SCANNED

RELEASE ABATEMENT MEASURE (RAM) STATUS REPORT NO. 9, FORMER MANUFACTURED GAS PLANT (MGP) SITE PARCEL B, 129 COMMERCIAL STREET MALDEN, MASSACHUSETTS RTN 3-0362 AND LINKED RTN 3-3757 THER IB PERMIT 7378

by

Haley & Aldrich, Inc. Boston, Massachusetts

The Commercial

for

Massachusetts Electric Company Northborough, Massachusetts

File No. 06558-630 October 2002



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UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

Haley & Aldrich, Inc. 465 Medford Street Suite 2200 Boston, MA 02129-1400 Tel: 617.886.7400 Fax: 617.886.7600 www.HaleyAldrich.com



7 October 2002 File No. 06558-630

Massachusetts Department of Environmental Protection Northeast Regional Office 205A Lowell Street Wilmingtor., Massachusetts 01887

Subject:

 Release Abatement Measure (RAM) Status Report No. 9 Former Manufactured Gas Plant (MGP) Site Parcel B, 129 Commercial Street Malden, Massachusetts RTN 3-0362 and Linked RTN 3-3757 Tier IB Permit 7378

Ladies and Gentlemen:

On behalf cf Massachusetts Electric Company (MEC), Haley & Aldrich, Inc. is submitting this Release Abatement Measure (RAM) Status Report No. 9 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. 9 presents findings during the reporting period 7 April 2002 through 7 October 2002 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, Parcel B of the former Malden manufactured gas plant (MGP) site is currently occupied by the Piantedosi Bakery 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 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 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, however, response actions to reduce VOC

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concentrations were necessary 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. As described in RAM Status Report No. 1 dated 22 January 1999, floor sealing efforts in the packaging room area of the facility to reduce VOC migration into the building were unsuccessful. The RAM Plan 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. Since the first phase was not successful in reducing VOC concentrations, 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 Massachusetts Department of Environmental Protection (DEP) dated 9 April 1999. 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. During normal bakery operations, a negative air pressure is created inside the building, which may enhance soil vapor migration into the building. The active sub-slab venting was not proposed to remediate the source of contamination, but was proposed to provide the necessary pressure gradient to mitigate the migration of VOCs into the building and reduce the potential long term health risks.

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. Haley & Aldrich responded to DEP in a letter dated 24 June 1959 which requested clarification of certain conditions, and deletion of an Interim Deadline condition. 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. 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.



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Malden 100 Commercial ST Underground 3-367 Underground Engineering & Environmental Solutions

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ENVIRONMENTAL

Haley & Aldrich, Inc. 465 Medford St., Suite 2200 Boston, MA 02129-1400 Tel: 617.886.7400 Fax: 617.886.7600 www.HaleyAldrich.com



Letter of Transmittal

Date	7 October 20	02
File Number	06558-630	
From	Louis A. Bae	rga
То	Massachusett 205A Lowell Wilmington,	s Department of Environmental Protection Street Massachusetts 01887
Copy to	Massachusett	ts Electric Company; Michele V. Leone
Subject	Keyspan Ene RTN 3-0362	rgy Delivery of New England; Alexander G. Taft , 129 Commercial St., RAM Status Report No. 9
Copies	Date	Description
1	10/7/2002	Release Abatement Measure (RAM) Status Report No. 9, Former Manufactured Gas Plant (MGP) Site, Parcel B, 129 Commercial Street, Malden, Massachusetts, RTN 3-0362 and Linked RTN 3-3757, Permit #W007378"
1	10/7/2002	Original Transmittal Form BWSC-106
Transmitted via	□ First class	s mail 🛛 Overnight express 🗵 Hand delivery 🗋 Other

Remarks

*

	Massachusetts Department of Environmental Pro Bureau of Waste Site Cleanup	otection	BWSC-106
	RELEASE & UTILITY-RELATED ABATEMENT MEASURE (RAM & URAM) TRANSMITTAL FORM	1 -10	Release Tracking Number
DEP	Pursuant to 310 CMR 40.0444 - 0446 and 310 CMR 40.0462 - 0465	(Subpart D)	3 - 362
A. SITE LOCATIO	N:		
Site Name:	Former Manufactured Gas Plant (MGP) Site	<u></u>	
Street: 129 Comm	nercial Street Location Aid: SW	Corner Com.	& Charles Street
City/Town: Malder	n ZIP 0214 Code:	8-0000	
Check here if a	Tier Classification Submittal has been provided to DEP for this Release Trackin	g Number.	8.
Related Release Trac Addresses:	cking Numbers That This RAM or URAM 3-3757		
B. THIS FORM IS	BEING USED TO: (check all that apply)		
Submit a RAM I Check here Plan.	Plan (complete Sections A, B, C, D, E, F, J, K, L and M). re if this RAM Plan is an update or modification of a previously approved written	RAN	EIVED
Submit a RAM Submit a RAM	Status Report (complete Sections A, B, C, E, J, K, L and M). Completion Statement (complete Sections A, B, C, D, E, G, J, K, L and M).	OCT	0 7 2002
Confirm or Prov	vide URAM Notification (complete Sections A, B, H, K, L and M).	D	50
Submit a URAN	M Status Report (complete Sections A, B, C, E, J, K, L and M).	D	EP
Submit a URAN	M Completion Statement (complete Sections A, B, C, D, E, I, J, K, L and M).	RTHEAST RE	GIONAL OFFICE
You	u must attach all supporting documentation required for each use of form any Legal Notices and Notices to Public Officials required by 3	indicated, including 10 CMR 40.1400.	g copies of
C. SITE CONDITI	IONS:		
Check here if the	he source of the Release or Threat of Release is known.		
If yes, check al	Il sources that apply: UST Pipe/Hose/Line AST	Drums 📋 Trai	nsformer 🗍 Boat
Tanker Tru	uck 🔲 Vehicle 🚺 Other Specify: Disposal associated	with former	MGP operations
Identify Media and F apply)	Receptors Affected: (check all that 🛛 Air 🗹 Groundwater 🗌 Si	urface Water	Sediments <u> </u> Soil
Wetlands	Storm Drain [] Paved Private Well Public	Water Supply	Zone 2 Residence
Schoo I	Unknown		
Identify Release and	d/or Threat of Release Conditions at Site: (check all that apply)		
2 and 72 l	Hour Reporting Condition(s) 120 Day Reporting Condition(s)	Other Condi	tion(s)
Describe DEI	<u>P granted waiver in April 1990 indicating its s</u>	tatus as a co	onfirmed
non-prior	rity site. Site classified as Tier IB, effecti	ve on 28 Dec	ember 1999.
	RAMs may be conducted concurrently with an IRA only with writte URAMs may not be conducted if any 2 or 72 Hour conditions exi	n DEP approval st at the site.	
Identify Oils and Ha	azardous Materials Relea:ed: (check all that Oils C	nlorinated	Heavy Metals
apply) Others	Specify: MGP contaminants; VOCs, PAHs, cyanide		
D. DESCRIPTION	N OF RESPONSE AC'TIONS: (check all that		18. 1 9. 1
Assessment a	apply) D D Nonitoring Only	eployment of Absorb laterials	ant or Containment
Excavation of	Contaminated Soils	emporary Covers or	Caps
Re-use, F	Recycling or Treatment	ioremediation	
	Site Off Site IEst. Vol.: cubic yards	oil Vapor	
Describe:	: □ s	structure Venting Sys	tem
Store	○ On Site ○ Off Site Fst Vol: cubic vards □ 5	roduct or NAPL	
	SECTION D IS CONTINUED ON THE NEXT PAG	GE.	
Revised 2/24/95	Supersedes Forms BWSC-007, 008, 009 and 010 Do Not Alter This Form	(in part)	Page 1 of

