:00	---		0	0	0	100	1500 1400	17 10.5 34	
February 21, 2000	7:00	70		0	0	30	100	1500 1400	17 10.5 35.8	
February 22, 2000	8:30	102		0	0	35	101	1500 1400	17.5 11 35	
February 23, 2000	18:50	81		0	0	37	101	1500 1400	17.5 11 38	
February 24, 2000	14:00	89		0.5	0	50	108	1500 1400	17.5 11.5 35.5	
February 25, 2000	8:10	82		77	0	50	107	1500 1400	17.5 11 35	
February 26, 2000	18:00	86		77	0	50	112	1500 1400	17.5 11 34.5	8
February 27, 2000	19:50	80		0	0	35	108	1500 1400	17.5 11 35	
February 28, 2000	7:45	90		1	0	40	112	1500 1400	17.5 11.5 38	
February 29, 2000	7:40	90		0	0	50	111	1500 1400	17.5 12 30	
February 29, 2000	8:00	86		0	0	32	100	1500 1400	17.5 12 35	
February 29, 2000	8:00	91		0	0	50	109	1500 1400	17.5 11.5 35	
March 1, 2000	10:30	88		31	0	50	110	1500 1400	17.5 11 35	
March 2, 2000	10:00	83		22	0	30	103	1500 1400	17.5 11 35	
March 3, 2000	7:45	32		46	0	40	106	1500 1400	17 11.5 35.5	8
March 4, 2000	9:00	74		0	0	55	106	1500 1400	17.5 11.5 35.5	
March 5, 2000	14:00	90		7	0	40	108	1500 1400	17 11.5 30	
March 6, 2000	8:30	109		0	0	50	110	1500 1400	17 11 39	
March 7, 2000	19:00	47		21	0	60	111	1500 1400	17 11 39	
March 8, 2000	8:30	35		7	0	70	114	1500 1400	17 11 35	
March 9, 2000	17:30	82		19	0	45	103	1500 1400	17 11 35	
March 10, 2000	8:15	85		21	0	45	105	1500 1400	17.5 11 30	
March 11, 2000	16:30	48		0	0	30	105	1500 1400	17.5 11.5 39	
March 12, 2000	13:30	40		0	0	30	107	1500 1400	17.5 11.5 30	
March 13, 2000	9:00	45		4	0	45	110	1500 1400	17 11.5 38	
March 14, 2000	8:50	81	974	3	0	45	111	1500 1400	17 11.5 38	
March 15, 2000	9:45	8		52	0	55	114	1500 1400	17.5 11 36	
March 16, 2000	20:30	86		58	0	55	114	1500 1400	17.5 11 36	
March 17, 2000	17:15	85		66	0	65	120	1500 1400	17.5 11 36	
March 18, 2000	15:15	48		38	0	60	117	1500 1400	17.5 11 34	
March 19, 2000	8:45	50		0	0	32	104	1500 1400	17.5 11 34	
March 20, 2000	15:30	15		0	0	30	102	1500 1400	17 11 35	8
March 21, 2000	7:30	38		0	0	30	104	1500 1400	17.5 11 35	
March 22, 2000	18:30	28		0	0	45	105	1500 1400	17.5 10 34.5	
March 23, 2000	8:00	28		0	0	40	107	1500 1400	17.5 10.5 34.5	
March 24, 2000	21:00	32		0	0	45	110	1500 1400	17.5 10.5 34.5	
March 25, 2000	9:45	34		0	0	60	113	1500 1400	17.5 10.5 34.5	
March 26, 2000	13:00	34		0	0	65	117	1500 1400	17.5 10.5 34.5	
March 27, 2000	17:45	38		0	0	90	112	1500 1400	17 11 34	
March 28, 2000	11:30	32		28	0	65	119	1500 1400	17 11 33	
March 29, 2000	13:15	47		29	0	90	114	1500 1400	16 12 32	
March 30, 2000	20:00	37	202	26	0	50	112	1500 1400	18 12 33	
March 31, 2000	9:00	38		0	0	50	112	1500 1400	18 12 33	
March 31, 2000	18:00	20		0	0	45	112	1500 1400	17.5 12 33	

TABLE III  
SUB-SLAB VENTING SYSTEM MONITORING DATA  
120 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

Monitoring Date	Time	Influent Concentrations		Effluent Concentrations		Outdoor Temp	Outlet Vapor Temp	Flow Velocity (ft/min)		System Vacuum and Pressure (in. water) Blower Knockout Drum	Vacuum at Extraction Points (in. water)						
		PID (ppm)	H2A GC (ug/L)	Effluent - 1 (ppm)	Effluent - 3 (ppm)			Influent	Effluent		EP-1	EP-2	EP-3	EP-4	EP-5		
March 30, 2000	9:30	11		0	0	50	112	1500	1490	17.5	11	33					
March 30, 2000	15:15	33		0	0	45	113	1500	1480	17.5	11	33					
March 31, 2000	7:30	30		0	0	45	109	1500	1480	18	11	33.5					
April 1, 2000	12:30	28		0	0	53	118	1500	1480	17.5	12	33					
April 2, 2000	18:30	40		15	0	55	119	1500	1480	17.5	11.5	33					
April 3, 2000	14:45	26		16	0	42	117	1500	1490	18	11	33					
April 3, 2000	20:30	36		0	0	55	117	1500	1480	18	11	33					
April 4, 2000	13:45	21		0	0	60	121	1500	1480	17.5	11	33					
April 5, 2000	10:30	21		0	0	45	116	1500	1490	18	11	33					
April 6, 2000	8:00	21		0	0	40	111	1500	1480	18	11.5	33					
April 7, 2000	8:00	27.0		24.0	0.0	50	117	1500	1490	18	11	33					
April 7, 2000	7:12	28.0		26.0	0.0	55	117	1500	1450	18	11	33					
April 8, 2000	15:45	21.6		0	0	40	113	1500	1490	17.5	11	33					
April 10, 2000	13:00	32.0		6.0	0.0	50	112	1500	1490	17.5	11	34					
April 11, 2000	9:45	47.0		34.0	0.0	45	111	1500	1490	17.5	11	34					
April 12, 2000	14:15	25.0		13.0	0.0	45	119	1500	1480	17.5	11	34					
April 13, 2000	19:00	36.0		10.0	0.0	50	112	1500	1490	17.5	11	34					
April 14, 2000	7:00	50.0		6.0	0.0	50	111	1500	1490	17.5	11	34					
April 17, 2000	9:45	40.0		0.0	0.0	45	117	1500	1490	18.5	11	33.5					
April 17, 2000	17:45	37.0		0.0	0.0	50	116	1500	1500	18	11	34					
April 18, 2000	7:45	15.0		0.0	0.0	45	111	1500	1490	18	11	34					
April 18, 2000	19:30	15.0		0.0	0.0	45	110	1500	1500	18	11	34					
April 19, 2000	7:00	22.0		4.0	0.0	50	112	1500	1500	18	11	34					
April 19, 2000	18:00	16.0		5.0	0.0	45	112	1500	1500	18	11	34					
April 20, 2000	9:15	10.0		8.0	0.0	50	117	1500	1500	18	11	34					
April 20, 2000	17:30	10.0		0.0	0.0	50	115	1500	1500	18	11	34					
April 21, 2000	9:30	6.0		0.0	0.0	50	117	1500	1500	18	11	33					
April 24, 2000	15:15	5.0		0.0	0.0	50	112	1500	1500	18	12	33					
April 26, 2000	10:30	1.6	420	0.4	0.0	40	108	1500	1500	17.5	11	33					
April 27, 2000	7:30	3.4		0.9	0.0	40	109	1500	1500	18	12	33					
April 28, 2000	7:00	3.3		1.5	0.0	50	110	1500	1500	18	12	33					
April 29, 2000	9:30	4.6	180	3.0	0.0	50	110	1500	1500	18	12	33					
May 1, 2000	6:00	30.0		8.0	0.0	50	118	1500	1500	18	12	34					
May 2, 2000	10:00	17.0		0.0	0.0	50	115	1500	1500	18	11	33					
May 3, 2000	8:30	6.0		0.0	0.0	60	117	1500	1500	19	12	34					
May 4, 2000	12:00	18.0		0.1	0.0	70	123	1500	1500	19	11.5	33					
May 5, 2000	9:15	15.0		0.0	0.0	65	120	1500	1500	19	11	33					
May 6, 2000	7:00	15.0		0.0	0.0	70	126	1500	1500	18	11.5	33					
May 8, 2000	9:30	11.8		1.0	0.0	75	128	1500	1500	18	11	33					
May 9, 2000	17:00	12.0		1.8	0.0	65	126	1500	1500	18	11	33					
May 10, 2000	6:15	12.0		0.0	0.0	50	117	1500	1500	17.5	11	33					
May 11, 2000	15:30	13.0		0.0	0.0	65	122	1500	1500	17.5	11	33					
May 12, 2000	9:00	11.3		0.0	0.0	65	121	1500	1500	18	11	33					
May 16, 2000	7:00	14.0		0.0	0.0	65	121	1500	1500	17.5	11	33					
May 16, 2000	9:00	17.0		0.1	0.0	60	121	1500	1500	18	11	33					
May 17, 2000	16:00	7.0		0.3	0.0	65	122	1500	1500	18	11.5	33					
May 18, 2000	16:30	13.0		1.1	0.0	70	121	1500	1500	18	11.5	33					
May 19, 2000	10:00	15.2		1.9	0.0	55	119	1500	1500	19	12	33					
May 20, 2000	18:45	15.3		2.5	0.0	50	120	1500	1500	17.5	11	33					
May 22, 2000	13:15	12.3		4.8	0.0	60	121	1500	1500	17.5	12	32.5					
May 24, 2000	9:00	9.4	113	4.5	0.0	60	119	1500	1500	17.5	12.5	32					
May 25, 2000	12:00	10.1		6.5	0.0	65	120	1500	1500	18	12	32					
May 26, 2000	9:00	10.0		7.0	0.0	60	121	1500	1500	18	12	32					
May 30, 2000	12:00	11.0		9.0	0.0	70	123	1500	1500	18	12	32.5					
May 31, 2000	7:30	10.6		9.0	0.0	70	126	1500	1500	18	11.5	32					
June 1, 2000	15:00	10.1		10.0	0.0	85	140	1500	1500	18	11	33					
June 2, 2000	8:00	8.0		9.5	0.0	80	132	1500	1500	18	11	33					
June 3, 2000	7:00	6.0		0.0	0.0	75	123	1500	1500	18	12	33					
June 5, 2000	18:00	7.2		0.0	0.0	75	123	1500	1500	18	12	33					
June 6, 2000	17:00	6.0		0.0	0.0	65	121	1500	1500	17.5	12	33					
June 8, 2000	17:00	6.8		0.0	0.0	65	121	1500	1500	18	12	33					
June 9, 2000	9:00	8.5		0.3	0.0	60	120	1500	1500	18	12.5	33					

TABLE III  
SUB-SLAB VENTING SYSTEM MONITORING DATA  
126 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

Monitoring Date	Time	Influent Concentrations PID (ppm)	Influent Concentrations H2A GC (ug/L)	Effluent Concentrations Effluent - 1 (ppm)	Effluent - 2 (ppm)	Outdoor Temp	Outlet Vapor Temp	Flow Velocity (ft/min) Influent	Flow Velocity (ft/min) Effluent	System Vacuum and Pressure (inches) Blower	Knockout Drum	Discharge	Vacuum at Extraction Points (inches) EP-1 EP-2 EP-3 EP-4 EP-5
June 13, 2000	8:00	4.8		0.2	0.0	66	123	1500	1500	18	12.5	33	
June 14, 2000	9:00	3.3		0.1	0.0	66	122	1500	1500	18	12.5	33	
June 15, 2000	8:45	1.7		0.2	0.0	66	123	1500	1500	18	12.5	33	
June 16, 2000	8:15	5.0		2.0	0.0	70	133	1500	1500	18	12.5	33	
June 17, 2000	15:30	6.2		2.5	0.0	70	133	1500	1500	18	12.5	33	
June 18, 2000	9:00	5.7		2.2	0.0	75	134	1500	1500	18	12.5	33	
June 20, 2000	7:30	4.6		2.7	0.0	75	133	1500	1500	18	12.5	33	
June 21, 2000	8:15	3.9		2.8	0.0	60	134	1500	1500	17.5	12.5	32.5	
June 22, 2000	9:00	4.2	51	3.3	0.0	75	134	1500	1500	17.5	12.5	32.5	
June 23, 2000	9:30	3.7		3.4	0.0	75	139	1500	1500	17	12	32	
June 27, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
June 28, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
June 29, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
June 30, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 1, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 2, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 3, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 4, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 5, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 6, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 7, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 8, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 9, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 10, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 11, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 12, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 13, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 14, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 15, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 16, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 17, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 18, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 19, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 20, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 21, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 22, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 23, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 24, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 25, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 26, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 27, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 28, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 29, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
July 30, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 1, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 2, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 3, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 4, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 5, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 6, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 7, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 8, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 9, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 10, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 11, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 12, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 13, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 14, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 15, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 16, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 17, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 18, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 19, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 20, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 21, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 22, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 23, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 24, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 25, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 26, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 27, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 28, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 29, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
August 30, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 1, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 2, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 3, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 4, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 5, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 6, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 7, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 8, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 9, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 10, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 11, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 12, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 13, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 14, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 15, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 16, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 17, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 18, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 19, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 20, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 21, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 22, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 23, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 24, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 25, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 26, 2000	7:15	3.0		3.3	0.0	75	139	1500	1500	18	11.5	32.5	
September 27, 2000	7:15	3.0		3.3	0.0	75	139	150					