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1	Massachusett	ts Department of En	vironmentai Pro	tection	BAASC-IN
(del	Dureau Or Was	sie Sile Cleanup			
	RELEASE & U MEASURE (R	JTILITY-RELATED A AM & URAM) TRANS	BATEMENT SMITTAL FORM		Release Tracking Number
DEP	Pursuant to 310 CM	MF. 40.0444 - 0446 and 310 (CMR 40.0462 - 0465 (\$	Subpart D)	3 - 362
DESCRIPTION	OF RESPONSE AC	TIONS (continued):			
Landfill	⊖ Cover ⊖ Dis	spcsal Est. Vol.:cu	bic yards Grou	Indwater Treatmer	nt
Removal of Dru	ms, Tanks or Containe	rs		iparging	
Describe			Tem	porary Water Sup	plies
Removal of Oth	er Contaminated Media	a		porary Evacuation	or Relocation of
Specify Type an	n d	· · · · · · · · · · · · · · · · · · ·	Fen	cing and Sign Pos	ting
Other Response	e Actions Describe _			A680	
-	See 3	10 CMR 40.0442 for limitations	on the scope and type	of RAMs.	
-		ee 510 GMR 40.0404 for perfor	mance standards for U	CANIS.	
Check here if th an Innovative T	is RAM or URAM involve echnologies Clearingho	ves the use of Innovative Techno puse.	ologies. DEP is intereste	d in using this info	rmation to aid in creating
Describe Technologies:				1000-12 J - 11	
TRANSPORT (OF REMEDIATION W	VA.STE: (if Remediation Wast	te has been sent to an of	-site facility, answ	er the following
ame of <u>C</u> l acility:	ean_Harbors		4. K.S.	999.	
own and Br ate:	aintree, MA	- 1 (1)	, , , , , , , ,	it with a financia	and and a second se
uantity of Remedia ate:	ation Waste Transported	to Forty four 55-	gallon drums of	spent carb	noon
RAM PLAN:					
Check here if th	nis RAM Plan received	previous oral approval from DEF	as a continuation of a Li	mited Removal Ac	tion (LRA).
Date of Oral					
Approval:	liance Fee is required	check here to certify that the fee	has been submitted. Yo	WINST attach a	nhotocopy of the
payment. See 3	310 CMR 40.0444(2) to	learn when a fee is not required	l.		photocopy of the
Check here if the prior to underta	he RAM Plan is propose iking the RAM, if not pre	ed for a Transition Site. If this is eviously provided. See 310 CMI	the case, you may need R 40.0600 for further info	to attach an LSP I mation about Trar	Evaluation Opinion
. RAM COMPLE	TION STATEMENT:				
If a RAM Comp	liance Fee is required in	n connection with submission of	the RAM Completion Sta	tement, check he	re to certify that the fee has
been submitted oral approval of	I. You MUST attach a pl f a RAM that continued	hotocopy of the payment. You o an LRA, and have NOT previou	owe this fee when submit sly submitted a RAM Pla	ting a RAM Compl n and accompanyi	letion Statement if you recei ng fee.
If any Remediatio	n Waste will be stored	d, freated, managed, recycled	or reused at the site fol	lowing submissio	on of the RAM Completion
tatement, you mu	St Subinit a Fliase IV F	RAM Completio	along with the appropr on Statement.	iate transmittal to	orm, as an attachment to th
URAM NOTIFI	CATION:		<u></u>		
lent fy Location Typ	pe: (check all that	Public Right of Way	Utility Easen	ient	Private Property
lent fy Utility Type:	(check all that	Sanitary/Combined	Water		Natural Gas
Telephone	e 🗌 Steam Lines	Telecommunications	Electric Oth	er Specify	
Check here if y JRAM.	ou provided DEP with p	previous oral notification of this	Date of Oral	•	
Check here if the	he property owner was I	NOT contacted prior to initiation	of the URAM. If this is t	he case, you mus	t attach an explanation of
why the owner Check here if the	was not contacted, inclu- nis URAM will occur in of ncountered contamination	ud ng the date and time when co connection with the construction ion, the scope and expense of n	ontact ultimately occurred of new public utilities. If ecessary mitigation and	l. this is the case, d he benefits amd li	ocument the nature mitations of project
and extent of e alternatives.					
and extent of e alternatives. /ith the exception s connection with th	tated below, the person te URAM:	n undertaking the URAM must p	rovide the name and lice	nse number of an l	LSP engaged or employed
and extent of e alternatives. With the exception s connection with the LSP Name:	stated below, the person the URAM:	n undertaking the URAM must p	rovide the name and lice	nse number of an l	LSP engaged or employed

6	Massachusetts Department Bureau of Waste Site Cleanu	of Environmental I p	Protection	BWSC-106
	RELEASE & UTILITY-RELA MEASURE (RAM & URAM)	TED ABATEMENT TRANSMITTAL FOR	RM	Release Tracking Number
VEP	Pursuant to 310 CMR 40.0444 - 0446 a	and 310 CMR 40.0462 - 046	65 (Subpart D)	3 - 362
URAM COMPLE	TION STATEMENT:			
Check here if t more than 20 c	his URAM was limited to the excavation and/or subic yards of soil contaminated by either a Ha	r handling of not more than 100 zardous Material or a mixture o) cubic yards of soil conta of a Hazardous Material a	aminated by Oil, or not and Oil.
If any Remediation Statement, you m	n Waste will be stored, treated, managed, n lust submit either a Release Abatement Mea appropriate transmittal form, as a	ecycled or reused at the site asure (RAM) Plan or a Phase n attachment to the URAM Co	following submission (IV Remedy Implementa ompletion Statement.	of the URAM Completion ition Plan, along with the
LSP OPINION	:			
attest under the pa locuments accomp DMR 4.02(1), (ii) th (nowledge, informa	ains and penalties of perjury that I have person anying this submittal. In my professional opini e applicable provisions of 309 CMR 4.02(2) an ition and belief,	nally examined and am familian ion and judgment based upon a d (3), and (iii) the provisions of	with this transmittal form application of (i) the stand 309 CMR 4.03(5), to the	n, including any and all dard of care in 309 best of my
 if Section B of th his submittal (i) ha appropriate and rea CMR 40.0000 and 	is form indicates that a Release Abatement M s (have) been developed in accordance with th asonable to accomplish the purposes of such re (iii) complies(y) with the identified provisions of	leasure Plan is being submitte le applicable provisions of M.G esponse action(s) as set forth i i all orders, permits, and appro-	d, the response action(s) .L. c. 21E and 310 CMR n the applicable provision vals identified in this sub-) that is (are) the subject of 40.0000, (ii) is (are) ns of M.G.L. c. 21E and 31(mittal;
 if Section B of the being submitted, the provisions of M.G.I set forth in the app and approvals iden 	is form indicates that a Release Abatement M e response action(s) that is (are) the subject o c. 21E and 310 CMR 40.0000, (ii) is (are) ap licable provisions of M.G.L. c. 21E and 310 CM tified in this submittal;	leasure Status Report or a Ui f this submittal (i) is (are) being propriate and reasonable to ac IR 40.0000 and (iii) complies(y	ility-Related Abatemen i implemented in accorda complish the purposes o) with the identified provi	t Measure Status Report in Ince with the applicable f such response action(s) a sions of all orders, permits,
 if Section B of the Completion State, mplemented in acc accomplish the pur complies(y) with the 	is form indicates that a Release Abatement N ment is being submitted, the response action(s cordance with the applicable provisions of M.G poses of such response action(s) as set forth i e identified provisions of a l orders, permits, ar	feasure Completion Stateme s) that is (are) the subject of thi L. c. 21E and 310 CMR 40.00 in the applicable provisions of I ad approvals identified in this su	nt or a Utility-Related A is submittal (i) has (have) 00, (ii) is (are) appropriat M.G.L. c. 21E and 310 C ubmittal;	<i>batement Measure</i>) been developed and e and reasonable to MR 40.0000 and (iii)
I am aware that sig to be false, inaccur	inificant penalties may result, including, but no ate or materially incomplete.	t limited to, possible fines and is based, if any, are (were) sut	imprisonment, if I submit	information which I know nit(s) and/or approval(s)
issued by DE	P or EPA. If the box is checked, you MUST at	tach a statement identifying th	e applicable provisions the	nereof.
LSP Name: <u>Ricl</u>	hard_PStandish LSP#:2	2242 Stamp: マロマロ	STEALTH OF MASSA	Se.
Telephone <u>860</u> : FAX: (optional)	659-4248 Ext.:		RICHARD P. STANDISH No. 2242	
Signature:	20 September 2	002	STEPSON STEPSON	
	An LSP Opinion is not required f	or a litility Related Abatemer	A Measure Notification	
An LSP Opinion is 100 cubic ya	s not required for a URAM Completion State rds of soil contaminated by Oil, or not more a mixture	ement if the URAM is limited e than 20 cubic yards of soil of Hazardous Material and Oi	to the excavation and/o contaminated either by	or handling of not more th Hazardous Material or
K. PERSON UN	DERTAKING RAM OF URAM:	······		
Narne of Organization: Narne of	Massachusetts Electric Co Michele V. Leone	ompany	ior Environment	al Engineer
Contact:	rfoot Road			
Street: 55 Bea	and the second se		ZID Coder 03	
Street: <u>55 Bea</u> City/Town: Nor	thborough	State MA		532-0000
Street: <u>55 Bea</u> City/Town: <u>Nor</u> Telephone: <u>508</u>	<u>-421-7564</u> Ext	State <u>MA</u> : : FAX:	21P Code: _01	532-0000

Release & UTILITY-RELATED ABATEMENT Number Release Tracking Number Pursuant to 310 CMR 40.0444 - 0446 and 310 CMR 40.0462 - 0455 (Subpat D) 3 Release Tracking 3 Re or PRP Specify Generator Generator Generator or Dubic Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5()) Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5()) Release Tracking Specify CERTIFICATION OF PERSON UNDERTAKING RAM OR URAM: Michcel and beldit, the accurate and and paradial documents accomparing the transmittal of the submittal is the information contained in this submittal is the information complete, and its submittal is the are significant penalties, inaccurate and the are significant penalties, inaccurate and indee and sublity aubinittal is the are significant penalties, inac	0	Massachusetts Departr Bureau of Waste Site Cle	nent of Enviro eanup	nmental Prote	ction	BWSC-10
Pursuant to 310 CMR 40.0444 - 0446 and 310 CMR 40.0462 - 0465 (Subpart D) 3 362 RELATIONSHIP TO SITE OF PERSON UNDERTAKING RAM or URAM: (check one) RP or PRP Specify Owner Operator Generator Transporter Other RP or PRP: Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2) Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5()) Any Other Person Undertaking RAM or URAM Specify		RELEASE & UTILITY-R MEASURE (RAM & URA	ELATED ABA' AM) TRANSMI'	FEMENT		Release Tracking Number
RELATIONSHIP TO SITE OF PERSON UNDERTAKING RAM or URAM: (check one) I RP or PRP Specify Owner Operator Generator Transporter Other RP or PRP:	DEP	Pursuant to 310 CMR 40.0444 - (0446 and 310 CMR	40.0462 - 0465 (Sub	part D)	3 - 362
RP or PRP Specify Owner Operator Generator Transporter Other RP or PRP: Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2) Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5()) Any Other Person Undertaking RAM or URAM Specify	RELATIONSH	P TO SITE OF PERSON UNDERT	AKING RAM or UR	AM: (check one)		
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Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j)) Any Other Person Undertaking RAM or URAM CERTIFICATION OF PERSON UNDIERTAKING RAM OR URAM:	Fiduciary, Sec	red Lender or Municipalit/ with Exempt	t Status (as defined by	M.G.L. c. 21E, s. 2)		
A My Other Person Undertaking RAM or URAM Specify Relationship: . CERTIFICATION OF PERSON UNDERTAKING RAM OR URAM:	Agency or Pub	ic Utility on a Right of Way (as defined	by M.G.L. c. 21E, s. 5	())		
CERTIFICATION OF PERSON UNDERTAKING RAM OR URAM: Michale V. Leone attest under the pains and penalties of perjury (i) that I have personally examined and familiar with the information contained in t its submittal, including any and all documents accompanying this transmittal form, (ii) that, based on y inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal. It we accurate and complete, and (iii) that I amfully authorized to make this attestation on behalf of the entity gally responsible for this submittal. It we person or entity on whose behalf this submittal is no there are significant penalties, cluding, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information. W. Massachusetts Electric Company [signature] or Massachusetts Electric Company [print name of person or entity recorded in Section K) Inter address of person providing certification, if different from address recorded in Section Iteret:	Any Other Pera	on Undertaking RAM or LIRAM Speci	ify	10 10		<i>⊂ 17-184 −</i> 1
y:	Mic m familiar with the ny inquiry of those est of my knowled gally responsible iccluding, but not lin	hele V. Leone information contained in this submittal, ndividuals immediately responsible for le and belief, true, accurate and comple or this submittal. I/the person or entity of ited to, possible fines and imprisonmer	, attest under the pain including any and all o obtaining the informati ete, and (iii) that I am f on whose behalf this s ht, for willfully submittir	s and penalties of perju ocuments accompanyi on, the material informa ully authorized to make ubmittal is made am/is ng false, inaccurate, or	ny (i) that I having this transmit ation contained this attestation aware that ther incomplete info	e personally examined and tal form, (ii) that, based on in this submittal is, to the on behalf of the entity e are significant penalties, rmation.
y:	M	1) Loone-				
or <u>Massachusetts Electric Company</u> Date: <u>10/4/02</u> [print name of person or entity recorded in Section K) inter address of person providing certification, if different from address recorded in Section itreet:	y: (sionature)	Vheem		Title: <u>Senior</u> Er	vironment	al Engineer
(print name of person or entity recorded in Section K) inter address of person providing certification, if different from address recorded in Section itreet:	or <u>Massachus</u>	etts Electric Company		Date: 10/4	102	
YOU MUST 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.	: treet: ity/Town:			State	ZIP Code:	
YOU MUST 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.	elephone:		Ext	FAX: (optional)		
			A REQUIRED DEA	ADLINE.		
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Attachment 1

Section J – LSP Opinion Release Abatement Measure (RAM) Status Report No. 9 Former Manufactured Gas Plant (MGP) Site Parcel B, 129 Commercial Street Malden, Massachusetts RTN 3-0362 and Linked RTNs 3-3757, 3-11581, 3-12448, 3-13310, 3-13345, 3-13753, and 3-13754

Approvals Required

. . . .

As part of a 1997 Tier II Extension Submittal for RTN 3-0362, a series of RTNs, each of which deals with releases or possible releases of contaminants associated with the former Malden MGP facility, were linked with RTN 3-0362. Parcel B, 129 Commercial Street (RTN 3-3757) was linked with RTN 3-0362 at that time. An IRA is currently being conducted on a portion of the site under RTN 3-0362 located at 100 Commercial Street. The IRA is being conducted under RTN 3-13754. As outlined under 310 CMR 40.0441(3), "RAMs shall not be conducted at any disposal site or portion of a disposal site where an IRA is required or ongoing until such time as written approval to conduct the RAM is obtained from the Departmert." Written approval of the RAM Plan was issued by DEP on 24 September 1998. A RAM Plan modification was submitted to DEP on 9 April 1999. Written conditional approval of the RAM Plan modification was issued by DEP on 9 June 1999. An additional RAM Plan Modification was submitted to DEP on 24 June 1999. An Amendment of Conditional Approval was issued by DEF on 27 July 1999.

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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 16 November 1999. Details of the initial operation and shut down, system adjustments and restart, as well as the pilot test and long term operation were described in RAM Status Report No. 4, dated 7 April 2000. RAM Status Report No. 5, dated 6 October 2000 detailed operation and maintenance of the sub-slab venting system and summarized monitoring data collected during the reporting period. RAM Status Report No. 6, dated 6 April 2001; RAM Status Report No. 7, dated 5 October 2001; and RAM Status Report No. 8, dated 5 April 2002 detailed operation and maintenance of the sub-slab venting system and summarized monitoring data collected during the respective reporting periods. RAM Status Report No. 9 details indoor air sampling activities and on-going operation and maintenance of the sub-slab venting system, and summarizes monitoring data collected from 7 April through 7 October 2002.

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

Party of Interest

Massachusetts Electric Company 55 Bearfoot Road Northborough, MA 01532 Contact: Michele V. Leone, Senior Environmental Engineer Telephone Number (508) 421-7564

Licensed Site Professional

Richard P. Standish, LSP Licensed Site Professional No. 2242 Haley & Aldrich, Inc. 110 National Drive Glastonbury, CT 06033-4318 Telephone Number 860-659-4248

STATUS OF RESPONSE ACTIONS

On-going System Operation

The sub slab ventilation system was operated throughout the current reporting period at the lower vacuum settings established on 2 October 2000. As discussed in RAM Status Report No. 6, a series of indoor air testing performed during September, October and December 2000 suggested that the system mitigated the migration of VOCs into indoor air more successfully at a



lower extraction rate.

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 Chromatograph on a monthly basis. These results are discussed below.

Indoor Air Sampling

Two quarterly rounds of indoor air sampling were conducted during this reporting period to evaluate air quality. We understand that the facility air handling system operates during bakery production hours at a rate that creates a negative pressure within the building. We believe that this negative pressure promotes the migration of VOCs from the subsurface into the building. During non-production hours, the air handling system operates at a lower rate, which likely reduces the negative pressure inside the building, which lessens the VOC migration rate. During this reporting period, indoor air samples were collected during production hours only; the first round on 10 April 2002 and the second round on 25 June 2002.

Environmental Health & Engineering, Inc. (EHE) of Newton, Massachusetts conducted the indoor air sampling. Indoor air samples were collected at locations previously tested throughout the facility as shown on Figure 2. Indoor air test results, both previous and new, are summarized on Table I.