TABLE III  
SUB-SLAB VENTING SYSTEM MONITORING DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

Monitoring Date	Time	Influent Concentrations PID (ppm)	Influent Concentrations H2A GC (ug/L)	Effluent Concentrations Effluent - 1 (ppm)	Effluent Concentrations Effluent - 2 (ppm)	Outdoor Temp	Outlet Vapor Temp	Flow Velocity (ft/min) Influent	Flow Velocity (ft/min) Effluent	System Vacuum and Pressure ("water") Blower Knockout Drum	Vacuum at Extraction Points ("water") EP-1 EP-2 EP-3 EP-4 EP-5
February 7, 2001	10:00	0		0	0	40	117	390	1900	20	33
February 9, 2001	9:30	0		0	0	40	114	390	1900	20	34
February 12, 2001	9:30	0		0	0	15	87	390	1900	19.5	34
February 14, 2001	7:30	0		0	0	25	106	390	1900	20	33
February 15, 2001	10:45	0		0	0	40	99	390	1900	20	33
February 16, 2001	7:30	0		0	0	25	105	390	1900	20	33
February 20, 2001	9:15	0		0	0	40	114	390	1900	20.5	33
February 23, 2001	7:30	0		0	0	30	108	390	1900	20.5	33
February 27, 2001	9:00	0		0	0	30	110	390	1900	21	32.5
March 1, 2001	7:00	0		0	0	25	100	390	1900	21	32.5
March 2, 2001	9:00	0		0	0	20	99	390	1900	21	32.5
March 5, 2001	12:00	0		0	0	30	100	390	1900	20.5	32
March 7, 2001	7:00	0		0	0	30	96	390	1900	21	32
March 8, 2001	6:00	0		0	0	30	114	390	1900	21	32
March 9, 2001	7:30	0		0	0	30	115	390	1900	21	32
March 12, 2001	7:30	0		0	0	40	116	390	1900	21	32
March 14, 2001	10:00	0		0	0	30	113	390	1900	21	32
March 16, 2001	6:00	0		0	0	30	116	390	1900	21.5	32
March 19, 2001	6:00	0		0	0	30	117	390	1900	21.5	32
March 20, 2001	6:00	0		0	0	35	117	390	1900	21.5	32
March 22, 2001	9:00	0		0	0	40		390	1900	21.5	32
March 23, 2001	9:00	0		0	0	35	112	390	1900	21	32
March 26, 2001	9:30	0		0	0	30	105	390	1900	21	32
March 28, 2001	15:00	0		0	0	30	118	390	1900	21.5	32
March 30, 2001	8:00	0		0	0	40	117	390	1900	21.5	32
April 2, 2001	9:45	0		0	0	45	124	390	1900	21.5	32
April 4, 2001	10:30	0		0	0	65	133	390	1900	9.5	37
April 6, 2001	13:00	0		0	0	55	117	390	1900	10	38
April 10, 2001	10:00	0		0	0	90	117	390	1900	10	37.5
April 13, 2001	10:00	0		0	0	45	117	390	1900	10	38
April 16, 2001	9:30	0		0	0	60	120	390	1900	10	38
April 18, 2001	15:00	0		0	0	60	137	390	1900	10	38
April 20, 2001	16:00	0		0	0	65	151	390	1900	10	38
April 24, 2001	15:45	0		0	0	60	129	390	1900	10	38
April 25, 2001	16:00	0		0	0	65	128	390	1900	10	38
April 27, 2001	11:45	0		0	0	65	126	390	1900	10	38
April 30, 2001	19:00	0		0	0	80	120	390	1900	10	38
May 1, 2001	8:30	0		0	0	70	138	390	1900	10	38
May 4, 2001	15:00	0		0	0	65	122	390	1900	10	37.5
May 7, 2001	8:00	0		0	0	85	136	390	1900	10	37.5
May 9, 2001	8:00	0		0	0	70	142	390	1900	10	37
May 11, 2001	10:00	0		0	0	65	124	390	1900	10	37.5
May 14, 2001	10:00	0		0	0	70	122	390	1900	10	37.5
May 15, 2001	14:00	0		0	0	70	119	390	1900	10	38
May 16, 2001	7:30	0		0	0	75	126	390	1900	10	38
May 22, 2001	7:00	0		0	0	70	122	390	1900	10	38
May 24, 2001	10:00	0		0	0	60	117	390	1900	10	38
May 25, 2001	8:00	0		0	0	70	124	390	1900	10.5	38
May 31, 2001	8:00	0		0	0	70	140	390	1900	10.5	38
June 1, 2001	6:00	0		0	0	75	137	390	1900	10.5	37
June 4, 2001	13:00	0		0	0	70	137	390	1900	10.5	37
June 6, 2001	9:30	0		0	0	75	140	390	1900	10.5	36
June 8, 2001	13:30	0		0	0	80	140	390	1900	10.5	36
June 11, 2001	9:30	0		0	0	75	140	390	1900	10.5	36
June 13, 2001	7:00	0		0	0	80	140	390	1900	11	36
June 15, 2001	15:00	0		0	0	75	140	390	1900	11	36.5
June 18, 2001	9:00	0		0	0	70	140	390	1900	11	37
June 21, 2001	9:30	0		0	0	80	140	390	1900	11	36
June 23, 2001	8:00	0		0	0	85	151	390	1900	11	38
June 25, 2001	12:00	0		0	0	85	154	390	1900	11	38
June 27, 2001	10:00	0		0	0			390	1900	11	38

System down, re-started

Reduced Air Flow



TABLE III  
SUB-SLAB VENTING SYSTEM MONITORING DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

Monitoring Date	Time	Influent Concentrations PID (ppm)	Effluent Concentrations H2A GC (ppm)	Effluent - 1 (ppm)	Effluent - 2 (ppm)	Outdoor Temp	Outlet Vapor Temp	Flow Velocity (ft/min) Influent	Flow Velocity (ft/min) Effluent	System Vacuum and Pressure (in. water) Blower Knockout Drum	System Vacuum and Pressure (in. water) Discharge	Vacuum at Extraction Points (in. water) EP-1 EP-2 EP-3 EP-4 EP-5
July 3, 2001	8:00	0	0	0	0	80	140	300	1500	11	37	
July 5, 2001	7:30	0	0	0	0	85	150	300	1500	11	37	
July 6, 2001	8:00	0	0	0	0	90	155	300	1500	11	38	
July 8, 2001	7:00	0	0	0	0	85	146	300	1500	11	38	
July 10, 2001	16:00	0	0	0	0	90	152	300	1500	11	37	
July 11, 2001	7:30	0	0	0	0	85	150	300	1500	11	37	
July 13, 2001	17:30	0	0	0	0	85	150	300	1500	11	37	
July 17, 2001	7:15	0	0	0	0	75	137	300	1500	11.5	38	
July 20, 2001	11:30	0	0	0	0	85	157	300	1500	11.5	38	
July 24, 2001	8:30	0	0	0	0	80	144	300	1500	11.5	37	
July 27, 2001	8:00	0	0	0	0	70	132	300	1500	11.5	37	
July 28, 2001	11:00	0	0	0	0	80	145	300	1500	12	36	
August 5, 2001	15:00	0	0	0	0	80	120	300	1500	12	36	
August 7, 2001	19:00	0	0	0	0	95	157	300	1500	12	35.5	
August 8, 2001	9:00	0	0	0	0	90	145	300	1500	12.5	35.5	
August 10, 2001	18:00	0	0	0	0	80	145	300	1500	12.5	35.5	
August 13, 2001	7:30	0	0	0	0	75	145	300	1500	13	35.5	
August 16, 2001	10:00	0	0	0	0	80	144	300	1500	13	35	
August 20, 2001	8:15	0	0	0	0	75	144	300	1500	13.5	35	
August 24, 2001	8:30	0	0	0	0	75	144	300	1500	15	35	
August 27, 2001	7:30	0	0	0	0	80	145	300	1500	15	34	
August 29, 2001	7:30	0	0	0	0	75	144	300	1500	15	34	
August 31, 2001	8:00	0	0	0	0	75	143	300	1500	15.5	34	
September 14, 2001	11:15	0	0	0	0	85	128	300	1500	17	34	
September 21, 2001	13:30	0	0	0	0	85	140	300	1500	17	34	
September 30, 2001	19:00	0	0	0	0	75	142	300	1500	17	34	
October 4, 2001	8:10	0	0	0	0	75	138	300	1500	20	34	
October 6, 2001	12:34	0	0	0	0	65	85	300	1500	20.5	16	
October 9, 2001	11:50	0	0	0	0	65	132	300	1500	20	16	
October 13, 2001	10:40	0	0	0	0	65	135	300	1500	22	18.5	
October 24, 2001	12:15	0	0	0	0	75	150	300	1500	22.5	19	
October 26, 2001	12:00	0	0	0	0	55	130	300	1500	22.5	32	
October 31, 2001	14:30	0	0	0	0	55	122	300	1500	24	17.5	
November 10, 2001	11:15	0	0	0	0	55	122	300	1500	22	32	
November 12, 2001	10:30	0	0	0	0	55	122	300	1500	22	32	
November 16, 2001	14:30	0	0	0	0	70	148	300	1500	24	30	
November 21, 2001	11:20	0	0	0	0	55	130	300	1500	22	30	
November 25, 2001	8:00	0	0	0	0	45	114	300	1500	22	31	
November 27, 2001	13:15	0	0	0	0	75	148	300	1500	24	29	
November 30, 2001	8:45	0	0	0	0	65	140	300	1500	24	29	
December 6, 2001	12:45	0	0	0	0	55	118	300	1500	11	34	
December 7, 2001	14:45	0	0	0	0	45	112	300	1500	11	34	
December 12, 2001	12:00	0	0	0	0	40	98	300	1500	12	38	
December 19, 2001	14:15	0	0	0	0	35	82	300	1500	12	37	
December 21, 2001	13:15	0	0	0	0	35	106	300	1500	12	36	
December 25, 2001	13:15	0	0	0	0	35	104	300	1500	11	37	
January 3, 2002	7:45	0	0	0	0	55	108	300	1500	12	38	
January 4, 2002	13:30	0	0	0	0	45	110	300	1500	11	38	
January 7, 2002	13:30	0	0	0	0	55	111	300	1500	10	38	
January 11, 2002	13:30	0	0	0	0	60	120	300	1500	10	38	
January 16, 2002	15:30	0	0	0	0	35	94	300	1500	10	40	
January 22, 2002	12:00	0	0	0	0	35	102	300	1500	10	38	
January 26, 2002	15:40	0	0	0	0	35	102	300	1500	10	38	
January 31, 2002	7:00	0	0	0	0	34	104	300	1500	10	38	
February 8, 2002	8:45	0	0	0	0	34	104	300	1500	10	38	
February 12, 2002	7:00	0	0	0	0	34	104	300	1500	10	38	
February 27, 2002	15:15	0	0	0	0	32	100	300	1500	10	38	
March 6, 2002	16:40	0	0	0	0	32	130	300	1500	10	38	
March 18, 2002	9:30	0	0	0	0	55	130	300	1500	10	38	
March 26, 2002	13:30	0	0	0	0	55	130	300	1500	10	38	

TABLE III  
SUB-SLAB VENTING SYSTEM MONITORING DATA  
128 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

Monitoring Date	Time	Influent Concentrations PID (ppm)	HAA GC (ug/L)	Effluent Concentrations Effluent - 1 (ppm)	Effluent - 2 (ppm)	Outdoor Temp	Outlet Vapor Temp	Flow Velocity (ft/min) Influent	Flow Velocity (ft/min) Effluent	System Vacuum and Pressure (in. water) Blower Knockout Drum	System Vacuum and Pressure (in. water) Discharge	Vacuum at Extraction Points (in. water) EP-1 EP-2 EP-3 EP-4 EP-5
April 5, 2002	14:00	0	0	0	0	55	136	550	1250	11	37	
April 8, 2002	17:30	0	0	0	0	55	124			10	36	
April 15, 2002	8:45	0	0	0	0	55						
April 26, 2002	15:00	0	0	0	0	55	110	450	1450	11	38	
May 2, 2002	15:30	0	0	0	0	55	69	550	1350	12	38	
May 8, 2002	16:00	0	0	0	0	55	148	450	1250	12	37	
May 16, 2002	12:30	0	0	0	0	55	130	500	1400	12	38	
May 20, 2002	12:30	0	0	0	0	70	136	450	1250	12	36	
May 22, 2002	16:10	0	0	0	0	70	144	425	1250	13	37	
May 31, 2002	16:30	0	0	0	0	80	136					
June 5, 2002	13:00	0	0	0	0	80	131	500	1300	13	38	
June 12, 2002	16:30	0	0	0	0	70	144	425	1250	13	35	
June 19, 2002	14:40	0	0	0	0	75	154					
June 27, 2002	11:30	0	0	0	0	85	158					
July 3, 2002	15:30	0	0	0	0	90	172					
July 9, 2002	12:00	0	0	0	0	80	158	600	1250	18	34	
July 16, 2002	15:30	0	0	0	0	75	158	500	1100	17	32	
July 24, 2002	14:00	0	0	0	0	75	150	1000	1500	20	4	
July 30, 2002	12:30	0	0	0	0	85	174	500	1000	22	34	
August 9, 2002	14:15	0	0	0	0	70	179	500	1100	25	30	
August 16, 2002	12:30	0	0	0	0	90	182					
August 23, 2002	16:00	0	0	0	0	85	172	420	1100	27	26	
August 27, 2002	12:20	0	0	0	0	70						
September 11, 2002	10:00	0	0	0	0	60	148					
September 12, 2002	14:00	0	0	0	0	55	141	140	1200	30	28	
October 4, 2002	8:30	0	0	0	0	55	150					
October 6, 2002	12:00	0	0	0	0	60	150					
October 14, 2002	8:30	0	0	0	0	49	138					
October 25, 2002	15:30	0	0	0	0	49	138					
October 28, 2002	16:30	0	0	0	0	50	140					
November 12, 2002	13:30	0	0	0	0	60	138					
December 2, 2002	13:30	0	0	0	0	30	124					
December 13, 2002	15:00	0	0	0	0	35	1220					
December 17, 2002	15:30	0	0	0	0	40	128					
December 27, 2002	15:45	0	0	0	0	35	122	450	1150	32	28	
December 31, 2002	15:30	0	0	0	0	40	136					
January 10, 2003	14:00	0	0	0	0	10	116					
January 14, 2003	9:30	0	0	0	0	35	118					
January 20, 2003	10:30	0	0	0	0	35	118					
January 26, 2003	10:30	0	0	0	0	30	120					
January 28, 2003	12:45	0	0	0	0	30	120					
February 7, 2003	16:00	0	0	0	0	30	120					
February 10, 2003	11:30	0	0	0	0	35	128					
February 21, 2003	12:00	0	0	0	0	40						
February 26, 2003	13:00	0	0	0	0							
March 17, 2003	13:30	0	0	0	0	50	120	500	1250	9	40	
March 18, 2003	13:30	0	0	0	0	55	120	500	1250	9	40	
March 24, 2003	11:00	0	0	0	0	55	120	500	1250	9	40	
March 25, 2003	13:30	0	0	0	0	50	135	500	1250	9	40	
March 26, 2003	15:00	0	0	0	0	39	120					
March 31, 2003	12:30	0	0	0	0	45	122	500	1250	9	40	
April 4, 2003	17:30	0	0	0	0	45		300	>6000	5	64	
April 7, 2003	12:20	0	0	0	0							
April 8, 2003	12:00	0	0	0	0							
April 9, 2003	14:00	0	0	0	0							
April 11, 2003	17:00	0	0	0	0	60	135	490	1400	9.5	40	
April 14, 2003	17:30	0	0	0	0	50	140					
April 17, 2003	16:00	0	0	0	0	60	140					
April 25, 2003	13:55	0	0	0	0	50	125					
April 28, 2003	7:30	0	0	0	0	50						

System Down, re-started

System Down, re-started  
System Down, re-started

System Down, re-started

System down, would not re-start  
Motor replaced, system re-started

System Down, re-started

system down  
system down, excessive back-pressure  
system diagnosed and left off-line  
system off for repairs  
system piping repaired and re-started

TABLE III  
SUB-SLAB VENTING SYSTEM MONITORING DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

Monitoring Date	Time	Influent Concentrations PMD (ppm)	Influent Concentrations H2A GC (ug/L)	Effluent Concentrations Effluent - 1 (ppm)	Effluent Concentrations Effluent - 2 (ppm)	Outdoor Temp	Outlet Vapor Temp	Flow Velocity (ft/min) Influent	Flow Velocity (ft/min) Effluent	System Vacuum and Pressure ("water) Blower Knockout Drum	Vacuum at Extraction Points ("water) EP-1 EP-2 EP-3 EP-4 EP-5	
May 5, 2003	18:30	0	0	0	0	45	130	490	1400	9.5	5	40
May 14, 2003	12:00	0	0	0	0	60	135			9.5	5	40
May 21, 2003	15:00	0	0	0	0	55	140			10	5	40
May 26, 2003	14:20	0	0	0	0	65	145	490	1400	10	5	40
June 5, 2003	11:30	0	0	0	0	70	150			10	5	40
June 9, 2003	18:00	0	0	0	0	65	140	490	1450	10	5	40
June 12, 2003	17:20	0	0	0	0	75	135			10	5	40
June 19, 2003	15:30	0	0	0	0	85	150	490	1400	11	5	35
June 25, 2003	10:45	0	0	0	0	75	160	490	1400	10	5	40
June 30, 2003	7:00	0	0	0	0	90	75	490	1400	10	5	40
July 7, 2003	10:00	0	0	0	0	90	102	490	1400	10	5	40
July 15, 2003	14:15	0	0	0	0	90	100	490	1400	10	5	40
July 17, 2003	14:15	0	0	0	0	90	100	490	1400	10	5	40
July 18, 2003	17:00	0	0	0	0	85	150	490	1400	10	5	40
July 21, 2003	18:00	0	0	0	0	90	160	490	1400	10	5	40
July 23, 2003	17:30	0	0	0	0	90	143	490	1400	10	5	40
July 25, 2003	18:30	0	0	0	0	90	160	490	1400	10	5	40
July 31, 2003	18:30	0	0	0	0	90	155	490	1400	10	5	40
August 5, 2003	14:10	0	0	0	0	90	155	490	1400	10	5	40
August 14, 2003	18:30	0	0	0	0	80	155	490	1400	10	5	40
August 22, 2003	14:00	0	0	0	0	80	155	490	1400	10	5	40
August 30, 2003	7:30	0	0	0	0	75	154	490	1400	10	5	42
September 10, 2003	13:00	0	0	0	0	75	140	490	1400	10	5	42
September 19, 2003	17:30	0	0	0	0	75	145	490	1400	10	5	42
September 26, 2003	17:00	0	0	0	0	70	134	490	1400	9.5	5	42
September 30, 2003	10:05	0	0	0	0	60	137	500	1400	9	5	42
October 6, 2003	14:00	0	0	0	0	50	120	500	1500	9	4	43
October 17, 2003	8:30	0	0	0	0	60	132	375	1400	9	4	41
October 21, 2003	14:00	0	0	0	0	60	126	450	1400	9.5	4	42
October 28, 2003	15:00	0	0	0	0	50	125	400	1500	9	4	44
November 6, 2003	17:00	0	0	0	0	45	117	490	1500	9.5	5	44
November 10, 2003	13:45	0	0	0	0	40	108	510	1500	9	3	42
November 17, 2003	19:00	0	0	0	0	50	110	500	1500	9	2	44
November 26, 2003	12:00	0	0	0	0	50	106	500	1500	9	2	44
November 30, 2003	8:50	0	0	0	0	30	104	500	1500	10	4	44
December 4, 2003	14:00	0	0	0	0	35	106	490	1500	9	3	44
December 11, 2003	13:40	0	0	0	0	30	87	400	1450	9.5	2.5	44
December 18, 2003	10:15	0	0	0	0	5	94	400	1500	10	2.5	44
December 24, 2003	16:00	0	0	0	0	30	96	450	1500	10	2	44
January 8, 2004	11:15	0	0	0	0	25	90	450	1500	10	2	44
January 22, 2004	10:00	0	0	0	0	30	108	400	1500	10	2	44
January 27, 2004	18:15	0	0	0	0	40	110	475	1500	10	2	44
February 3, 2004	7:50	0	0	0	0	40	108	450	1500	10.5	2	42
February 12, 2004	10:00	0	0	0	0	30	110	410	1500	10.5	2	42
February 19, 2004	18:30	0	0	0	0	50	98	500	1550	11	2	42
February 24, 2004	8:30	0	0	0	0	50	98	500	1500	10	4	40
March 2, 2004	7:30	0	0	0	0	50	96	475	1500	10	2	40
March 12, 2004	5:50	0	0	0	0	50	65	400	1575	11	2	40
March 19, 2004	18:00	0	0	0	0	70	98	400	1575	11	2	40
March 23, 2004	5:45	0	0	0	0	60	98			11	2	40
March 31, 2004	5:15	0	0	0	0	80	140			11	2	40
April 8, 2004	5:50	0	0	0	0							
April 16, 2004	18:15	0	0	0	0							
April 21, 2004	9:30	0	14	0	0							
May 7, 2004	8:00	0	0	0	0	50	65	400	1575	11	2	40
May 14, 2004	18:00	0	0	0	0	70	98	400	1575	11	2	40
May 17, 2004	10:00	0	0	0	0	60	98			11	2	40
May 18, 2004	9:00	0	0	0	0	80	140			11	2	40

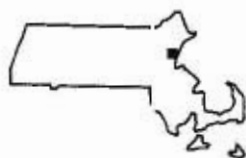
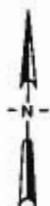
System down, re-started. Styrene was detected at 4 ug/L in the injection blank during GC analysis of effluent. System down, re-started. Changed air filter and fluids. System down, re-started. Schedule electrician to conduct diagnostic of system. System down, re-started.

TABLE III  
SUB-SLAB VENTING SYSTEM MONITORING DATA  
120 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

Monitoring Date	Time	Influent Concentrations PbD (ppm)	Influent Concentrations HMA GC (ug/L)	Effluent Concentrations Effluent - 1 (ppm)	Effluent - 2 (ppm)	Outdoor Temp	Outlet Vapor Temp	Flow Velocity (ft/min) Influent	Flow Velocity (ft/min) Effluent	System Vacuum and Pressure Blower Knockout Drum	Discharge	Vacuum at Extraction Points (in. water) EP-1 EP-2 EP-3 EP-4 EP-5	
May 10, 2004	8:15	0	0	0	0	60	140	300	1200	11	2	40	Electrician on site. System problems due to over heating. Included heat air vent adjacent to blower.
May 20, 2004	11:30	0	0	0	0	50	123	250	1100	11.5	2	40	
May 28, 2004	11:00	0	0	0	0	50	123			11.5	4	39	
June 4, 2004	17:15	0	0	0	0	50	130			11.5	6	40	
June 6, 2004	17:20	0	0	0	0	50	142	375	1200	11	5	39	System down, restarted.
June 10, 2004	16:45	0	0	0	0	50	130	375	1200	11	5	39	
June 17, 2004	14:00	0	0	0	0	50	132	400	1200	11	5	40	
June 21, 2004	5:00	0	0	0	0	50	132	400	1200	11	5	40	
June 28, 2004	12:30	0	0	0	0	50	144	400	1200	11	5	40	
July 8, 2004	8:45	0	0	0	0	50	140	425	1200	11	5	40	
July 16, 2004	5:15	0	0	0	0	70	140	400	1200	11	5	40	
July 23, 2004	5:00	0	0	0	0	70	116	475	1250	11.5	5	40	
July 30, 2004	10:00	0	0	0	0	60	132	500	1250	11.5	5	40	
August 3, 2004	5:00	0	0	0	0	60	140	500	1250	11.5	5	40	
August 10, 2004	18:15	0	0	0	0	60	120	500	1250	11.5	5	38	System down, restarted. Vent fan installed in trailer.
August 19, 2004	8:00	0	0	0	0	60	120	500	1250	11.5	5	38	
August 26, 2004	5:45	0	0	0	0	70	114	350	1250	12	5	38	System down, restarted.
August 31, 2004	11:20	0	0	0	0	90	132	350	1250	11.5	5	40	
September 10, 2004	8:15	0	0	0	0	60	122	325	1300	12	5	40	
September 14, 2004	13:10	0	0	0	0	60	122	375	1250	11.5	5	40	
September 23, 2004	3:30	0	0	0	0	60	122	375	1250	11	5	40	
September 28, 2004	18:30	0	0	0	0	60	143	350	1250	11	5	40	
October 7, 2004	5:45	0	0	0	0	50	110	500	1250	11	5	41	
October 14, 2004	6:20	0	0	0	0	40	98	300	1250	11	5	42	
October 21, 2004	8:00	0	0	0	0	40	98	300	1250	11	5	40	
October 27, 2004	18:00	0	0	0	0	70	112	300	1250	11	5	40	
November 4, 2004	9:15	0	0	0	0	50	98	475	1250	11	5	42	
November 11, 2004	8:00	0	0	0	0	40	98	325	1250	11	5	41	
November 15, 2004	10:00	0	0	0	0	40	100	475	1250	11	5	41	
November 26, 2004	8:00	0	0	0	0	50	100	450	1250	11	5	41	
November 30, 2004	15:30	0	0	0	0	40	85	400	1250	11	4.5	41	
December 6, 2004	11:40	0	0	0	0	20	85	400	1250	11	4	42	
December 18, 2004	8:00	0	0	0	0	10	78	400	1250	11	4	41	
December 20, 2004	14:45	0	0	0	0	30	84	400	1250	11	4	41	
December 28, 2004	17:45	0	0	0	0	20	86	300	1250	11	4	41	
January 7, 2005	5:30	0	0	0	0	30	96	400	1250	11	4	42	
January 13, 2005	5:15	0	0	0	0	10	78	400	1250	11	4	41	
January 20, 2005	6:20	0	0	0	0	10	78	400	1250	11	4	41	
January 25, 2005	12:15	0	0	0	0	20	90	-	-	9	3	37	System off, restarted. No access to inlet velocity ports due to large snow bank. System off, restarted. No access to inlet velocity ports due to large snow bank. No access to inlet velocity ports due to large snow bank. System off, restarted. No access to inlet velocity ports due to large snow bank.
February 2, 2005	14:30	0	0	0	0	30	88	400	-	5	5	41	
February 7, 2005	11:20	0	0	0	0	40	96	400	-	9	5	40	
February 17, 2005	5:15	0	0	0	0	20	86	400	-	5	5	40	
February 24, 2005	11:45	0	0	0	0	30	85	400	1250	9	5	42	
February 28, 2005	5:15	0	0	0	0	20	78	350	1200	9.5	4.5	42	
March 8, 2005	7:45	0	0	0	0	10	70	-	-	10	5	41	
March 15, 2005	14:30	0	0	0	0	40	100	350	1200	11	5	42	
March 21, 2005	5:10	0	0	0	0	30	82	350	1200	11	5	42	