NEW SITE INFORMATION

Treatment System Influent and Effluent Air Testing

As indicated above, approximately one O&M visit has been conducted per week throughout the reporting period. Influent and effluent readings are currently monitored with an HNU Systems PID equipped with a 10.2 eV bulb. 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 following treatment. Samples are tested for benzene, toluene,



ethylbenzene, m&p xylene, naphthalene and styrene. The samples were tested by GC analysis at the Haley & Aldrich, Inc. 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.

During this reporting period, the monthly GC analysis did not indicate VOCs in the influent or from the mid-carbon sample (Effluent-1). Styrene was detected at a concentration of $3 \mu g/L$ in the post-carbon (Effluent-2) sample on 5 June 2002 and $5 \mu g/L$ of m & p - xylenes were detected on 27 August 2002. However, VOCs were not detected in the post-carbon Effluent-1 or Effluent-2 samples during analysis of the most recent samples, collected on 25 September 2002. Given the sporadic detection of VOCs in the post-carbon Effluent-2 samples, it was decided not to change the carbon until VOCs are detected on a consistent basis from the post-carbon position(s). Haley & Aldrich will continue to collect and analyze samples from the vapor stream on a monthly basis and evaluate the condition of the activated carbon. Once VOCs are detected on a consistent basis, the carbon will be replaced.

Indoor Air Sampling and Test Results

A summary of indoor air quality data, both previous and new, is provided on Table I. A summary of quarterly indoor air quality from June 2001 through June 2002 is provided on Table III. As in the past, the latest results are below the applicable occupational standards set by OSHA and NIOSH, and do not constitute an imminent hazard for the workers in the building. The Phase II - Comprehensive Site Assessment report for the disposal site was completed and submitted to DEP on 28 December 2001. As part of the Phase II report, a Method 3 Risk Characterization was performed. At the time, the Phase II Risk Characterization for the 129 Commercial Street portion of the disposal site could not demonstrate a condition of No Significant Risk to the current commercial worker via the inhalation of indoor air pathway due to a slight exceedence of the DEP risk numbers. This result was based on indoor air data collected between September 1999 and October 2001. As part of the Phase III - Remedial Action Plan development, the Method 3 Risk Characterization for the 129 Commercial Street portion of the site was revised to reflect indoor air data collected between September 1999 and June 2002. The revised Risk Characterization demonstrated a condition of No Significant Risk to the current commercial worker via the indoor air pathway. This change is likely due to the slightly lower VOC concentrations that have been observed during recent indoor air sampling events. VOC levels will continue to be monitored as part of the RAM activities. In addition, the Phase III Remedial Action Plan will include an evaluation of remedial alternatives for further reducing concentrations of VOCs in indoor air.

The indoor air test results from 25 June 2002 detected concentrations of toluene at Sites 4, 5, and 6 that exceeded DEP indoor air background levels. Concentrations in other samples were below DEP indoor air background levels. The indoor air test results are consistent with past sampling events conducted during production hours at the facility.



post-carbon (Effluent-2) positions. Similar to PID screening, GC analysis shows VOC concentrations in the influent and Effluent-1 (mid-carbon) are at background levels; no VOCs were detected during this reporting period. VOC concentrations were detected in the Effluent-2 (post-carbon) on 2 occasions; $3 \mu g/L$ styrene on 5 June 2002 and $5 \mu g/L$ m & p - xylenes on 27 August 2002. However, VOCs were not detected in the Effluent-2 (post-carbon) sample during analysis of the most recent samples, collected on 25 September 2002. Given the sporadic detection of VOCs in the post-carbon Effluent-2 samples, it was decided not to change the carbon until VOCs are detected on a consistent basis from the post-carbon position(s). 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 varied between 420 and 1000 fpm (37 and 88 cfm) and the effluent flow rate varied between 1000 and 1500 fpm (88 and 132) cfm. Based on flow rates and monthly GC analysis of air samples, it is estimated that approximately 880 lbs of VOCs have been removed from beneath the building.

FUTURE RESPONSE ACTIONS

Future response actions will be associated with ongoing system O&M activities, 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 early October 2002. Results will be included in the next RAM Status Report due 7 April 2003.

Indoor air testing suggests the sub-slab venting system is only partially effective, primarily when the facility is in non-production mode. System enhancements and alternative response actions are being evaluated as part of the Phase III Remedial Action Plan to address indoor air quality while the facility is in production mode. If necessary, the RAM may be modified to address alternative response actions. The Phase III will be submitted to DEP by 1 November 2002.



Please do not hesitate to call if you have any questions or comments.

Sincerely ycurs, HALEY & ALDRICH, INC.

a - Buey Nom

Louis A. Baerga Environmental Geologist

In H. Jwalt

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

Enclosures:

Table I	Summary of Indoor Air Quality Data
Table II	Chemical Analysis of Sub-Slab Venting System Vapor Samples
Table III	Summary of Quarterly Indoor Air Quality Data - June 2001 through
	Present
Table IV	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
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c: Massachusetts Electric Company; Attn: Michele V. Leone KeySpan Energy Delivery of New England; Attn: Alexander G. Taft

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TABLEI

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

SAMPLE DESIGNATION				MADEP	Rooftop	Site 1A	Site 1	Site 1 & 1A	Site 1	Site 2	Lab Duplicate	Site 2
SAMPLING DATE	OSHA	ACGIH	NIOSH	Indoor Air	22-Dec-97	18-Jun-94	19-Nov-97	30-Sep-99	11-Oct-01	19-Nov-97	19-Nov-91	22-Dec-97
	PEL	TLV	REL	Background		(OccuHealth 1994)					(Site 2)	
SAMPLE TYPE				,	AIR	AIR	AIR	AIR	AIR	AIR	AIR	AIR
VOCs (ppb)												
									Control of the Contro		c ,	ć
Renzene	1000	500	100	6.6	0.8	1	0.9	0.28	ND (0.31)	1.9	1.9	7.1
Ethylhenzene	100001	100001	10000	2.2	TR (0.2)	0.4	ND(0.2)	ND	ND (0.23)	0.9	0.9	0.7
						¢	in on one	TT () 17	WI W GW	ND.0.11	IC UVUN	ND/U A)
Naphunarene	INNUN	Imm	MMM	-	(1-O)AN	1.0	12:0000	1				1000 61
Styrene	100000	20000	50000	•	ND(0.5)	TR	ND(0.2)	QN	ND (0.23)	ND(0.2)	(7.0)UN	(C.U)UN
Toluene	200000	SODO	10000	7.6	2.2	3.6	2.5	1.4	1.1	6.5	6.3	4.9
and the second	100001	00001	10000	0	07	-	0.6	0.47	ND (0.23)	3.1	5	2.4
III-och v) terres	000001	000001		\ C	TD (C U)	0.1	00	TR (0.22)	ND (0.23)	1.2	1.1	0.9
o-xylenes	IMMM	IUUUU	INNNN	N	(7-0) VI	2	4.0	1				
Total Detected VOCs					4.1	6.5	4.2	2.54	I.I	13.0	7.61	11

NOTES AND ABBREVIATIONS:

1. OSHA PEL: Permissable 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.

3. NIOSH REL: 1994 Recommended Exposure Limits from the National Institute of Occupational Safety and Health. 15-minute readings, or instantaneous readings.

Based on the lowest of the 8-hour average, 15-minute readings, or instantaneous readings.

Exposure Scenario. Version 1.6. October 1992. Policy #WSC/ORS-142-92. Adapted from Table 6-4, p. 33. Massachusetts Department of Environmental Protection, Office of Research and Standards and Bureau of Waste Site Cleanup. Boston, MA. 4. MADEP Background: Indoor air background levels obtained from Users Guide. Risk Assessment Shortform Residential

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;

Total Detected VOCs: Sum of detected concentrations of target analytes.
 *: 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.