SITE COORDINATES: 42°25'25" N 71°04'27" W



U.S.G.S. QUADRANGLE: BOSTON NORTH, MA



UNDERGROUND  
ENGINEERING &  
ENVIRONMENTAL  
SOLUTIONS

FORMER MALDEN MGP SITE, PARCEL B  
129 COMMERCIAL STREET  
MALDEN, MASSACHUSETTS

PROJECT LOCUS

APPROXIMATE SCALE: 1:25,000

APRIL 2005

06558-711 A226

FIGURE 1



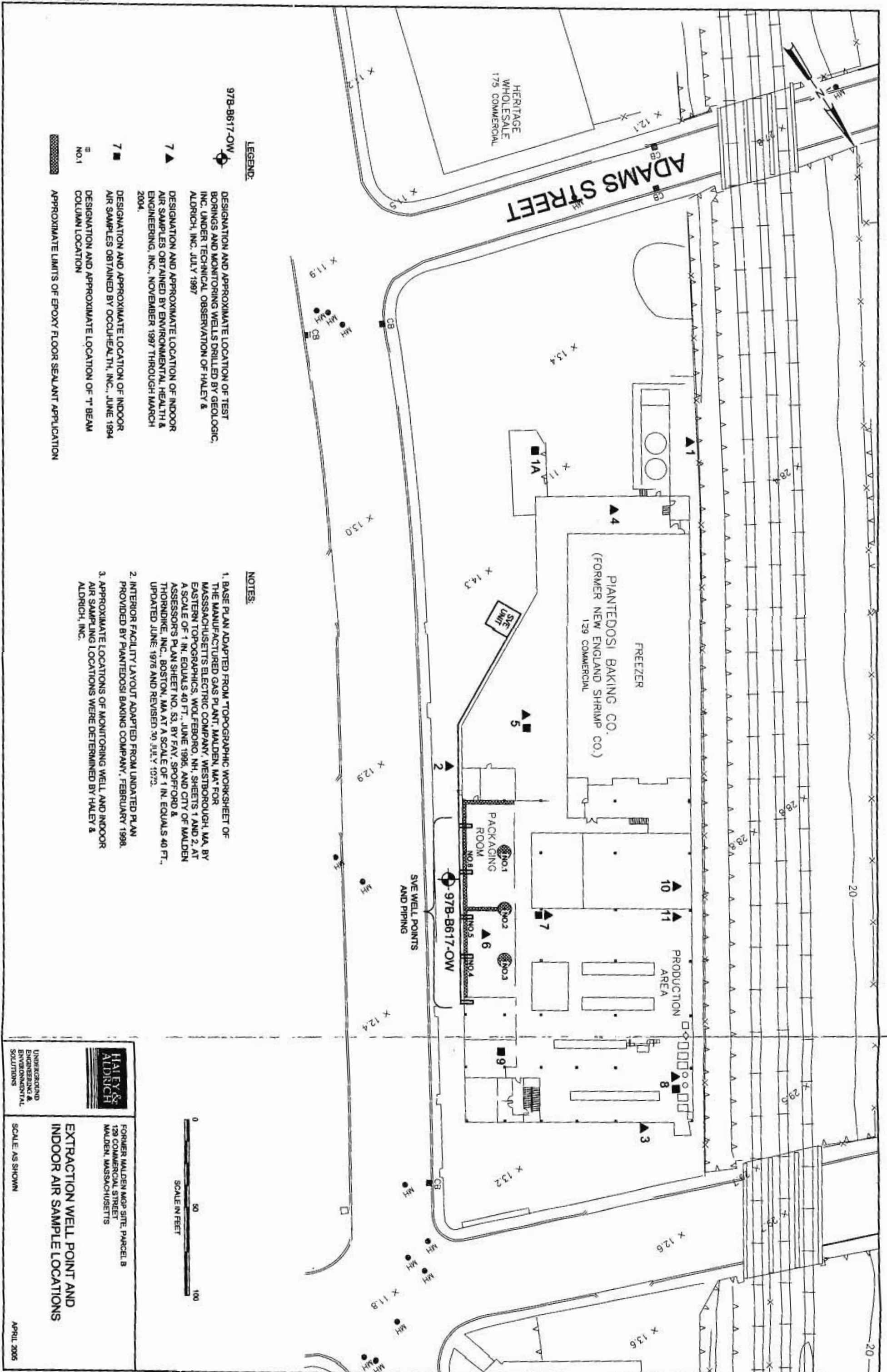


FIGURE 2



Figure 3 PID Measurements of Sub-Slab Vapor Influent

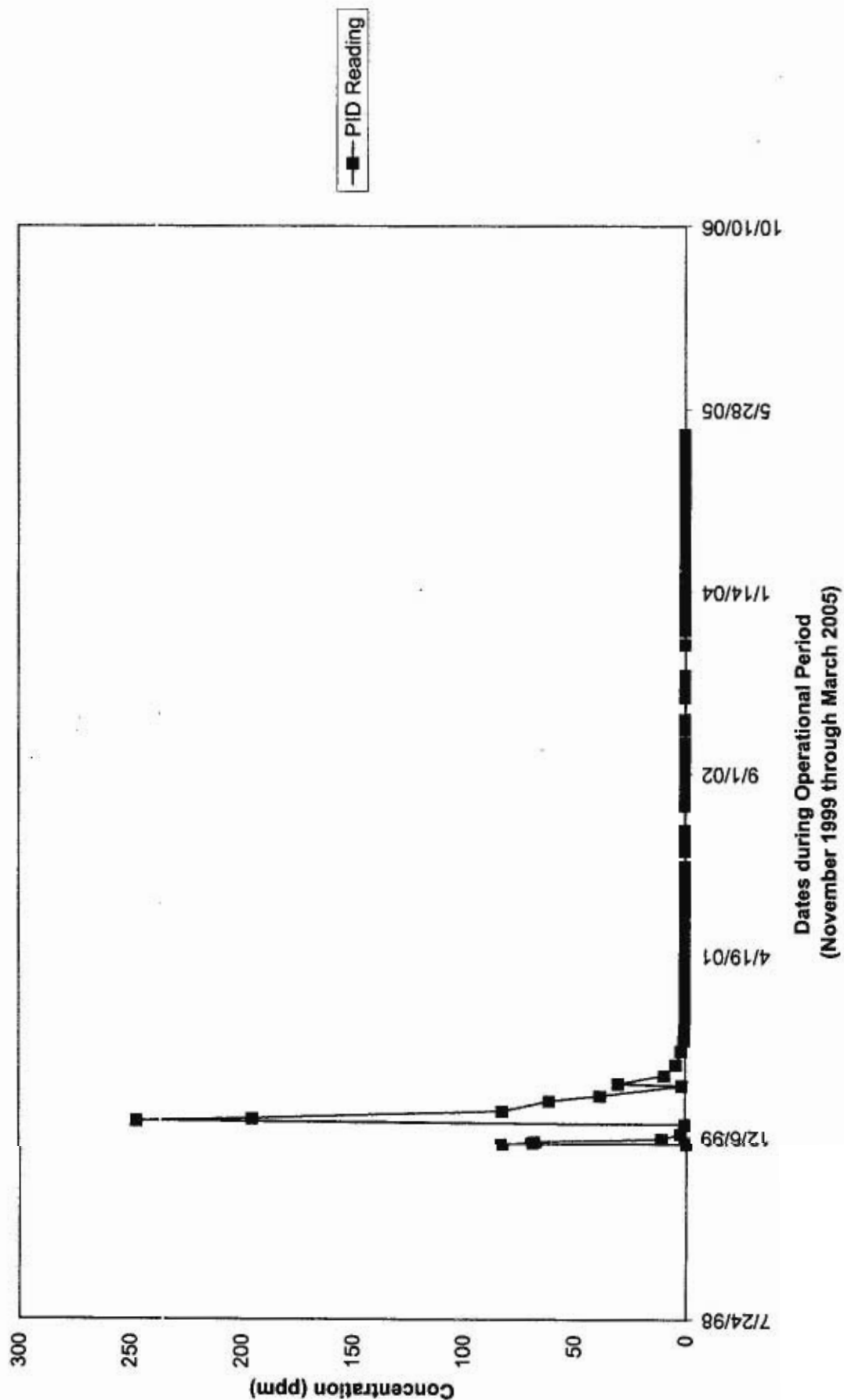
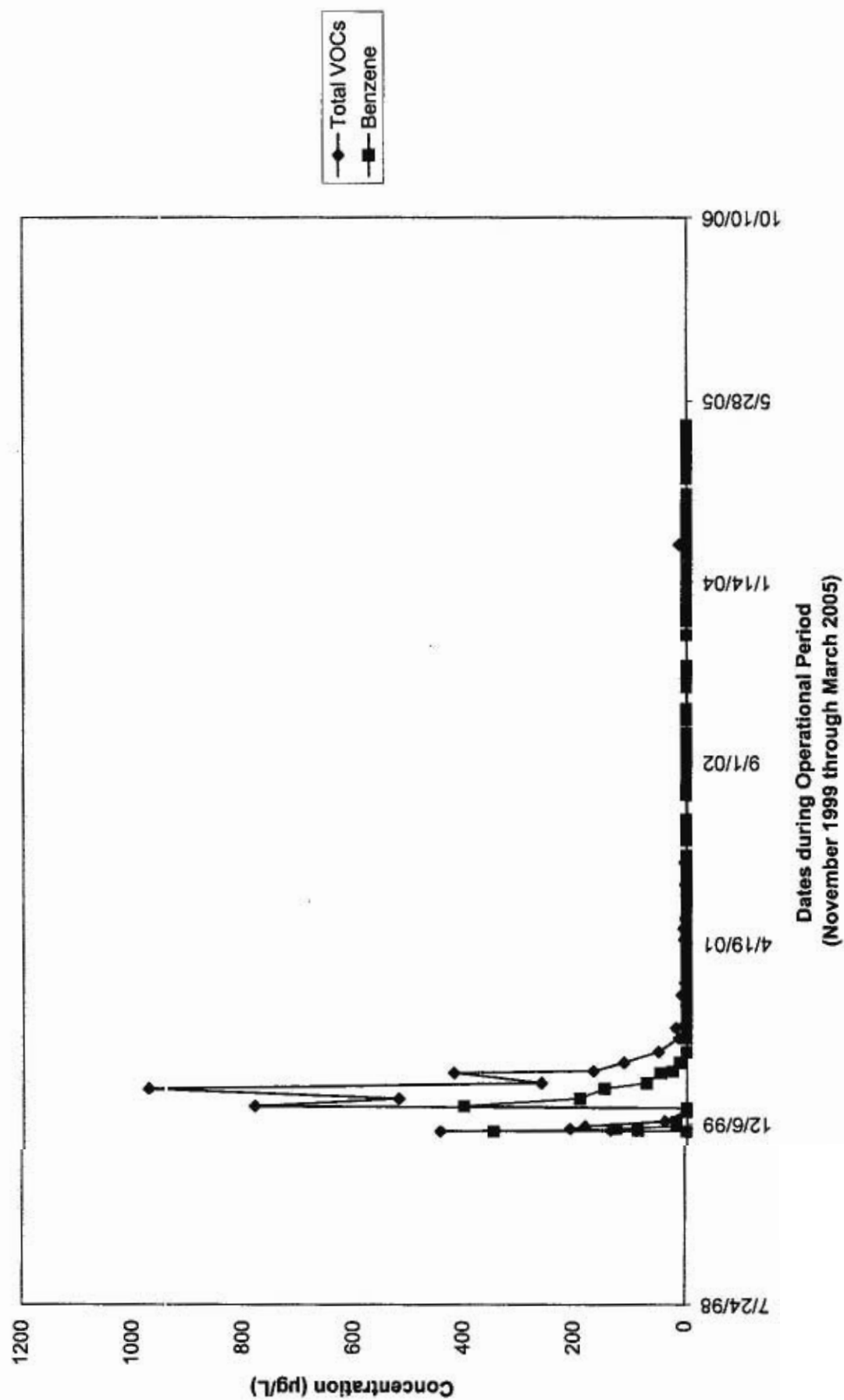


Figure 4 GC Analysis of Sub-Slab Vapor Influent



**APPENDIX A**

**Copy of Form BWSC-106**



Massachusetts Department of Environmental Protection  
Bureau of Waste Site Cleanup

BWSC106

RELEASE ABATEMENT MEASURE (RAM)  
TRANSMITTAL FORM

Release Tracking Number

3 - 0362

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

A. SITE LOCATION:

1. Site Name/Location Aid: Former Manufactured Gas Plant (MGP) Site

2. Street Address: 129 Commercial Street

3. City/Town: Malden

4. ZIP Code: 02148-0000

☒ 5. Check here if a Tier Classification Submittal has been provided to DEP for this disposal site.

☐ a. Tier IA ☒ b. Tier IB ☐ c. Tier IC ☐ d. Tier II

6. If a Tier I Permit has been issued, provide Permit Number: 7378

B. THIS FORM IS BEING USED TO: (check all that apply)

1. List Submittal Date of Initial RAM Written Plan (if previously submitted): 07/02/1998  
(mm/dd/yyyy)

☐ 2. Submit an Initial Release Abatement Measure (RAM) Plan.

☐ a. Check here if this RAM Plan received previous oral approval from DEP as a continuation of a Limited Removal Action (LRA).

b. List Date of Oral Approval: \_\_\_\_\_  
(mm/dd/yyyy)

☐ 3. Submit a Modified RAM Plan of a previously submitted written RAM Plan.

☒ 4. Submit a RAM Status Report.

☐ 5. Submit a RAM Completion Statement.

☐ 6. Submit a Revised RAM Completion Statement.

7. Provide Additional RTNs:

☐ a. Check here if this RAM Submittal covers additional Release Tracking Numbers (RTNs). RTNs that have been previously linked to a Primary Tier Classified RTN do not need to be listed here. This section is intended to allow a RAM to cover more than one unclassified RTN and not show permanent linkage to a Primary Tier Classified RTN.

b. Provide the additional Release Tracking Number(s) covered by this RAM Submittal.

☐ -  ☐ -

RECEIVED

APR 11 2005

DEP

NORTHEAST REGIONAL OFFICE

(All sections of this transmittal form must be filled out unless otherwise noted above)



Massachusetts Department of Environmental Protection  
Bureau of Waste Site Cleanup

BWSC106

RELEASE ABATEMENT MEASURE (RAM)  
TRANSMITTAL FORM

Release Tracking Number

3 - 0362

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

C. RELEASE OR THREAT OF RELEASE CONDITIONS THAT WARRANT RAM:

1. Identify Media Impacted and Receptors Affected: (check all that apply)

- ☒ a. Air ☐ b. Basement ☐ c. Critical Exposure Pathway ☒ d. Groundwater ☐ e. Residence  
☐ f. Paved Surface ☐ g. Private Well ☐ h. Public Water Supply ☐ i. School ☐ j. Sediments  
☒ k. Soil ☐ l. Storm Drain ☐ m. Surface Water ☐ n. Unknown ☐ o. Wetland ☐ p. Zone 2  
☐ q. Others Specify: \_\_\_\_\_

2. Identify all sources of the Release or Threat of Release, if known: (check all that apply)

- ☐ a. Above-ground Storage Tank (AST) ☐ b. Boat/Vessel ☐ c. Drums ☐ d. Fuel Tank  
☐ e. Pipe/Hose/Line ☐ f. Tanker Truck ☐ g. Transformer ☐ h. Under-ground Storage Tank (UST)  
☐ i. Vehicle ☒ j. Others Specify: Disposal associated with former MGP operations

3. Identify Oils and Hazardous Materials Released: (check all that apply)

- ☐ a. Oils ☐ b. Chlorinated Solvents ☐ c. Heavy Metals  
☒ d. Others Specify: MGP contaminants: VOCs, PAHs, Cyanide

D. DESCRIPTION OF RESPONSE ACTIONS: (check all that apply, for volumes list cumulative amounts)

- |  |   |
|--|---|
| <input type="checkbox"/> 1. Assessment and/or Monitoring Only                | <input type="checkbox"/> 2. Temporary Covers or Caps                        |
| <input type="checkbox"/> 3. Deployment of Absorbent or Containment Materials | <input type="checkbox"/> 4. Temporary Water Supplies                        |
| <input checked="" type="checkbox"/> 5. Structure Venting System              | <input type="checkbox"/> 6. Temporary Evacuation or Relocation of Residents |
| <input type="checkbox"/> 7. Product or NAPL Recovery                         | <input type="checkbox"/> 8. Fencing and Sign Posting                        |
| <input type="checkbox"/> 9. Groundwater Treatment Systems                    | <input type="checkbox"/> 10. Soil Vapor Extraction                          |
| <input type="checkbox"/> 11. Bioremediation                                  | <input type="checkbox"/> 12. Air Sparging                                   |
| <input type="checkbox"/> 13. Excavation of Contaminated Soils                |   |

☐ a. Re-use, Recycling or Treatment ☐ i. On Site Estimated volume in cubic yards \_\_\_\_\_

☐ ii. Off Site Estimated volume in cubic yards \_\_\_\_\_

lia. Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_ State: \_\_\_\_\_

iib. Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_ State: \_\_\_\_\_

iii. Describe: \_\_\_\_\_



Massachusetts Department of Environmental Protection  
Bureau of Waste Site Cleanup

BWSC106

RELEASE ABATEMENT MEASURE (RAM)  
TRANSMITTAL FORM

Release Tracking Number

3 - 0362

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

D. DESCRIPTION OF RESPONSE ACTIONS (cont): (check all that apply, for volumes list cumulative amounts)

☐ b. Store

☐ i. On Site Estimated volume in cubic yards \_\_\_\_\_

☐ ii. Off Site Estimated volume in cubic yards \_\_\_\_\_

ii. Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_ State: \_\_\_\_\_

ii. Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_ State: \_\_\_\_\_

☐ c. Landfill

☐ i. Cover Estimated volume in cubic yards \_\_\_\_\_

Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_ State: \_\_\_\_\_

☐ ii. Disposal Estimated volume in cubic yards \_\_\_\_\_

Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_ State: \_\_\_\_\_

☐ 14. Removal of Drums, Tanks or Containers:

a. Describe Quantity and Amount: \_\_\_\_\_

b. Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_ State: \_\_\_\_\_

c. Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_ State: \_\_\_\_\_

☒ 15. Removal of Other Contaminated Media:

a. Specify Type and Volume: To date: 47 55-gal drums (approx 7755 LBS) spent activated carbon

b. Receiving Facility: Clean Harbors Town: Bristol State: CT

c. Receiving Facility: Clean Harbors Town: Braintree State: MA

☐ 16. Other Response Actions:

Describe: \_\_\_\_\_

☐ 17. Use of Innovative Technologies:

Describe: \_\_\_\_\_



Massachusetts Department of Environmental Protection  
Bureau of Waste Site Cleanup

BWSC106

RELEASE ABATEMENT MEASURE (RAM)  
TRANSMITTAL FORM

Release Tracking Number

3 - 0362

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

E. LSP SIGNATURE AND STAMP :

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief,

> if Section B of this form indicates that a **Release Abatement Measure Plan** is being submitted, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B of this form indicates that a **Release Abatement Measure Status Report** is being submitted, the response action(s) that is (are) the subject of this submittal (i) is (are) being implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B of this form indicates that a **Release Abatement Measure Completion Statement** is being submitted, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP #: 2242

2. First Name: Richard

3. Last Name: Standish

4. Telephone: (860) 290-3131

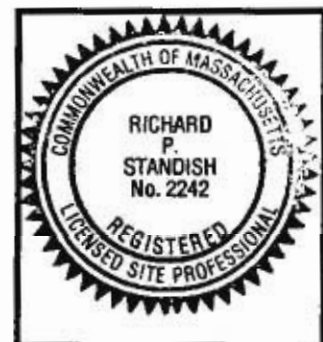
5. Ext.: \_\_\_\_\_ 6. FAX: (860) 282-9500

7. Signature: Richard P. Standish

8. Date: 04/07/2005

(mm/dd/yyyy)

9. LSP Stamp:







Massachusetts Department of Environmental Protection  
Bureau of Waste Site Cleanup

BWSC106

RELEASE ABATEMENT MEASURE (RAM)  
TRANSMITTAL FORM

Release Tracking Number

3 - 0362

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

F. PERSON UNDERTAKING RAM:

1. Check all that apply: ☐ a. change in contact name ☐ b. change of address ☐ c. change in the person undertaking response actions
2. Name of Organization: Massachusetts Electric Company
3. Contact First Name: Michele 4. Last Name: Leone
5. Street: 25 Research Drive 6. Title: \_\_\_\_\_
7. City/Town: Westborough 8. State: MA 9. ZIP Code: 01582-0000
10. Telephone: (508) 389-4293 11. Ext.: \_\_\_\_\_ 12. FAX: (508) 389-4299

G. RELATIONSHIP TO RELEASE OR THREAT OF RELEASE OF PERSON UNDERTAKING RAM:

- ☒ 1. RP or PRP ☐ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter  
☒ e. Other RP (or PRP) Specify: Party of Interest
- ☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)
- ☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))
- ☐ 4. Any Other Person Undertaking RAM Specify Relationship: \_\_\_\_\_

H. REQUIRED ATTACHMENT AND SUBMITTALS:

- ☐ 1. Check here if any Remediation Waste, generated as a result of this RAM, will be stored, treated, managed, recycled or reused at the site following submission of the RAM Completion Statement. You must submit a Phase IV Remedy Implementation Plan along with the appropriate transmittal form (BWSC108).
- ☒ 2. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.
- ☒ 3. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the implementation of a Release Abatement Measure.
- ☐ 4. Check here if any non-updatable information provided on this form is incorrect, e.g. Release Address/Location Aid. Send corrections to the DEP Regional Office.
- ☐ 5. If a RAM Compliance Fee is required for this RAM, check here to certify that a RAM Compliance Fee was submitted to DEP, P. O. Box 4062, Boston, MA 02211.
- ☒ 6. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.