TABLEI

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

Page 2 of 22

SAMPLE DESIGNATION				MADEP	Site 2	Site 2	Site 2	Site 2 *	Site 2	Site 2	Site 2	Site 2
SAMPLING DATE	OSHA	ACGIH	NIOSH	Indoor Air	30-Sep-99	29-Nov-99	22-Feb-00	06-Apr-00	19-Jul-00	29-Sep-00	01-Oct-00	20-Oct-00
	PEL	TLV	REL	Background						•2		
SAMPLE TYPE					AIR							
VOCs (ppb)												
Benzene	1000	500	100	6.6	0.65	1.1	0.76	0.72	1.0	0.52	0.37	0.86
Ethylbenzene	100000	100000	100000	2.2	0.27	0.24	0.28	ND(0.23)	0.47	ND(0.23)	TR (0.25)	0.29
Maphthalane	10000	10000	10000		0.15	2	ND(0.19)	ND(0.19)	£	ND(0.19)	ND(0.19)	ND(0.19)
Styrene	100000	20000	50000	•	ND	QN	ND(0.23)	ND(0.24)	ND	ND(0.24)	ND(0.23)	ND(0.23)
Toluene	200000	50000	100000	7.6	1.9	2.0	2.3	2.3	4.8	2.2	1.8	1.9
m-&p-xylenes	100000	100000	100000	6	0.85	0.71	16.0	0.67	1.5	0.56	0.44	0.98
o-xylenes	100000	100000	100000	6	0.39	TR (0.22)	0:30	TR (0.23)	0.57	ND(0.23)	ND(0.23)	0.36
Total Detected VOCs					4.25	4.27	4.55	3.92	8.34	3.28	2.86	4.39
									9			

NOTES AND ABBREVIATIONS:

1. OSHA PEL: Permissable 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.

4. MADEP Background: Indoor air background levels obtained from Users Guide. Risk Assessment Shortform Residential Based on the lowest of the 8-hour average, 15-minute readings, or instantaneous readings.

Exposure Scenario. Version 1.6. October 1992. Policy #WSC/ORS-142-92. Adapted from Table 6-4, p. 33. Massachusetts Department of Environmental Protection, Office of Research and Standards and Bureau of Waste Site Cleanup. Boston, MA.

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. Total Detected VOCs: Sum of detected concentrations of target analytes.
 9. *: Test Results associated with 6 April 2000 sampling event are not representative of typical indoor air conditions due to interference from

al T

products containing VOCs being used inside the facility at the time of sampling.

129 COMMERCIAL STREET MALDEN, MASSACHUSET1	, PARCEL B	OF FORMI	ER MALDE	N MANUFACT	URED GAS PLA	NT SITE					
SAMPLE DESIGNATION				MADEP	Site 2	Site 2	Site 2	Lab Duplicate	Site 2	Site 2	Lab Duplicate
SAMPLING DATE	OSHA	ACGIH	HSOIN	Indoor Air	22-Oct-00	01-Dec-00	03-Dec-00	03-Dec-00	16-Mar-01	18-Mar-01	18-Mar-UI
SAMPLE TYPE		114	VET	Darvground	AIR	AIR	AIR	AIR	AIR	AIR	AIR
VOCs (ppb)											
Benzene	1000	500	100	6.6	0.44	0.99	0.76	0.77	1.3	ND(0.31)	ND(0.31)
Ethylbenzene	100000	100000	100000	2.2	ND(0.23)	0.39	0.26	0.27	2.1	ND(0.23)	ND(0.23)
Maphiliaiste	10000	10000	00001	- F	ND(0.13)	ND(0.19)	ND(0.13)	ND(0.15)	1r 1	ND(0.19)	ND(0.19)
Styrene	100000	20000	50000	•	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	0.39	ND(0.23)	ND(0.23)
Toluene	200000	50000	100000	7.6	I	3.4	1.7	1.6	6.5	ND(0.27)	ND(0.27)
m-&p-xylenes	100000	100000	100000	6	0.57	1.2	0.74	0.74	3.6	ND(0.23)	ND(0.23)
o-xylenes	100000	100000	100000	9	TR (0.21)	0.44	0.29	0.28	1.8	ND(0.23)	ND(0.23)
Total Detected VOCs					2.22	6.42	3.75	3.66	20.09	QN	QN

SUMMARY OF INDOOR AIR QUALITY DATA

TABLEI

NOTES AND ABBREVIATIONS:

Fotal Detected VOCs

1. OSHA PEL: Permissable 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.

4. MADEP Background: Indoor air background levels obtained from Users Guide. Risk Assessment Shortform Residential Based on the lowest of the 8-hour average, 15-minute readings, or instantaneous readings.

Exposure Scenario. Version 1.6. October 1992. Policy #WSC/ORS-142-92. Adapted from Table 6-4, p. 33. Massachusetts Department of Environmental Protection, Office of Research and Standards and Bureau of Waste Site Cleanup. Boston, MA.

5. VOC (ppb): volatile organic compounds with values in parts per billion by volume; analyzed by EPA Method T014.

ND: compound not detected above quantitation limit, number in parentheses is the quantitation limit.
 TR: compound detected below the quantitation limit, number in parentheses is the quantitation limit;

 Total Detected VOCs: Sum of detected concentrations of target analytes.
 *: 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.

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29-Jun-01

AIR

Site 2

ND(0.31) ND(0.23) ND(0.23) ND(0.23) ND(0.23) 1.9 0.78 ND(0.23) 2.68

0.57 TR (0.21) 2.22

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

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				MADEP	Site 2	Site 2	Site 2	Site 2	Site 3	Site 3	0115 4	10	_
SAMPLING DATE	NAHA	ACGIH	HSOIN	Indoor Air	01-Jul-01	10-Jan-02	10-Apr-02	25-Jun-02	19-Nov-97	30-Sep-99	16-NON-61	se-doc-ne	
SAMPI E TYPE	PEL	TLV	REL	Background	AIR	AIR	AIR	AIR	AIR	AIR	AIR	AIR	<i></i>
VOCs (ppb)													
c	0001	en l	Į.	8 K	ND/0 63)	0.71	UE U/UN	ND/0.31)	1.1	0.44	0.8	TR (0.47)	
Benzene	100001	- CONTRACT	mont i	0.0	(20:0)QV	ND/U 23)	ND(0.23)	ND(0.23)	0.3	TR (0.21)	0.4	TR (0.25)	
Eurytoenzene	nononi			7.7	(at-o)du	(GTO) GU	ND/010/	ND/0119)	ND(0.2)	TR (0.16)	ND(0.2)	TR (0.31)	
maphuaicht				.4		NID OF THE	VEC UVUN	VEC UNUN	ND/U 21	CIN	ND(0.2)	QN	-
Styrene	100000	0007	nnnc i	• }	ND(0.41)	(c7.0)714	11	50	A A A	1 0		2.9	
Toluene	200000	0000	00001	0.	2.1	* 7	- 50	0.64		0.64		0.74	
m-&p-xylenes	100000	100001	100001		NLD(U.40)	+1.0 11700 011	70.0	ALC DOTA		0.28	D.d.	TR (0.34)	
o-xylenes	100000	100000	100000	6	ND (0.40)	(C7.0)(1N	(07.0)UN	(CT-O)CIN	t	04.0		5 01	
Total Detected VOCs					1.2	2.85	1.62	3.14	6.3	3.83	0.0	10.0	_
									1000 C				-

NOTES AND ABBREVIATIONS:

1. OSHA PEL: Permissable 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 Background: Indoor air background levels obtained from Users Guide. Risk Assessment Shortform Residential

Exposure Scenario. Version 1.6. October 1992. Policy #WSC/ORS-142-92. Adapted from Table 6-4, p. 33. Massachusetts Department of Environmental Protection, Office of Research and Standards and Bureau of Waste Site Cleanup. Boston, MA.

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;

Total Detected VOCs: Sum of detected concentrations of target analytes.
 *: 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.