Massachusetts Department of Environmental Protection  
Bureau of Waste Site Cleanup

BWSC106

RELEASE ABATEMENT MEASURE (RAM)  
TRANSMITTAL FORM

Release Tracking Number

3 - 3757

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

I. CERTIFICATION OF PERSON UNDERTAKING RAM:

1. I, Michael Lotti, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment for willfully submitting false, inaccurate, or incomplete information.

2. By: [Signature]

Signature

3. Title: Environmental Engineer

4. For: Massachusetts Electric Company

(Name of person or entity recorded in Section F)

5. Date: 04/04/2005

(mm/dd/yyyy)

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section F.

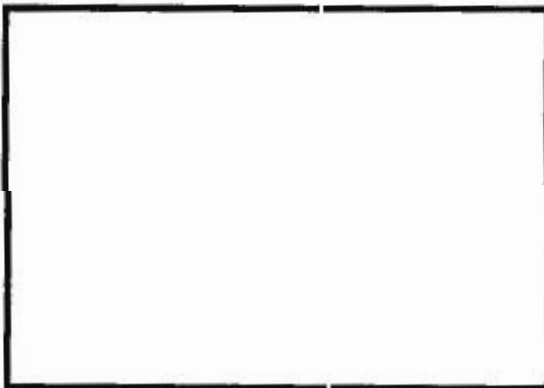
7. Street: \_\_\_\_\_

8. City/Town: \_\_\_\_\_ 9. State: \_\_\_\_\_ 10. ZIP Code: \_\_\_\_\_

11. Telephone: \_\_\_\_\_ 12. Ext.: \_\_\_\_\_ 13. FAX: \_\_\_\_\_

YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO \$10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.

Date Stamp (DEP USE ONLY:)



## **APPENDIX B**

### **Indoor Air Quality Analytical Data**

## LABORATORY REPORT

Client:	HALEY & ALDRICH, INC.	Date of Report:	11/15/04
Address:	465 Medford Street, Suite 2200 Boston, MA 02129	Date Received:	10/29/04
Contact:	Ms. Nancy Reardon	CAS Project No:	P2402344
		Purchase Order:	Verbal
Client Project ID:	129 Commercial Street, Malden/06558-709		

Eight (8) Stainless Steel Summa Canisters labeled:

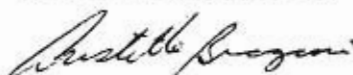
"SITE 4"	"SITE 5"	"SITE 6"	"SITE 7"
"SITE 7 (DUP)"	"SITE 8"	"SITE 10"	"SITE 2"

The samples were received at the laboratory under chain of custody on October 29, 2004. The samples were received intact. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time that they were received at the laboratory.

### Volatile Organic Compound Analysis

The samples were analyzed by combined gas chromatography/mass spectrometry (GC/MS) for selected volatile organic compounds. The analyses were performed according to the methodology outlined in EPA Method TO-15. The analyses were performed by gas chromatography/mass spectrometry, utilizing a direct cryogenic trapping technique. The analytical system used was comprised of a Hewlett Packard Model 5972 GC/MS/DS interfaced to a Tekmar AutoCan Elite whole air inlet system/cryogenic concentrator. A 100% Dimethylpolysiloxane capillary column (RT<sub>x</sub>-1, Restek Corporation, Bellefonte, PA) was used to achieve chromatographic separation.

Reviewed and Approved:



Aristotle Bragasin  
Analytical Chemist  
Air Quality Laboratory

Reviewed and Approved:



Chris Parnell  
GCMS-VOA Team Leader  
Air Quality Laboratory

CAS Project No: P2402344

The results of analyses are given on the attached data sheets. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: **Haley & Aldrich, Inc.**  
Client Sample ID: **SITE 4**  
Client Project ID: **129 Commercial Street, Malden/06558-709**

CAS Project ID: P2402344  
CAS Sample ID: P2402344-001

Test Code: EPA TO-15  
Instrument ID: Tekmar AUTOCAN/HP5972/HP5890 II+/MS2  
Analyst: Aristotle Bragasin  
Sampling Media: Summa Canister  
Test Notes:  
Container ID: AC00153

Date Collected: 10/26/04  
Date Received: 10/29/04  
Date(s) Analyzed: 11/2/04  
Volume(s) Analyzed: 1.00 Liter(s)

Pi 1 = -3.7      Pf 1 = 3.5

D.F. = 1.65

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	ND	1.7	ND	0.52	
108-88-3	Toluene	6.7	1.7	1.8	0.44	
100-41-4	Ethylbenzene	ND	1.7	ND	0.38	
136777-61-2	<i>m,p</i> -Xylenes	3.2	1.7	0.74	0.38	
100-42-5	Styrene	ND	1.7	ND	0.39	
95-47-6	<i>o</i> -Xylene	ND	1.7	ND	0.38	
91-20-3	Naphthalene	ND	1.7	ND	0.31	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: **Haley & Aldrich, Inc.**  
Client Sample ID: **SITE 5**  
Client Project ID: **129 Commercial Street, Malden/06558-709**

CAS Project ID: P2402344  
CAS Sample ID: P2402344-002

Test Code: EPA TO-15  
Instrument ID: Tekmar AUTOCAN/HP5972/HP5890 II+/MS2  
Analyst: Aristotle Bragasin  
Sampling Media: Summa Canister  
Test Notes:  
Container ID: AC00485

Date Collected: 10/26/04  
Date Received: 10/29/04  
Date(s) Analyzed: 11/2/04  
Volume(s) Analyzed: 1.00 Liter(s)

Pi 1 = -2.8 Pf 1 = 3.5

D.F. = 1.53

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	ND	1.5	ND	0.48	
108-88-3	Toluene	9.0	1.5	2.4	0.41	
100-41-4	Ethylbenzene	ND	1.5	ND	0.35	
136777-61-2	<i>m,p</i> -Xylenes	4.4	1.5	1.0	0.35	
100-42-5	Styrene	ND	1.5	ND	0.36	
95-47-6	<i>o</i> -Xylene	ND	1.5	ND	0.35	
91-20-3	Naphthalene	ND	1.5	ND	0.29	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.



## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: **Haley & Aldrich, Inc.**  
Client Sample ID: **SITE 6**  
Client Project ID: **129 Commercial Street, Malden/06558-709**

CAS Project ID: P2402344  
CAS Sample ID: P2402344-003

Test Code: **EPA TO-15**  
Instrument ID: **Tekmar AUTOCAN/HP5972/HP5890 II+/MS2**  
Analyst: **Aristotle Bragasin**  
Sampling Media: **Summa Canister**  
Test Notes:  
Container ID: **AC00555**

Date Collected: 10/26/04  
Date Received: 10/29/04  
Date(s) Analyzed: 11/2/04  
Volume(s) Analyzed: **1.00 Liter(s)**

Pi 1 = -4.5

Pf 1 = 3.5

D.F. = 1.78

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-42-2	Benzene	ND	1.8	ND	0.56	
108-88-3	Toluene	13	1.8	3.3	0.47	
100-41-4	Ethylbenzene	ND	1.8	ND	0.41	
136777-61-2	<i>m,p</i> -Xylenes	3.1	1.8	0.71	0.41	
100-42-5	Styrene	ND	1.8	ND	0.42	
95-47-6	<i>o</i> -Xylene	ND	1.8	ND	0.41	
91-20-3	Naphthalene	ND	1.8	ND	0.34	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: **Haley & Aldrich, Inc.**  
Client Sample ID: **SITE 7**  
Client Project ID: **129 Commercial Street, Malden/06558-709**

CAS Project ID: P2402344  
CAS Sample ID: P2402344-004

Test Code: EPA TO-15  
Instrument ID: Tekmar AUTOCAN/HP5972/HP5890 II+/MS2  
Analyst: Aristotle Bragasin  
Sampling Media: Summa Canister  
Test Notes:  
Container ID: AC00541

Date Collected: 10/26/04  
Date Received: 10/29/04  
Date(s) Analyzed: 11/2/04  
Volume(s) Analyzed: 1.00 Liter(s)

Pi 1 = -3.1

Pf 1 = 3.5

D.F. = 1.57

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	1.7	1.6	0.53	0.49	
108-88-3	Toluene	6.9	1.6	1.8	0.42	
100-41-4	Ethylbenzene	ND	1.6	ND	0.36	
136777-61-2	<i>m,p</i> -Xylenes	4.0	1.6	0.93	0.36	
100-42-5	Styrene	ND	1.6	ND	0.37	
95-47-6	<i>o</i> -Xylene	ND	1.6	ND	0.36	
91-20-3	Naphthalene	ND	1.6	ND	0.30	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: **Haley & Aldrich, Inc.**  
Client Sample ID: **SITE 7 (DUP)**  
Client Project ID: **129 Commercial Street, Malden/06558-709**

CAS Project ID: P2402344  
CAS Sample ID: P2402344-005

Test Code: EPA TO-15  
Instrument ID: Tekmar AUTOCAN/EIP5972/HP5890 II+/MS2  
Analyst: Aristotle Bragasin  
Sampling Media: Summa Canister  
Test Notes:  
Container ID: AC00386

Date Collected: 10/26/04  
Date Received: 10/29/04  
Date(s) Analyzed: 11/2/04  
Volume(s) Analyzed: 1.00 Liter(s)

Pi 1 = 0.2      Pf 1 = 3.5

D.F. = 1.22

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	1.7	1.2	0.52	0.38	
108-88-3	Toluene	4.7	1.2	1.3	0.32	
100-41-4	Ethylbenzene	1.3	1.2	0.31	0.28	
136777-61-2	<i>m,p</i> -Xylenes	1.9	1.2	0.45	0.28	
100-42-5	Styrene	7.1	1.2	1.7	0.29	
95-47-6	<i>o</i> -Xylene	ND	1.2	ND	0.28	
91-20-3	Naphthalene	ND	1.2	ND	0.23	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: **Haley & Aldrich, Inc.**  
Client Sample ID: **SITE 8**  
Client Project ID: **129 Commercial Street, Malden/06558-709**

CAS Project ID: P2402344  
CAS Sample ID: P2402344-006

Test Code: **EPA TO-15**  
Instrument ID: **Tekmar AUTOCAN/HP5972/HP5890 II+/MS2**  
Analyst: **Aristotle Bragasin**  
Sampling Media: **Summa Canister**  
Test Notes:  
Container ID: **AC00592**

Date Collected: 10/26/04  
Date Received: 10/29/04  
Date(s) Analyzed: 11/2/04  
Volume(s) Analyzed: **1.00 Liter(s)**

Pi 1 = -2.4      Pf 1 = 3.5

D.F. = 1.48

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	ND	1.5	ND	0.46	
108-88-3	Toluene	5.1	1.5	1.3	0.39	
100-41-4	Ethylbenzene	ND	1.5	ND	0.34	
136777-61-2	<i>m,p</i> -Xylenes	2.9	1.5	0.67	0.34	
100-42-5	Styrene	ND	1.5	ND	0.35	
95-47-6	<i>o</i> -Xylene	ND	1.5	ND	0.34	
91-20-3	Naphthalene	ND	1.5	ND	0.28	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: **Haley & Aldrich, Inc.**  
Client Sample ID: **SITE 18 II (18)**  
Client Project ID: **129 Commercial Street, Malden/06558-709**

CAS Project ID: P2402344  
CAS Sample ID: P2402344-007

Test Code: EPA TO-15  
Instrument ID: Tekmar AUTOCAN/HP5972/HP5890 II+/MS2  
Analyst: Aristotle Bragasin  
Sampling Media: Summa Canister  
Test Notes:  
Container ID: AC00404

Date Collected: 10/26/04  
Date Received: 10/29/04  
Date(s) Analyzed: 11/2/04  
Volume(s) Analyzed: 1.00 Liter(s)

Pi 1 = -3.1 Pf 1 = 3.5

D.F. = 1.57

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	1.9	1.6	0.59	0.49	
108-88-3	Toluene	6.6	1.6	1.8	0.42	
100-41-4	Ethylbenzene	ND	1.6	ND	0.36	
136777-61-2	<i>m,p</i> -Xylenes	3.5	1.6	0.80	0.36	
100-42-5	Styrene	ND	1.6	ND	0.37	
95-47-6	<i>o</i> -Xylene	ND	1.6	ND	0.36	
91-20-3	Naphthalene	ND	1.6	ND	0.30	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: **Haley & Aldrich, Inc.**  
Client Sample ID: **SITE 2**  
Client Project ID: **129 Commercial Street, Malden/06558-709**

CAS Project ID: P2402344  
CAS Sample ID: P2402344-008

Test Code: **EPA TO-15**  
Instrument ID: **Tekmar AUTOCAN/HP5972/HP5890 II+/MS2**  
Analyst: **Aristotle Bragasin**  
Sampling Media: **Summa Canister**  
Test Notes:  
Container ID: **AC00281**

Date Collected: 10/26/04  
Date Received: 10/29/04  
Date(s) Analyzed: 11/2/04  
Volume(s) Analyzed: **1.00 Liter(s)**

Pi 1 = -1.9

Pf 1 = 3.6

D.F. = 1.43

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	2.2	1.4	0.69	0.45	
108-88-3	Toluene	6.8	1.4	1.8	0.38	
100-41-4	Ethylbenzene	ND	1.4	ND	0.33	
136777-61-2	<i>m,p</i> -Xylenes	3.6	1.4	0.83	0.33	
100-42-5	Styrene	ND	1.4	ND	0.34	
95-47-6	<i>o</i> -Xylene	ND	1.4	ND	0.33	
91-20-3	Naphthalene	ND	1.4	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Verified By: EWDate: 11/12/04 10

## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: **Haley & Aldrich, Inc.**  
Client Sample ID: **SITE 2**  
Client Project ID: **129 Commercial Street, Malden/06558-709**

CAS Project ID: P2402344  
CAS Sample ID: P2402344-008DUP

Test Code: EPA TO-15  
Instrument ID: Tekmar AUTOCAN/EP5972/HP5890 II+/MS2  
Analyst: Aristotle Bragasin  
Sampling Media: Summa Canister  
Test Notes:  
Container ID: AC00281

Date Collected: 10/26/04  
Date Received: 10/29/04  
Date(s) Analyzed: 11/2/04  
Volume(s) Analyzed: 1.00 Liter(s)

Pi 1 = -1.9

Pf 1 = 3.6

D.F. = 1.43

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	2.2	1.4	0.69	0.45	
108-88-3	Toluene	6.8	1.4	1.8	0.38	
100-41-4	Ethylbenzene	ND	1.4	ND	0.33	
136777-61-2	<i>m,p</i> -Xylenes	3.6	1.4	0.84	0.33	
100-42-5	Styrene	ND	1.4	ND	0.34	
95-47-6	<i>o</i> -Xylene	ND	1.4	ND	0.33	
91-20-3	Naphthalene	ND	1.4	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.



## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: **Haley & Aldrich, Inc.**  
Client Sample ID: **Method Blank**  
Client Project ID: **129 Commercial Street, Malden/06558-709**

CAS Project ID: P2402344  
CAS Sample ID: P041102-MB

Test Code: EPA TO-15  
Instrument ID: Tekmar AUTOCAN/HP5972/HP5890 II+/MS2  
Analyst: Aristotle Bragasin  
Sampling Media: Summa Canister  
Test Notes:

Date Collected: NA  
Date Received: NA  
Date(s) Analyzed: 11/2/04  
Volume(s) Analyzed: 1.00 Liter(s)

D.F. = 1.00

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	ND	1.0	ND	0.31	
108-88-3	Toluene	ND	1.0	ND	0.27	
100-41-4	Ethylbenzene	ND	1.0	ND	0.23	
136777-61-2	<i>m,p</i> -Xylenes	ND	1.0	ND	0.23	
100-42-5	Styrene	ND	1.0	ND	0.23	
95-47-6	<i>o</i> -Xylene	ND	1.0	ND	0.23	
91-20-3	Naphthalene	ND	1.0	ND	0.19	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

**Columbia Analytical Services, Inc.**  
**Sample Acceptance Check Form**

Client: Haley & Aldrich, Inc.

Work order:

P2402344

Project: 129 Commercial Street, Malden/06558-709

Sample(s) received on: 10/29/04

Date opened: 10/29/04

by: SM

*Note:* This form is used for all samples received by CAS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client or as required by the method/SOP.

		<u>Yes</u>	<u>No</u>	<u>N/A</u>
1	Were <b>custody seals</b> on outside of cooler/Box?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Location of seal(s)? _____ Sealing Lid?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Were signature and date included?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Were seals intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Were custody seals on outside of sample container?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Location of seal(s)? _____ Sealing Lid?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Were signature and date included?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Were seals intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Were <b>sample containers</b> properly marked with client sample ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Did <b>sample containers</b> arrive in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Were <b>chain-of-custody</b> papers used and filled out?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Did <b>sample container labels</b> and/or tags agree with custody papers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Was <b>sample volume</b> received adequate for analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Are samples within specified holding times?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Was proper <b>temperature</b> (thermal preservation) of cooler at receipt adhered to?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Cooler Temperature <u>NA</u> °C			
	Blank Temperature <u>NA</u> °C			
9	Is pH (acid) <b>preservation</b> necessary, according to method/SOP or Client specified information?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Is there a client indication that the submitted samples are <b>pH</b> (acid) preserved?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Were <b>VOA vials</b> checked for presence/absence of air bubbles?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Does the client/method/SOP require that the analyst check the sample pH and <u>if necessary</u> alter it?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10	<b>Tubes:</b> Are the tubes capped and intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Do they contain moisture?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11	<b>Badges:</b> Are the badges properly capped and intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Are dual bed badges separated and individually capped and intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Lab Sample ID	Required pH	pH (as received, if required)	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P2402344-001			NA	
P2402344-002			NA	
P2402344-003			NA	
P2402344-004			NA	
P2402344-005			NA	
P2402344-006			NA	
P2402344-007			NA	
P2402344-008			NA	

Explain any discrepancies: (include lab sample ID numbers): \_\_\_\_\_

# Chain of Custody Record Analytical Service Request

**Air Quality Laboratory**  
2665 Park Center Drive, Suite D  
Simi Valley, California 93065  
Phone (805) 526-7161  
Fax (805) 526-7270



Client/Address <b>HALEY + ALDRICH, INC.</b> 465 MEDFORD ST., STE 2200 CHARLESTOWN, MA 02124		Project Name <b>129 COMMERCIAL STREET, MALDEN</b>		CAS Project No. <b>P2402344</b>						
Phone 617 886 7465 Fax 617 886 7765		Project Number <b>06558-704</b>		Cooler / Blank Temp						
Email nreardon@haleyaldrich.com		Sampling Location <b>MALDEN, MA</b>		Expected Turnaround Time 24 Hr 48 Hr 3 Day 4 Day 5 Day						
Contact <b>Nancy Reardon</b>		P.O. #/Billing Information <b>SEE CLIENT INFO</b>		Comments (e.g., preservative or specific instructions)						
Client Sample ID	Date Collected	START Time Collected	Lab Sample No.	Type of Sample	Container ID (Serial #)	Flow Controller (Serial #)	Sample Volume (Liters)	EPA 17-15	✓	benzene
SITE 4	10/26/04	0724 1510	-1	AIR	AC00153	FC00364		✓		toluene
SITE 5	10/26/04	0727 1504	-2	AIR	AC00485	FC00297		✓		ethyl benzene
SITE 6	10/26/04	0724 1506	-3	AIR	AC00555	FC00292		✓		m,p,o-xylene
SITE 7	10/26/04	0727 1511	-4	AIR	AC00541	FC00155		✓		styrene
SITE 7 (DUP)	10/26/04	0726 1511	-5	AIR	AC00386	FC00318		✓		naphthalene
SITE 8	10/26/04	0724 1511	-6	AIR	AC00592	FC00061		✓		
SITE 10	10/26/04	0732 1512	-7	AIR	AC00404	FC00215		✓		
SITE 2	10/26/04	0721 1505	-8	AIR	AC00281	FC00190		✓		
Relinquished by: (Signature)		Date: 10/27/04	Time: 0745 EST	Received by: (Signature)		Date: 10/29/04	Time: 11:00	Additional Comments		
Relinquished by: (Signature)		Date:	Time:	Received by: (Signature)		Date:	Time:			
Relinquished by: (Signature)		Date:	Time:	Received by: (Signature)		Date:	Time:			

## LABORATORY REPORT

Client: HALEY & ALDRICH, INC.  
Address: 465 Medford Street, Suite 2200  
Boston, MA 02129  
Contact: Ms. Nancy Reardon

Date of Report: 02/04/05  
Date Received: 01/20/05  
CAS Project No: P2500130  
Purchase Order: Verbal

Client Project ID: 129 COMMERCIAL ST./06558-707

Eight (8) Stainless Steel Summa Canisters labeled:

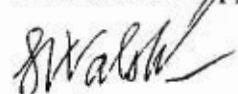
"SITE 2"	"SITE 4"	"SITE 5"	"SITE 6"
"SITE 7"	"SITE 7 (DUP)"	"SITE 8"	"SITE 11"

The samples were received at the laboratory under chain of custody on January 20, 2005. The samples were received intact. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time that they were received at the laboratory.

Volatile Organic Compound Analysis

The samples were analyzed by combined gas chromatography/mass spectrometry (GC/MS) for selected volatile organic compounds. The analyses were performed according to the methodology outlined in EPA Method TO-15. The analyses were performed by gas chromatography/mass spectrometry, utilizing a direct cryogenic trapping technique. The analytical system used was comprised of an Agilent Model 5973 inert GC/MS/DS interfaced to a Tekmar AutoCan Elite whole air inlet system/cryogenic concentrator. A 100% Dimethylpolysiloxane capillary column (RT<sub>x</sub>-1, Restek Corporation, Bellefonte, PA) was used to achieve chromatographic separation.

Reviewed and Approved:



Svetlana Walsh  
Analytical Chemist  
Air Quality Laboratory

Reviewed and Approved:



Chris Parnell  
GCMS-VOA Team Leader  
Air Quality Laboratory

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CAS Project No: P2500130

The results of analyses are given on the attached data sheets. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: **Haley & Aldrich, Inc.**  
Client Sample ID: **SITE 2**  
Client Project ID: **129 COMMERCIAL ST./06558-707**

CAS Project ID: P2500130  
CAS Sample ID: P2500130-001

Test Code: EPA TO-15  
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8  
Analyst: Svetlana Walsh  
Sampling Media: Summa Canister  
Test Notes:  
Container ID: AC00739

Date Collected: 1/13/05  
Date Received: 1/20/05  
Date(s) Analyzed: 1/21/05  
Volume(s) Analyzed: 1.00 Liter(s)

Pi 1 = -1.7 Pf 1 = 3.6

D.F. = 1.41

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	3.8	1.4	1.2	0.44	
108-88-3	Toluene	18	1.4	4.9	0.37	
100-41-4	Ethylbenzene	2.8	1.4	0.65	0.32	
136777-61-2	<i>m,p</i> -Xylenes	8.2	1.4	1.9	0.32	
100-42-5	Styrene	ND	1.4	ND	0.33	
95-47-6	<i>o</i> -Xylene	2.8	1.4	0.64	0.32	
91-20-3	Naphthalene	ND	1.4	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: **Haley & Aldrich, Inc.**  
Client Sample ID: **SITE 4**  
Client Project ID: **129 COMMERCIAL ST./06558-707**

CAS Project ID: P2500130  
CAS Sample ID: P2500130-002

Test Code: **EPA TO-15**  
Instrument ID: **Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8**  
Analyst: **Svetlana Walsh**  
Sampling Media: **Summa Canister**  
Test Notes:  
Container ID: **AC00524**

Date Collected: 1/13/05  
Date Received: 1/20/05  
Date(s) Analyzed: 1/21/05  
Volume(s) Analyzed: **1.00 Liter(s)**

Pi 1 = -0.4      Pf 1 = 3.5

D.F. = 1.27

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	2.6	1.3	0.83	0.40	
108-88-3	Toluene	16	1.3	4.3	0.34	
100-41-4	Ethylbenzene	2.7	1.3	0.62	0.29	
136777-61-2	<i>m,p</i> -Xylenes	8.0	1.3	1.9	0.29	
100-42-5	Styrene	ND	1.3	ND	0.30	
95-47-6	<i>o</i> -Xylene	2.2	1.3	0.51	0.29	
91-20-3	Naphthalene	ND	1.3	ND	0.24	

ND = Compound was analyzed for, but not detected above the **laboratory reporting limit**.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.



## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: **Haley & Aldrich, Inc.**  
 Client Sample ID: **SITE 6**  
 Client Project ID: **129 COMMERCIAL ST./06558-707**

CAS Project ID: P2500130  
 CAS Sample ID: P2500130-004

Test Code: EPA TO-15  
 Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8  
 Analyst: Svetlana Walsh  
 Sampling Media: Summa Canister  
 Test Notes:  
 Container ID: AC00122

Date Collected: 1/13/05  
 Date Received: 1/20/05  
 Date(s) Analyzed: 1/21/05  
 Volume(s) Analyzed: 1.00 Liter(s)

Pi 1 = 0.9 Pf 1 = 3.5

D.F. = 1.17

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	2.8	1.2	0.86	0.37	
108-88-3	Toluene	15	1.2	4.0	0.31	
100-41-4	Ethylbenzene	1.5	1.2	0.34	0.27	
136777-61-2	<i>m,p</i> -Xylenes	3.6	1.2	0.82	0.27	
100-42-5	Styrene	ND	1.2	ND	0.27	
95-47-6	<i>o</i> -Xylene	1.3	1.2	0.29	0.27	
91-20-3	Naphthalene	ND	1.2	ND	0.22	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: **Haley & Aldrich, Inc.**  
Client Sample ID: **SITE 7**  
Client Project ID: **129 COMMERCIAL ST./06558-707**

CAS Project ID: P2500130  
CAS Sample ID: P2500130-005

Test Code: EPA TO-15  
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8  
Analyst: Svetlana Walsh  
Sampling Media: Summa Canister  
Test Notes:  
Container ID: AC00747

Date Collected: 1/13/05  
Date Received: 1/20/05  
Date(s) Analyzed: 1/21/05  
Volume(s) Analyzed: 1.00 Liter(s)

Pi 1 = 0.4 Pf 1 = 3.5

D.F. = 1.21

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	2.8	1.2	0.88	0.38	
108-88-3	Toluene	10	1.2	2.7	0.32	
100-41-4	Ethylbenzene	2.3	1.2	0.54	0.28	
136777-61-2	<i>m,p</i> -Xylenes	6.0	1.2	1.4	0.28	
100-42-5	Styrene	ND	1.2	ND	0.28	
95-47-6	<i>o</i> -Xylene	1.7	1.2	0.40	0.28	
91-20-3	Naphthalene	ND	1.2	ND	0.23	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: **Haley & Aldrich, Inc.**  
Client Sample ID: **SITE 7 (DUP)**  
Client Project ID: **129 COMMERCIAL ST./06558-707**

CAS Project ID: **P2500130**  
CAS Sample ID: **P2500130-006**

Test Code: **EPA TO-15**  
Instrument ID: **Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8**  
Analyst: **Svetlana Walsh**  
Sampling Media: **Summa Canister**  
Test Notes:  
Container ID: **AC00750**

Date Collected: **1/13/05**  
Date Received: **1/20/05**  
Date(s) Analyzed: **1/21/05**  
Volume(s) Analyzed: **1.00 Liter(s)**

Pi 1 = -1.8 Pf 1 = 3.5

D.F. = 1.41

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	3.1	1.4	1.0	0.44	
108-88-3	Toluene	13	1.4	3.3	0.37	
100-41-4	Ethylbenzene	2.9	1.4	0.67	0.32	
136777-61-2	<i>m,p</i> -Xylenes	7.8	1.4	1.8	0.32	
100-42-5	Styrene	ND	1.4	ND	0.33	
95-47-6	<i>o</i> -Xylene	2.2	1.4	0.51	0.32	
91-20-3	Naphthalene	ND	1.4	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: **Haley & Aldrich, Inc.**  
Client Sample ID: **SITE 8**  
Client Project ID: **129 COMMERCIAL ST./06558-707**

CAS Project ID: P2500130  
CAS Sample ID: P2500130-007

Test Code: EPA TO-15  
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8  
Analyst: Svetlana Walsh  
Sampling Media: Summa Canister  
Test Notes:  
Container ID: AC00496

Date Collected: 1/13/05  
Date Received: 1/20/05  
Date(s) Analyzed: 1/21/05  
Volume(s) Analyzed: 1.00 Liter(s)

Pi 1 = -1.5 Pf 1 = 3.5

D.F. = 1.38

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	3.5	1.4	1.1	0.43	
108-88-3	Toluene	12	1.4	3.3	0.37	
100-41-4	Ethylbenzene	2.4	1.4	0.55	0.32	
136777-61-2	<i>m,p</i> -Xylenes	6.4	1.4	1.5	0.32	
100-42-5	Styrene	1.5	1.4	0.35	0.32	
95-47-6	<i>o</i> -Xylene	2.1	1.4	0.48	0.32	
91-20-3	Naphthalene	ND	1.4	ND	0.26	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: **Haley & Aldrich, Inc.**  
Client Sample ID: **SITE 11**  
Client Project ID: **129 COMMERCIAL ST./06558-707**