TABLEI

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

Page 5 of 22

SAMPLING DATE OSHA ACGIH NIOSH Indoor Air 29-Nov-99 22-Feb-00 6-Ap-00 19-Jul-00 01-Dec-00 01-Dec-0	MPLE DESIGNATION				MADEP	Site 4	Site 4	Site 4*	Site 4	Lab Duplicate	Sile 4	Lab Duplicate	Olde +
SAMPLE TYPE PEL TLV REL Background AIR	MPLING DATE	OSHA	ACGIH	HSOIN	Indoor Air	29-Nov-99	22-Feb-00	6-Apr-00	19-Jul-00	19-Jul-00	01-Dec-00	01-Dec-00	03-Dec-00
SAMPLE TYPE AIR AIR <th< td=""><td></td><td>PEL</td><td>TLV</td><td>REL</td><td>Background</td><td></td><td></td><td>5</td><td></td><td>(Site 4)</td><td>014</td><td>(Site 4)</td><td>A I P</td></th<>		PEL	TLV	REL	Background			5		(Site 4)	014	(Site 4)	A I P
VOCs (ppb) 1000 500 100 6.6 0.37 0.65 TR (0.56) 0.75 0.78 0.5 0.48 Benzene 10000 500 100 6.6 0.37 0.65 178 (0.56) 0.75 0.78 0.5 0.48 Benzene 10000 1000 500 1000 2.2 0.25 3.8 TR (0.35) TR (0.37) ND(0.23) ND(0.23) Behylbenzene 100000 100000 2.2 0.25 3.8 TR (0.35) TR (0.37) ND(0.23) ND(0.23) Syrete 100000 20000 7.6 2.5 2.5 4.3 9.8 5.8 5.7 Colume 200000 100000 7.6 2.5 2.5 4.3 9.8 5.7 7.0 7.0 7.0 7.0 7.0 7.2 7.7 7.0 7.2 7.2 7.2 7.3 7.0 7.0 7.2 7.7 7.4 5.8 5.7 7.4 5.7 <td< td=""><td>MPLE TYPE</td><td></td><td></td><td></td><td></td><td>AIR</td><td>AIR</td><td>AIK</td><td>AIK</td><td>AIK</td><td>VIV</td><td>VIN</td><td>VIII</td></td<>	MPLE TYPE					AIR	AIR	AIK	AIK	AIK	VIV	VIN	VIII
VOCs (ppb) VOCs (ppb) Benzene 1000 500 100 6.6 0.37 0.65 TR (0.56) 0.75 0.78 0.5 0.48 Ehrybenzene 10000 10000 6.6 0.37 0.65 TR (0.56) 0.75 0.78 0.5 0.48 Ehrybenzene 10000 100000 220 0.25 3.8 TR (0.35) TR (0.37) ND(0.23) ND(0.23) Syrene 100000 20000 20000 22 0.25 3.8 TR (0.26) TR (0.29) ND(0.23) Syrene 100000 20000 50000 - ND ND(0.24) ND(0.24) ND(0.29) ND(0.23) Syrene 100000 20000 50000 - ND 2.5 4.3 9.8 9.8 5.7 Toluene 100000 100000 100000 0.90 0.76 0.52 0.52 0.52 0.52 0.52 0.52 0.52 0.52 0.52 0.52													
Benzene 1000 500 100 6.6 0.37 0.65 TR (0.56) 0.75 0.78 0.5 0.48 Ethylbenzene 100000 100000 10000 2.2 0.25 3.8 TR (0.35) TR (0.37) ND(0.23) ND(0.23)<	OCs (ppb)		11										
Ethylberzere 100000 100000	njene	Imm	500	1W	Ϋ́Υ	0 37	0.65	TR (0.56)	0.75	0.78	0.5	0.48	0.4
Instructure ICOND	turtherrows burgherrows		10000	uuuuu	3.2	0.25	0.25	3.8	TR (0.35)	TR (0.37)	ND(0.23)	ND(0.23)	ND(0.23)
Inspirutative I (0000 I (00000 I (0000		nonot					MIN/0100	NID/U 10/	CIN I	UN	ND/0.19)	ND(0.19)	ND(0.19)
Styrene 100000 20000 50000 - ND	upinitaiene	IUUUU	IUUUU	1 mm	-	2	()	(arealars	1				
Toluene 20000 5000 10000 7.6 2.5 2.5 4.3 9.8 9.8 5.8 5.7 Toluene 100000 100000 100000 9 0.90 0.72 13 0.84 0.89 0.52 0.53 ND(0.23) ND(0.23) ND(0.23) ND(0.23) 0.54 5.76 12.32 </td <td>trene</td> <td>100000</td> <td>20000</td> <td>50000</td> <td>Đ</td> <td>QN</td> <td>ND(0.24)</td> <td>ND(0.24)</td> <td>TR (0.26)</td> <td>TR (0.29)</td> <td>ND(0.23)</td> <td>ND(0.23)</td> <td>(17-0)(N)</td>	trene	100000	20000	50000	Đ	QN	ND(0.24)	ND(0.24)	TR (0.26)	TR (0.29)	ND(0.23)	ND(0.23)	(17-0)(N)
m-&p-vienes 100000 100000 100000 9 0.90 0.72 13 0.84 0.89 0.52 0.53 ND(0.23) N		00000	\$000	10000	7.6	2.5	2.5	43	9.8	9.8	5.8	5.7	1.3
Intrody Systems 100000 100000 9 0.026 0.24 2.2 TR (0.32) TR (0.34) ND(0.23)	Pro vislance	10000	uuuuu	uuuut	0	0 00	0.72	13	0.84	0.89	0.52	0.52	0.34
Distribution 10000 10000 7 0.20 0.20 0.20 0.20 0.7	-cch-xylicitics		000001		\ C	96.0	PC 0	66	TR (0.32)	TR (0.34)	ND(0.23)	ND(0.23)	ND(0.23)
The second	xyrenes	Immu	mmi	mmm	N	07-0	17.0				6 01		2.04
	stal Detected VOCs					4.28	4.36	95.20	12.32	12.47	70'0		10.17

NOTES AND ABBREVIATIONS:

1. OSHA PEL: Permissable 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.

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4. MADEP Background: Indoor air background levels obtained from Users Guide. Risk Assessment Shortform Residential Based on the lowest of the 8-hour average, 15-minute readings, or instantaneous readings.

Exposure Scenario. Version 1.6. October 1992. Policy #WSC/ORS-142-92. Adapted from Table 6-4, p. 33. Massachusetts Department of Environmental Protection, Office of Research and Standards and Bureau of Waste Site Cleanup. Boston, MA.

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;

Total Detected VOCs: Sum of detected concentrations of target analytes.
 *: 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.

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

Page 6 of 22

				170VIA		Contraction and and and and and and and and and an						
SAMPLING DATE	OSHA	ACGIH	HSOIN	Indoor Air	16-Mar-01	18-Mar-01	29-Jun-01	01-Jul-01	11-Oct-01	11-Oct-01	10-Jan-02	10-Apr-02
	PEL	TLV	REL	Background						(Site 4)		
SAMPLE TYPE					AIR	AIR	AIR	AIR	AIR	AIR	AIR	AIR
VOCs (ppb)												
Benzene	1000	500	100	6.6	20	ND(0.31)	0.68	ND(0.63)	ND(0.31)	ND(0.31)	ND(0.31)	(IE.0)dN
Ethylbenzene	100000	100000	100000	2.2	62	ND(0.23)	1.5	ND(0.46)	0.44	0.43	ND(0.23)	ND(0.23)
Namhatan.		50001			Ş	ND(0.10)	-1	ND(0.38)	ND/01 IO	ND/0110)	ND/0100	ND/UN 101
Styrene	100000	20000	50000		8.7	ND(0.23)	ND(0.23)	ND(0.47)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)
Toluene	200000	50000	100000	7.6	99	1.1	4.4	1.7	5.5	5.5	5.2	5.1
m-&p-xvlenes	100000	100000	100000	6	48	ND(0.23)	5.3	ND(0.46)	1.3	1.3	1.0	0.56
o-xvlenes	100000	100000	100000	6	20	ND(0.23)	1.6	ND (0.46)	0.45	0.44	ND(0.23)	ND(0.23)
Total Detected VOCs				12	267.7	1.1	14.6	1.7	7.69	7.67	6.2	5.66

NOTES AND ABBREVIATIONS:

1. OSHA PEL: Permissable 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 Background: Indoor air background levels obtained from Users Guide. Risk Assessment Shortform Residential

Exposure Scenario. Version 1.6. October 1992. Policy #WSC/ORS-142-92. Adapted from Table 6-4, p. 33. Massachusetts Department of Environmental Protection, Office of Research and Standards and Bureau of Waste Site Cleanup. Boston, MA.

5. VOC (ppb): volatile organic compounds with values in parts per billion by volume; analyzed by EPA Method T014.

ND: compound not detected above quantitation limit, number in parentheses is the quantitation limit.
 TR: compound detected below the quantitation limit, number in parentheses is the quantitation limit;
 Total Detected VOCs: Sum of detected concentrations of target analytes.
 *: 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.