CAS Project ID: P2500130  
CAS Sample ID: P2500130-008

Test Code: EPA TO-15  
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8  
Analyst: Svetlana Walsh  
Sampling Media: Summa Canister  
Test Notes:  
Container ID: AC00609

Date Collected: 1/13/05  
Date Received: 1/20/05  
Date(s) Analyzed: 1/22/05  
Volume(s) Analyzed: 1.00 Liter(s)

Pi 1 = -4.3      Pf 1 = 3.5

D.F. = 1.75

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	3.4	1.8	1.1	0.55	
108-88-3	Toluene	13	1.8	3.4	0.46	
100-41-4	Ethylbenzene	2.6	1.8	0.60	0.40	
136777-61-2	<i>m,p</i> -Xylenes	6.9	1.8	1.6	0.40	
100-42-5	Styrene	ND	1.8	ND	0.41	
95-47-6	<i>o</i> -Xylene	2.1	1.8	0.49	0.40	
91-20-3	Naphthalene	ND	1.8	ND	0.33	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: **Haley & Aldrich, Inc.**  
Client Sample ID: **Method Blank**  
Client Project ID: **129 COMMERCIAL ST./06558-707**

CAS Project ID: P2500130  
CAS Sample ID: P050121-MB

Test Code: EPA TO-15  
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8  
Analyst: Svetlana Walsh  
Sampling Media: Summa Canister  
Test Notes:

Date Collected: NA  
Date Received: NA  
Date(s) Analyzed: 1/21/05  
Volume(s) Analyzed: 1.00 Liter(s)

D.F. = 1.00

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	ND	1.0	ND	0.31	
108-88-3	Toluene	ND	1.0	ND	0.27	
100-41-4	Ethylbenzene	ND	1.0	ND	0.23	
136777-61-2	<i>m,p</i> -Xylenes	ND	1.0	ND	0.23	
100-42-5	Styrene	ND	1.0	ND	0.23	
95-47-6	<i>o</i> -Xylene	ND	1.0	ND	0.23	
91-20-3	Naphthalene	ND	1.0	ND	0.19	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

## Columbia Analytical Services, Inc.

## Sample Acceptance Check Form

Client: Haley & Aldrich, Inc.Work order: P2500130Project: 129 COMMERCIAL ST./06558-707Sample(s) received on: 1/20/05Date opened: 1/20/05by: SM

**Note:** This form is used for all samples received by C.A.S. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client or as required by the method/SOP.

		Yes	No	N/A
1	Were custody seals on outside of cooler/Box?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Location of seal(s)? _____ Sealing Lid?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Were signature and date included?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Were seals intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Were custody seals on outside of sample container?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Location of seal(s)? _____ Sealing Lid?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Were signature and date included?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Were seals intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Were sample containers properly marked with client sample ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Did sample containers arrive in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Were chain-of-custody papers used and filled out?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Did sample container labels and/or tags agree with custody papers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Was sample volume received adequate for analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Are samples within specified holding times?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Was proper temperature (thermal preservation) of cooler at receipt adhered to?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Cooler Temperature <u>NA</u> °C			
	Blank Temperature <u>NA</u> °C			
9	Is pH (acid) preservation necessary, according to method/SOP or Client specified information?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Is there a client indication that the submitted samples are pH (acid) preserved?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Were VOA vials checked for presence/absence of air bubbles?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10	<b>Tubes:</b> Are the tubes capped and intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Do they contain moisture?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11	<b>Badges:</b> Are the badges properly capped and intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Are dual bed badges separated and individually capped and intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Lab Sample ID	Required pH	pH (as received, if required)	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P2500130-001			NA	
P2500130-002			NA	
P2500130-003			NA	
P2500130-004			NA	
P2500130-005			NA	
P2500130-006			NA	
P2500130-007			NA	
P2500130-008			NA	

Explain any discrepancies: (include lab sample ID numbers): \_\_\_\_\_



	Requested Turnaround Time	Time by Close of Business Day (Surcharges)	Please Circle:	CAS Project No.		
1 Day (100%)	2 Day (75%)	3 Day (50%)	4 Day (35%)	5 Day (15%)	10 Day-Standard	P2500130

	CAS Contact:	
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**P.O. # / Billing Information**

Analysis Method and/or Analytes
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CONFIDENTIAL			
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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Project Name	124 COMMERCIAL ST.	②
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Comments		
12/ comments		

Project Number	Comments e.g. Preservative or
0655a - 707	

00000 101	71-	specific instructions
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Sampler (Print & Sign) \_\_\_\_\_

Nancy Kearson ~~Valley~~

Sample Type				
OA				

(Air/Liquid Solid %)	Canister ID (Bar Code #)	Flow Controller (Bar Code #)	Sample Volume
			11

[illegible]

AIR	ACW/39	FC00111	V		(*) denzene-
-----	--------	---------	---	--	--------------

AIR	AC00524	FC00249	✓	✓	toluene
-----	---------	---------	---	---	---------

A-10	ACM57	E(00)89 ✓				off.	beneq.
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[illegible]

AIR	AC 00/22	FC 00389	✓	✓	m,p,o-Xylenes
-----	----------	----------	---	---	---------------

AIR	AC00747	FC00355	✓	✓	styrene
-----	---------	---------	---	---	---------

[illegible]

AK	AGW 130	FLW 126	✓			12/20/11

AIR	AC00496	FC00242 ✓
		✓

AIR	AC00609	FC00160	✓		
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[illegible][illegible]

10

[illegible][illegible]

10

[illegible][illegible][illegible]Project Requirements (MRLs, QAPF)

EDD required Yes / No

type: \_\_\_\_\_

Time:	Received by: (Signature)	Date:	Time:
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01/06/2020	Martha LaVone
------------	---------------

Time: \_\_\_\_\_  
Received by: (Signature) \_\_\_\_\_  
Date: \_\_\_\_\_  
Time: \_\_\_\_\_

Time:	Directed by (Composition)	Date:	Time:	Color / Black

Date,	Received by: (Signature)	Cooler / Blank
		Temperature °C

Year	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100																																				
Population	1,000,000	1,050,000	1,100,000	1,150,000	1,200,000	1,250,000	1,300,000	1,350,000	1,400,000	1,450,000	1,500,000	1,550,000	1,600,000	1,650,000	1,700,000	1,750,000	1,800,000	1,850,000	1,900,000	1,950,000	2,000,000	2,050,000	2,100,000	2,150,000	2,200,000	2,250,000	2,300,000	2,350,000	2,400,000	2,450,000	2,500,000	2,550,000	2,600,000	2,650,000	2,700,000	2,750,000	2,800,000	2,850,000	2,900,000	2,950,000	3,000,000	3,050,000	3,100,000	3,150,000	3,200,000	3,250,000	3,300,000	3,350,000	3,400,000	3,450,000	3,500,000	3,550,000	3,600,000	3,650,000	3,700,000	3,750,000	3,800,000	3,850,000	3,900,000	3,950,000	4,000,000	4,050,000	4,100,000	4,150,000	4,200,000	4,250,000	4,300,000	4,350,000	4,400,000	4,450,000	4,500,000	4,550,000	4,600,000	4,650,000	4,700,000	4,750,000	4,800,000	4,850,000	4,900,000	4,950,000	5,000,000	5,050,000	5,100,000	5,150,000	5,200,000	5,250,000	5,300,000	5,350,000	5,400,000	5,450,000	5,500,000	5,550,000	5,600,000	5,650,000	5,700,000	5,750,000	5,800,000	5,850,000	5,900,000	5,950,000	6,000,000	6,050,000	6,100,000	6,150,000	6,200,000	6,250,000	6,300,000	6,350,000	6,400,000	6,450,000	6,500,000	6,550,000	6,600,000	6,650,000	6,700,000	6,750,000	6,800,000	6,850,000	6,900,000	6,950,000	7,000,000	7,050,000	7,100,000	7,150,000	7,200,000	7,250,000	7,300,000	7,350,000	7,400,000	7,450,000	7,500,000	7,550,000	7,600,000	7,650,000	7,700,000	7,750,000	7,800,000	7,850,000	7,900,000	7,950,000	8,000,000	8,050,000	8,100,000	8,150,000	8,200,000	8,250,000	8,300,000	8,350,000	8,400,000	8,450,000	8,500,000	8,550,000	8,600,000	8,650,000	8,700,000	8,750,000	8,800,000	8,850,000	8,900,000	8,950,000	9,000,000	9,050,000	9,100,000	9,150,000	9,200,000	9,250,000	9,300,000	9,350,000	9,400,000	9,450,000	9,500,000	9,550,000	9,600,000	9,650,000	9,700,000	9,750,000	9,80

**APPENDIX B TABLE I**  
**SUMMARY OF INDOOR AIR QUALITY DATA**  
**129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE**  
**MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Sample Results (Results listed in parts per billion by volume [ppbv])											
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
13-Jan-05	Benzene	6.6	--	--	1.2	--	0.83	0.87	0.86	0.88	1.1	--	--	1.1
	Ethylbenzene	2.3	--	--	0.65	--	0.62	0.81	0.34	0.54	0.55	--	--	0.6
	m-&p-xylenes	8.3	--	--	1.9	--	1.9	2.4	0.82	1.4	1.5	--	--	1.6
	Naphthalene	1	--	--	ND(0.27)	--	ND(0.24)	ND(0.28)	ND(0.22)	ND(0.23)	ND(0.26)	--	--	ND(0.33)
	o-xylenes	8.3	--	--	0.64	--	0.51	0.59	0.29	0.4	0.48	--	--	0.49
	Styrene	0.7	--	--	ND(0.33)	--	ND(0.3)	ND(0.35)	ND(0.27)	ND(0.28)	0.35	--	--	ND(0.41)
	Toluene	7.7	--	--	4.9	--	4.3	4.2	4	2.7	3.3	--	--	3.4
26-Oct-04	Benzene	6.6	--	--	0.69	--	ND(0.52)	ND(0.48)	ND(0.56)	0.53	ND(0.46)	--	--	0.59
	Ethylbenzene	2.3	--	--	ND(0.33)	--	ND(0.38)	ND(0.35)	ND(0.41)	ND(0.36)	ND(0.34)	--	--	ND(0.36)
	m-&p-xylenes	8.3	--	--	0.83	--	0.74	1	0.71	0.93	0.67	--	--	0.8
	Naphthalene	1	--	--	ND(0.27)	--	ND(0.31)	ND(0.29)	ND(0.34)	ND(0.3)	ND(0.28)	--	--	ND(0.3)
	o-xylenes	8.3	--	--	ND(0.33)	--	ND(0.38)	ND(0.35)	ND(0.41)	ND(0.36)	ND(0.34)	--	--	ND(0.36)
	Styrene	0.7	--	--	ND(0.34)	--	ND(0.39)	ND(0.36)	ND(0.42)	ND(0.37)	ND(0.35)	--	--	ND(0.37)
	Toluene	7.7	--	--	1.8	--	1.8	2.4	3.3	1.8	1.3	--	--	1.8
06-Aug-04	Benzene	6.6	--	--	ND(0.58)	--	ND(1.1)	ND(1.1)	ND(10)	ND(11)	ND(1.1)	--	ND(11)	--
	Ethylbenzene	2.3	--	--	ND(0.42)	--	ND(0.8)	ND(0.78)	ND(7.6)	ND(7.8)	ND(0.81)	--	ND(8)	--
	m-&p-xylenes	8.3	--	--	0.67	--	0.82	ND(0.78)	ND(7.6)	ND(7.8)	ND(0.81)	--	ND(8)	--
	Naphthalene	1	--	--	ND(0.35)	--	ND(0.66)	ND(0.65)	ND(6.3)	ND(6.5)	ND(0.67)	--	ND(6.6)	--
	o-xylenes	8.3	--	--	ND(0.42)	--	ND(0.8)	ND(0.78)	ND(7.6)	ND(7.8)	ND(0.81)	--	ND(8)	--
	Styrene	0.7	--	--	ND(0.43)	--	ND(0.82)	ND(0.8)	ND(7.7)	ND(8)	ND(0.82)	--	ND(8.1)	--
	Toluene	7.7	--	--	1.3	--	2.4	2	ND(8.7)	ND(9)	0.95	--	ND(9.2)	--

**APPENDIX B TABLE I**  
**SUMMARY OF INDOOR AIR QUALITY DATA**  
**129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE**  
**MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Sample Results (Results listed in parts per billion by volume [ppbv] )											
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
06-May-04	Benzene	6.6	--	--	ND(0.48)	--	ND(0.59)	0.52	ND(0.59)	ND(0.58)	ND(0.65)	--	ND(0.61)	--
	Ethylbenzene	2.3	--	--	ND(0.35)	--	ND(0.43)	0.4	ND(0.43)	0.47	ND(0.48)	--	ND(0.45)	--
	m-&p-xylenes	8.3	--	--	0.67	--	0.8	1	0.93	1.7	1.2	--	1.5	--
	Naphthalene	1	--	--	ND(0.29)	--	ND(0.36)	ND(0.3)	ND(0.36)	ND(0.35)	ND(0.4)	--	ND(0.37)	--
	o-xylenes	8.3	--	--	ND(0.35)	--	ND(0.43)	0.37	ND(0.43)	0.7	0.52	--	0.59	--
	Styrene	0.7	--	--	ND(0.36)	--	ND(0.44)	ND(0.37)	ND(0.44)	ND(0.43)	ND(0.49)	--	0.65	--
	Toluene	7.7	--	--	23	--	8.9	19	4.8	3.5	2.3	--	2.8	--
12-Feb-04	Benzene	6.6	--	--	6.5	--	ND(0.52)	ND(0.54)	ND(2.7)	ND(4)	ND(5.8)	--	ND(6.3)	--
	Ethylbenzene	2.3	--	--	3.9	--	ND(0.38)	ND(0.4)	ND(2)	ND(3)	ND(4.3)	--	ND(4.6)	--
	m-&p-xylenes	8.3	--	--	12	--	0.47	0.68	ND(2)	ND(3)	ND(4.3)	--	ND(4.6)	--
	Naphthalene	1	--	--	0.39	--	ND(0.32)	ND(0.33)	ND(1.7)	ND(2.5)	ND(3.5)	--	ND(3.8)	--
	o-xylenes	8.3	--	--	4.3	--	ND(0.38)	ND(0.4)	ND(2)	ND(3)	ND(4.3)	--	ND(4.6)	--
	Styrene	0.7	--	--	0.5	--	ND(0.39)	ND(0.41)	ND(2)	ND(3)	ND(4.4)	--	ND(4.7)	--
	Toluene	7.7	--	--	19	--	1.2	1.4	15	ND(3.4)	ND(4.9)	--	ND(5.3)	--
30-Oct-03	Benzene	6.6	--	--	0.61	--	ND(0.53)	ND(0.48)	--	ND(0.55)	ND(1.1)	--	ND(1.2)	--
	Ethylbenzene	2.3	--	--	ND(0.38)	--	ND(0.39)	0.56	--	ND(0.44)	ND(0.8)	--	ND(0.86)	--
	m-&p-xylenes	8.3	--	--	0.7	--	1.2	1.8	--	1.2	ND(0.8)	--	ND(0.86)	--
	Naphthalene	1	--	--	ND(0.31)	--	ND(0.32)	ND(0.29)	--	ND(0.34)	ND(0.66)	--	ND(0.71)	--
	o-xylenes	8.3	--	--	ND(0.38)	--	ND(0.39)	ND(0.35)	--	ND(0.41)	ND(0.8)	--	1.7	--
	Styrene	0.7	--	--	ND(0.38)	--	ND(0.4)	ND(0.36)	--	ND(0.45)	ND(0.81)	--	ND(0.87)	--
	Toluene	7.7	--	--	1.6	--	7.2	6.1	--	6.1	3.5	--	2.7	--

**APPENDIX B TABLE I**  
**SUMMARY OF INDOOR AIR QUALITY DATA**  
**129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE**  
**MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Sample Results (Results listed in parts per billion by volume [ppbv])											
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
23-Jul-03	Benzene	6.6	ND(0.58)	--	--	--	ND(0.55)	ND(0.51)	ND(1.1)	ND(1.2)	ND(0.77)	--	ND(1.2)	--
	Ethylbenzene	2.3	ND(0.43)	--	--	--	ND(0.41)	ND(0.38)	ND(0.83)	ND(0.91)	ND(0.57)	--	ND(0.88)	--
	m-&p-xylenes	8.3	ND(0.43)	--	--	--	0.53	0.6	ND(0.83)	ND(0.91)	0.57	--	1.3	--
	Naphthalene	1	ND(0.35)	--	--	--	ND(0.34)	ND(0.31)	ND(0.69)	ND(0.76)	ND(0.47)	--	ND(0.73)	--
	o-xylenes	8.3	ND(0.43)	--	--	--	ND(0.41)	ND(0.38)	ND(0.83)	ND(0.91)	ND(0.57)	--	ND(0.88)	--
	Styrene	0.7	ND(0.44)	--	--	--	ND(0.42)	ND(0.39)	ND(0.85)	ND(0.93)	ND(0.58)	--	6.7	--
	Toluene	7.7	6.3	--	--	--	14	17	15	7.4	9.5	--	9.4	--
25-Apr-03	Benzene	6.6	--	--	ND(0.6)	--	ND(0.56)	ND(1.3)	ND(30)	ND(12)	ND(12)	--	ND(34)	--
	Ethylbenzene	2.3	--	--	ND(0.44)	--	ND(0.41)	ND(0.92)	ND(22)	ND(9)	ND(9.1)	--	ND(25)	--
	m-&p-xylenes	8.3	--	--	ND(0.44)	--	ND(0.41)	ND(0.92)	ND(22)	ND(9)	ND(9.1)	--	ND(25)	--
	Naphthalene	1	--	--	ND(0.37)	--	ND(0.34)	ND(0.76)	ND(18)	ND(7.5)	ND(7.6)	--	ND(20)	--
	o-xylenes	8.3	--	--	ND(0.44)	--	ND(0.41)	ND(0.92)	ND(22)	ND(9)	ND(9.1)	--	ND(25)	--
	Styrene	0.7	--	--	ND(0.45)	--	ND(0.42)	ND(0.94)	ND(22)	ND(9.2)	ND(9.3)	--	ND(25)	--
	Toluene	7.7	--	--	1.1	--	6.3	11	ND(25)	ND(10)	ND(11)	--	ND(28)	--
24-Jan-03	Benzene	6.6	--	--	0.6	--	ND(0.48)	ND(0.4)	ND(0.51)	ND(0.7)	ND(0.57)	--	ND(0.55)	--
	Ethylbenzene	2.3	--	--	ND(0.35)	--	ND(0.35)	ND(0.29)	ND(0.37)	ND(0.51)	ND(0.42)	--	ND(0.4)	--
	m-&p-xylenes	8.3	--	--	0.57	--	ND(0.35)	0.36	0.53	ND(0.51)	ND(0.42)	--	0.58	--
	Naphthalene	1	--	--	ND(0.29)	--	ND(0.29)	ND(0.24)	ND(0.31)	ND(0.42)	ND(0.35)	--	ND(0.33)	--
	o-xylenes	8.3	--	--	0.35	--	ND(0.35)	ND(0.29)	ND(0.37)	ND(0.51)	ND(0.42)	--	ND(0.9)	--
	Styrene	0.7	--	--	ND(0.36)	--	ND(0.36)	ND(0.3)	ND(0.38)	ND(0.52)	ND(0.43)	--	1	--
	Toluene	7.7	--	--	1.1	--	0.63	0.77	0.64	0.6	ND(0.48)	--	0.54	--

**APPENDIX B TABLE I**  
**SUMMARY OF INDOOR AIR QUALITY DATA**  
**129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE**  
**MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Sample Results (Results listed in parts per billion by volume [ppbv] )											
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
08-Oct-02	Benzene	6.6	--	--	ND(0.71)	--	ND(0.37)	--	ND(0.66)	ND(0.62)	ND(0.62)	--	0.6	--
	Ethylbenzene	2.3	--	--	ND(0.53)	--	ND(0.27)	--	ND(0.49)	ND(0.46)	ND(0.46)	--	0.82	--
	m-&p-xylenes	8.3	--	--	0.36	--	0.59	--	0.49	ND(0.46)	ND(0.46)	--	1.4	--
	Naphthalene	1	--	--	ND(0.44)	--	ND(0.22)	--	ND(0.4)	ND(0.38)	ND(0.38)	--	ND(0.32)	--
	o-xylenes	8.3	--	--	ND(0.53)	--	ND(0.27)	--	ND(0.49)	ND(0.46)	ND(0.46)	--	0.57	--
	Styrene	0.7	--	--	ND(0.54)	--	ND(0.27)	--	ND(0.5)	ND(0.47)	ND(0.47)	--	5.5	--
	Toluene	7.7	--	--	1.2	--	6.5	--	12	2.3	1.8	--	2.5	--
25-Jun-02	Benzene	6.6	--	--	--	--	0.44	ND(0.31)	1.9	1.8	0.97	--	1.7	--
	Ethylbenzene	2.3	--	--	--	--	0.71	0.57	ND(0.23)	ND(0.23)	ND(0.46)	--	0.71	--
	m-&p-xylenes	8.3	--	--	--	--	2	1.5	0.6	0.68	0.68	--	1.3	--
	Naphthalene	1	--	--	--	--	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.38)	--	ND(0.19)	--
	o-xylenes	8.3	--	--	--	--	0.51	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.46)	--	0.51	--
	Styrene	0.7	--	--	--	--	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.47)	--	4.7	--
	Toluene	7.7	--	--	--	--	9.2	13	11	5	2.3	--	2.2	--
10-Apr-02	Benzene	6.6	--	--	ND(0.31)	--	ND(0.31)	ND(0.31)	ND(6.3)	1.4	ND(6.3)	--	ND(6.3)	--
	Ethylbenzene	2.3	--	--	ND(0.23)	--	ND(0.23)	0.31	ND(4.6)	ND(0.46)	ND(4.6)	--	ND(4.6)	--
	m-&p-xylenes	8.3	--	--	0.52	--	0.56	1	ND(4.6)	ND(0.46)	ND(4.6)	--	ND(4.6)	--
	Naphthalene	1	--	--	ND(0.19)	--	ND(0.19)	ND(0.19)	ND(3.8)	ND(0.38)	ND(3.8)	--	ND(3.8)	--
	o-xylenes	8.3	--	--	ND(0.23)	--	ND(0.23)	ND(0.23)	ND(4.6)	ND(0.46)	ND(4.6)	--	ND(4.6)	--
	Styrene	0.7	--	--	ND(0.23)	--	ND(0.23)	ND(0.23)	ND(4.7)	ND(0.47)	ND(4.7)	--	ND(4.7)	--
	Toluene	7.7	--	--	1.1	--	5.1	3.8	ND(5.3)	3	ND(5.3)	--	ND(5.3)	--

APPENDIX B TABLE I  
SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

SAMPLE	ANALYTE	MADEP Indoor Air Background	Sample Results (Results listed in parts per billion by volume [ppbv])											
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
20-Oct-00	Benzene	6.6	--	--	0.86	--	--	--	1.4	--	--	--	--	--
	Ethylbenzene	2.3	--	--	0.29	--	--	--	0.46	--	--	--	--	--
	m-&p-xylenes	8.3	--	--	0.98	--	--	--	1.4	--	--	--	--	--
	Naphthalene	1	--	--	ND(0.19)	--	--	--	2.1	--	--	--	--	--
	o-xylenes	8.3	--	--	0.36	--	--	--	0.5	--	--	--	--	--
	Styrene	0.7	--	--	ND(0.23)	--	--	--	0.53	--	--	--	--	--
	Toluene	7.7	--	--	1.9	--	--	--	6.1	--	--	--	--	--
01-Oct-00	Benzene	6.6	--	--	0.37	--	--	--	0.51	--	--	--	--	--
	Ethylbenzene	2.3	--	--	ND(0.23)	--	--	--	0.25	--	--	--	--	--
	m-&p-xylenes	8.3	--	--	0.44	--	--	--	0.73	--	--	--	--	--
	Naphthalene	1	--	--	ND(0.19)	--	--	--	ND(0.19)	--	--	--	--	--
	o-xylenes	8.3	--	--	ND(0.23)	--	--	--	0.26	--	--	--	--	--
	Styrene	0.7	--	--	ND(0.23)	--	--	--	0.41	--	--	--	--	--
	Toluene	7.7	--	--	1.8	--	--	--	3.2	--	--	--	--	--
29-Sep-00	Benzene	6.6	--	--	0.52	--	--	--	7.7	--	--	--	--	--
	Ethylbenzene	2.3	--	--	ND(0.23)	--	--	--	0.52	--	--	--	--	--
	m-&p-xylenes	8.3	--	--	0.56	--	--	--	1.5	--	--	--	--	--
	Naphthalene	1	--	--	ND(0.19)	--	--	--	0.31	--	--	--	--	--
	o-xylenes	8.3	--	--	ND(0.23)	--	--	--	0.43	--	--	--	--	--
	Styrene	0.7	--	--	ND(0.24)	--	--	--	0.38	--	--	--	--	--
	Toluene	7.7	--	--	2.2	--	--	--	4.7	--	--	--	--	--

APPENDIX B TABLE I  
SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

SAMPLE	ANALYTE	MADEP Indoor Air Background	Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
Sample Results (Results listed in parts per billion by volume [ppbv])														
19-Jul-00	Benzene	6.6	--	--	1	--	0.75	1.9	27	29	9.8	--	20	--
	Ethylbenzene	2.3	--	--	0.47	--	TR(0.35)	TR(0.3)	TR(0.41)	TR(0.33)	TR(0.27)	--	2.1	--
	m-&p-xylenes	8.3	--	--	1.5	--	0.84	0.65	1	0.75	0.74	--	3.8	--
	Naphthalene	1	--	--	ND(0.19)	--	ND(0.19)	ND(0.19)	0.59	0.76	TR(0.32)	--	TR(0.26)	--
	o-xylenes	8.3	--	--	0.57	--	TR(0.32)	TR(0.27)	TR(0.38)	TR(0.31)	TR(0.3)	--	1.5	--
	Styrene	0.7	--	--	ND(0.24)	--	TR(0.26)	TR(0.32)	1.4	0.95	1	--	18	--
	Toluene	7.7	--	--	4.8	--	9.8	9.7	9.7	6.3	6	--	9.1	--
06-Apr-00	Benzene	6.6	--	--	0.72	--	TR(0.56)	ND(0.31)	14	10	26	--	14	--
	Ethylbenzene	2.3	--	--	ND(0.23)	--	3.8	48	ND(0.23)	17	3.9	--	ND(0.23)	--
	m-&p-xylenes	8.3	--	--	0.67	--	13	170	2.7	61	14	--	2.3	--
	Naphthalene	1	--	--	ND(0.19)	--	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)	TR(0.47)	--	ND(0.19)	--
	o-xylenes	8.3	--	--	TR(0.23)	--	2.2	31	ND(0.23)	11	2.4	--	TR(0.96)	--
	Styrene	0.7	--	--	ND(0.24)	--	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)	--	2.2	--
	Toluene	7.7	--	--	2.3	--	43	540	34	170	65	--	5.9	--
22-Feb-00	Benzene	6.6	--	--	0.76	--	0.65	--	18	10	26	--	22	--
	Ethylbenzene	2.3	--	--	0.28	--	0.25	--	0.65	0.38	0.63	--	2.3	--
	m-&p-xylenes	8.3	--	--	0.91	--	0.72	--	2	1.2	2.2	--	4.2	--
	Naphthalene	1	--	--	ND(0.19)	--	ND(0.19)	--	ND(0.19)	ND(0.19)	0.39	--	ND(0.19)	--
	o-xylenes	8.3	--	--	0.3	--	0.24	--	0.67	0.38	0.67	--	1.5	--
	Styrene	0.7	--	--	ND(0.23)	--	ND(0.24)	--	0.41	ND(0.24)	0.42	--	9	--
	Toluene	7.7	--	--	2.3	--	2.5	--	8.7	3.5	4.5	--	6.2	--



# APPENDIX B TABLE I

## SUMMARY OF INDOOR AIR QUALITY DATA

### 129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE MALDEN, MASSACHUSETTS

SAMPLE	ANALYTE	MADEP Indoor Air Background	Sample Results (Results listed in parts per billion by volume [ppbv] )										
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10

#### NOTES AND ABBREVIATIONS:

1. OSHA PEL: Permissible Exposure Limits for air contaminants in Title 29 CFR Part 1910.1000, Department of Labor, Occupational Safety Health Administration, 1989 and 1993 final ruling. Based on the lowest of the 8-hour average, 15-minute readings, or instantaneous readings.
2. ACGIH TLV: Threshold Limit Values recommended by the ACGIH. Based on the lowest of the 8-hour average, 15-minute readings, or instantaneous readings.
3. NIOSH REL: 1994 Recommended Exposure Limits from the National Institute of Occupational Safety and Health. Based on the lowest of the 8-hour average, 15-minute readings, or instantaneous readings.
4. MADEP Indoor Air Background Values from: MADEP, "Characterizing Risks Posed by Petroleum Contaminated Sites: Implementation of MADEP VPH/EPH Approach," Final Policy, 31 October 2002 (Policy #WSC-02-411); and MCP Toxicity.xls (MCPstnds.zip), 20 December 2001, available at <http://www.state.ma.us/dep/bwsc/files/standard/gw2/gw2.htm>.
5. VOC (ppb): volatile organic compounds with values in parts per billion by volume; analyzed by EPA Method T014.
6. ND: compound not detected above quantitation limit, number in parentheses is the quantitation limit.
7. TR: compound detected below the quantitation limit, number in parentheses is the quantitation limit.
8. Test Results associated with 6 April 2003 sampling event are not representative of typical indoor air conditions due to interference from products containing VOCs being used inside the facility at the time of sampling.
9. Results collected from the Rooftop sample location on 22 December 1997 are not shown in this table but have been reported in RAM Status reports dated 7 October 2004 and earlier.
10. Due to facility modifications, Sample Location 10 is no longer accessible as of October 2004. This location has been replaced by Sample Location 11; refer to Figure 1 for this sample location.