TABLE I

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

Page 7 of 22

SAMPLE DESIGNATION			5	MADEP	Site 4	Lab Duplicate	Site 5	Site 5	Site 5	Field Duplicate	Site 5	Site 5*	
SAMPLING DATE	OSHA	ACGIH	HSOIN	Indoor Air	25-Jun-02	25-Jun-02	18-Jun-94	19-Nov-97	30-Sep-99	30-Sep-99	29-Nov-99	6-Apr-00	0.000
	PEL	TLV	REL	Background		(Site 4)	OccuHealth 1994)			(Site 5)			
SAMPLE TYPE					AIR	AIR	AIR	AIR	AIR	AIR	AIR	AIR	1
												8.	1000
VOCs (ppb)				0.0									19/19
Benzene	1000	500	100	6.6	0.44	0.45	1.8	1.9	0.72	0.7	0.55	ND(0.31)	
Ethylbenzene	100000	100000	100000	2.2	0.71	0.72	1.1	1.1	0.36	0.38	0.34	48	
Nanhthalene	100001	UUUU	UUUU	-	ND/0 101	IDI UNIN	ΨÛ	(C O'UN	12 0	toi ŵ al	ÚN.	ND/U 10)	
Styrene	100000	20000	50000		ND(0.23)	ND(0.23)	0.3	ND(0.2)	ND	QN	ND	ND(0.24)	
Toluene	200000	50000	100000	7.6	9.2	9.4	11.9	4.1	2.5	2.8	4.5	540	-
m-&p-xylenes	100000	100000	100000	6	2	2	2.5	1.5	0.71	0.74	1.2	170	
o-xylenes	100000	100000	100000	6	0.51	0.52	0.8	0.6	0.31	0.31	0.34	31	_
Total Detected VOCs					12.86	13.09	18.8	9.2	4.81	5.12	6.93	789	

VOTES AND ABBREVIATIONS:

1

1. OSHA PEL: Permissable 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.

4. MADEP Background: Indoor air background levels obtained from Users Guide. Risk Assessment Shortform Residential Based on the lowest of the 8-hour average, 15-minute readings, or instantaneous readings.

Exposure Scenario. Version 1.6. October 1992. Policy #WSC/ORS-142-92. Adapted from Table 64, p. 33. Massachuseus Department of Environmental Protection, Office of Research and Standards and Bureau of Waste Site Cleanup. Boston, MA.

5. VOC (ppb): volatile organic compounds with values in parts per billion by volume; analyzed by EPA Method 7014.

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;

Total Detected VOCs: Sum of detected concentrations of target analytes.
 *: 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.

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TABLEI

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

Page 8 of 22

SAMPLE DESIGNATION				MADEP	Site 5	Site 5	Lab Duplicate	Site 5	Site 5	Site 5	Site 5	5 114 DI
SAMPLING DATE	VHSO	ACGIH	NIOSH	Indoor Air	00-Iul-01	01-Dec-00	01-Dec-00	03-Dec-00	16-Mar-01	18-Mar-01	10-UNC-62	In-Inf-In
	PEL	TLV	REL	Background			(Site 5)		1	e.	CL T	AID.
SAMPLE TYPE					AIR	AIR	AIR	AIR	AIK	AIK	VIN	VIIV
VOCs (ppb)				2								
	two t	25	5	4 K	0 1	0.58	0.57	TR (0.41)	ND(0.31)	ND(0.31)	2.1	ND(0.63)
	0001				TD /0 100	TP (0.23)	TR (0.23)	ND(0.23)	0.65	ND(0.23)	0.85	ND(0.46)
Eurytoenzene	mmi	nnnn T		4.4	(arta) y t		NILVO 101	ND/0 10	ND/0 101	ND/01191	ND(0.19)	ND(0.38)
l Naphulaitene	Innon	Inner	133			()	()					CLY OVLIN
Stutene	10000	20000	50000		TR (0.32)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	(57-N)(NN	ND(U.41)
Televere	00000C	SOOOS	10000	76	7.6	3.7	3.6	1.5	5.7	1.2	18	50
	000007			2 0	0.65	0.68	0.68	TR (0.41)	2.3	ND(0.23)	2.8	ND(0.46)
sauarky-dw-u	100000	000001			TD // JT	76.0	0.74	ND(0,23)	0.55	ND(0.23)	0.86	ND (0.46)
o-xylenes	mmi	i uuuuu	mmnt	N	(17-D) VI	12.2	5 22	23	0.2	1.2	24.6	29
Total Detected VOCs					41.CI	C+.C	70.0	46.4				
				10.00		10 M		and the second se				

NOTES AND ABBREVIATIONS:

1. OSHA PEL: Permissable 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.

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15-minute readings, or instantaneous readings. 3. NIOSH REL: 1994 Recommended Exposure Limits from the National Institute of Occupational Safety and Health.

4. MADEP Background: Indoor air background levels obtained from Users Guide. Risk Assessment Shortform Residential Based on the lowest of the 8-hour average, 15-minute readings, or instantaneous readings.

Exposure Scenario. Version 1.6. October 1992. Policy #WSC/ORS-142-92. Adapted from Table 6-4, p. 33. Massachusetts Department of Environmental Protection. Office of Research and Standards and Bureau of Waste Site Cleanup. Boston, MA.

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.

TR: compound detected below the quantitation limit, number in parentheses is the quantitation limit;
 Total Detected VOCs: Sum of detected concentrations of target analytes.
 *: 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.

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

^bage 9 of 22

SAMPLE DESIGNATION				MADEP	Sile D			10 4 01	15 Lin 00	10 Nov-07	72-Dec-07	22-Dec-97
SAMPLING DATE	OSHA	ACGIH	NIOSH	Indoor Air Background	11-100-11	10-Jan-02	10-Apr-02	(Site 5)	70-106-07	16-404-61	11 - 22-21 - 77	(Site 6)
SAMPLE TYPE	3	1		numo igunar	AIR	AIR	AIR	AIR	AIR	AIR	AIR	AIR
VOCs (ppb)												
Renzene	9001	200	0	6.6	(E9:0)QN	ND(0,63)	ND(0.31)	ND(0.31)	ND(0.31)	61	18	19
Ethylhenzene	10000	100001	10000	2.2	ND(0.46)	ND(0.46)	0.31	0.31	0.57	2.7	1.2	1.2
						ALC: COLIN	ND:0.195	ND(0,19)	ND(0,10)	ND(0.2)	ND/0 4)	ND(0 4)
Chrone	Unnut	0000C	2000s	• •	ND/0 47)	ND(0.47)	ND(0.23)	ND(0.23)	ND(0.23)	0.4	0.3	0.3
Tohene	200000	20000	10000	76	4.6	5.1	3.8	3.8	13	5.2	2.6	2.5
Lucine m. R.n. vulenee	10000	10000		2 0	0.81	11	-	I	1.5	2.8	1.3	1.4
urequestions		100001	10000	. 0	ND (0.46)	ND (0.46)	ND(0.23)	ND(0.23)	ND(0.23)	0.8	0.4	0.4
Total Detected VOCs	-	00000		×.	5.41	6.2	5.11	5.11	15.07	72.9	23.8	24.8

1

NOTES AND ABBREVIATIONS:

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Health Administration, 1989 and 1993 final ruling. Based on the lowest of the 8-hour average, 15-minute readings, or instantaneous readings.

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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.

Exposure Scenario. Version 1.6. October 1992. Policy #WSC/ORS-142-92. Adapted from Table 6-4, p. 33. Massachusetts Department of Environmental Protection, Office of Research and Standards and Bureau of Waste Site Cleanup. Boston, MA. 4. MADEP Background: Indoor air background levels obtained from Users Guide. Risk Assessment Shortform Residential

5. VOC (ppb); volatile organic compounds with values in parts per billion by volume; analyzed by EPA Method T014.

ND: compound not detected above quantitation limit, number in parentheses is the quantitation limit.
 TR: compound detected below the quantitation limit, number in parentheses is the quantitation limit;
 Total Detected VOCs: Sum of detected concentrations of target analytes.
 ••: 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.

SAMPLE DESIGNATION				MADEP	I ab Dunlicate	Site 6	Lab Duplicate	Field Duplicate	Site 6	Lab Duplicate	Site 6	Lab Duplicate	-
SAMPLING DATE	OSHA	ACGIH	HSOIN	Indoor Air	22-Dec-97	18-Dec-98	18-Dec-98	18-Dec-98	30-Sep-99	30-Sep-99	29-Nov-99	29-Nov-99	-
	PEL	TLV	REL	Background	(Site 6)		(Site 6)	(Site 6)		(Site 6)		(Site 6)	-
SAMPLE TYPE				,	AIR	AIR	AIR	AIR	AIR	AIR	AIR	AIR	T
VOCs (ppb)													
Benzene	1000	500	100	6.6	19	23	23	16	19	19	3.6	3.6	_
Ethylhenzene	10000	100000	100000	2.2	1.2	2.8	2.8	7	3.9	3.6	0.28	0.31	
Marbohalana	-	innin	www		ND/0 4)	ND/01 10/	ND/0 101	IDI UJUN	D.41	0.38	ND	ND	_
Sivrene	10000	20000	50000		0.3	0.29	0.28	0.34	0.75	0.70	0.33	0.36	-
Toluene	20000	\$000	100000	7.6	2.5	4.5	4.5	3.4	17	16	5.5	5.3	
m-&n-vvlenes	10000	100001	10000	0	1.3	6.6	6.5	4.8	10	9.3	0.69	0.73	
o-xvlencs	10000	10000	100000	6	0.4	2.2	2.1	1.5	2.8	2.6	0.23	0.26	
Total Detected VOCs					24.7	39.39	39.18	28.04	53.86	51.58	10.63	10.56	

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TABLE I

NOTES AND ABBREVIATIONS:

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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,

3. NIOSH REL: 1994 Recommended Exposure Limits from the National Institute of Occupational Safety and Health. 15-minute readings, or instantaneous readings.

Based on the lowest of the 8-hour average, 15-minute readings, or instantaneous readings. 4. MADEP Background: Indoor air background levels obtained from Users Guide. Risk Assessment Shortform Residential

Exposure Scenario. Version 1.6. October 1992. Policy #WSC/ORS-142-92. Adapted from Table 6-4, p. 33. Massachusetts Department of Environmental Protection, Office of Research and Standards and Bureau of Waste Site Cleanup. Boston, MA.

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9. *: 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.

							10 M	1000				
SAMPLE DESIGNATION				MADEP	Site 6	Lab Duplicate	Site 6*	Site 6	Site 6	Lab Duplicate	Field Duplicate	Site o
SAMPLING DATE	OSHA	ACGIH	HSOIN	Indoor Air	22-Feb-00	22-Feb-00	6-Apr-00	19-Jul-00	29-Sep-00	29-Sep-UU	Cy-Sep-UU	01-00-00
SAMPLE TYPE	PEL	IFV	Tay	Background	AIR	AIR 0)	AIR	AIR	AIR	AIR	AIR	AIR
VOCs (ppb)												
Renzene	1000	200	8	66	8	18	14	27	7.7	8.0	7.8	0.51
Ethvihenzene	100001	TOMOU	100001	2.2	0.65	0.68	ND(0.23)	TR (0.41)	0.52	0.56	0.54	0.25
Nauhthalana	Innn	them	Innin	-	ND/U 101	ND/0.191	ND(0.19)	0.59	0.31	0.27	0.31	ND(0.19)
Curene	ummi	COURC	20000		0.41	0.43	ND(0.24)	1.4	0.38	0.4	0.44	0.41
Tolitere	00000	2000	00001	7 6	8.7	0.6	34	9.7	4.7	4.7	4.8	3.2
t uturik m. En virlanes	100001	uuuut	100001	20	2.0	2.0	2.7	1.0	1.5	1.6	1.5	0.73
nirokiraj kulos A vylanes			100001	. 0	0.67	0.69	ND(0.23)	TR (0.38)	0.43	0.46	0.45	0.26
Total Detected VOCs				N	30.43	30.80	50.70	40.48	15.54	15.99	15.84	5.36

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TABLE I

NOTES AND ABBREVIATIONS:

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15-minute readings, or instantaneous readings.

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6. ND: compound not detected above quantitation limit, number in parentheses is the quantitation limit.

 TR: compound detected below the quantitation limit, number in parentheses is the quantitation limit;
 Total Detected VOCs: Sum of detected concentrations of target analytes.
 *: 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.

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

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SAMPLE DESIGNATION			2	MADEP	Site 6	Site 6	Site 6	Site 6	Site 6	Lab Duplicate	Site 6	Site 6
SAMPLING DATE	OSHA	ACGIH	HSOIN	Indoor Air	18-Mar-01	29-Jun-01	10-Jul-10	11-0ct-01	10-Jan-02	10-Jan-02	10-Apr-02	25-Jun-02
	PEL	TLV	REL	Background						(Site 6)		
SAMPLE TYPE					AIR	AIR	AIR	AIR	AIR	AIR	AIR	AIR
VOCs (ppb)				99 - 10 -								
Benzene	1000	500	001	6.6	ND(0.63)	6.6	ND(0.63)	3.4	12	12	ND(6.3)	1.9
Ethylbenzene	100000	100000	100000	2.2	ND(0.23)	ND(0.23)	ND(0.46)	(E2.0)QN	ND(0.92)	ND(0.92)	ND(4.6)	ND(0.23)
Naphthalene	10000	10000	10000	Ţ	ND(0.48)	ND(0.19)	ND(0.38)	ND(0.19)	ND(0.76)	ND(0.76)	ND(3.8)	ND(0.19)
Styrene	100000	20000	50000	ı	ND(0.47)	0.64	1.5	ND(0.23)	ND(0.94)	ND(0.94)	ND(4.7)	ND(0.23)
Toluene	200000	50000	100000	7.6	4.1	14	2.2	8.3	10	11	ND(5.3)	п
m-&n-xvlenes	100000	100000	100000	6	0.72	0.77	0.47	0.64	ND(0.92)	ND(0.92)	ND(4.6)	0.6
o-xvlenes	100000	100000	100000	6	ND(0.46)	ND(0.23)	ND (0.46)	ND(0.23)	ND(0.92)	ND(0.92)	ND(4.6)	ND(0.23)
Total Detected VOCs					4.82	25.3	4.2	12.34	22	23	ND(33.9)	13.5
								All should be			All Martin California	

NOTES AND ABBREVIATIONS.

1. OSHA PEL: Permissable 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.

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3. NIOSH REL: 1994 Recommended Exposure Limits from the National Institute of Occupational Safety and Health.

4. MADEP Background: Indoor air background levels obtained from Users Guide. Risk Assessment Shortform Residential Based on the lowest of the 8-hour average, 15-minute readings, or instantaneous readings.

Exposure Scenario. Version 1.6. October 1992. Policy #WSC/ORS-142-92. Adapted from Table 6-4, p. 33. Massachusetts Department of Environmental Protection, Office of Research and Standards and Bureau of Waste Site Cleanup. Boston, MA.

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.

TR: compound detected below the quantitation limit, number in parentheses is the quantitation limit;
 Total Detected VOCs: Sum of detected concentrations of target analytes.
 *: 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.

SUMMARY OF INDOOR AIR QUALITY DATA TABLE I

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	URED GAS		
	ANUFACT		
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	EET, PARC	ETTS	
	JAL STRE	SSACHUS	
	COMMERC	DEN, MA	
COMPANY OF THE	129 C	MAL	

SAMPLE DESIGNATION				MADEP	Site 7	Site 7	Field Duplicate	Site 7	Site 7	Site 7	Site 7	Field Duplicate
SAMPLING DATE	NHSO	ACGIH	HSOIN	Indoor Air	18-Jun-94	19-Nov-97	19-Nov-91	22-Dec-97	18-Dec-98	30-Sep-99	29-Nov-99	29-Nov-99
	PEL	TLV	REL	Background	(OccuHealth 1994)		(Site 7)					(Site 7)
SAMPLE TYPE					AIR	AIR	AIR	AIR	AIR	AIR	AIR	AIR
VOCs (ppb)												
Derrord	0001	VUS	w.	29	F	13	13	6.1	7	10	3.6	3.6
	0001		Second.			3 -	2 -				010	TP (0.21)
Ethylbenzene	10000	nnnni	IUUUUU	7.7	14.2	-	-	7	1.1	1-1	0.12	114-00 11
Markthalanc	Guodi	Succession of the second	100001		5	IC UUUN	IC UVUN	UNC UN ALL	0.46	0.49	QN	Ð
Styrene	TODOO	20000	\$000		0.8	ND(0.2)	ND(0.2)	0.8	ND(0.47)	0.4	ND	TR (0.17)
Tohiene	uuuuu	2000s	UUUUUI	76	×	6.6	4.4	2	3.5	4.9	2.3	2.5
m_&n_vvjenes		TOTOT		0	343	2	1.9	9	6.6	4.8	0.54	0.57
or we have	100001	10000	100001	. 0	7.4	0.6	0.6	2	3	1.5	0.17	TR (0.20)
Total Detected V.C.					Y	6 66	20.9	1.05	22.26	23.74	6.8	7.45
I DIAL DEUCLEU Y OLS					3	4.04						
				8								

NOTES AND ABBREVIATIONS:

1. OSHA PEL: Permissable 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 Background: Indoor air background levels obtained from Users Guide. Risk Assessment Shortform Residential

Exposure Scenario. Version 1.6. October 1992. Policy #WSC/ORS-142-92. Adapted from Table 6-4, p. 33. Massachusetts Department of Environmental Protection, Office of Research and Standards and Bureau of Waste Site Clearup. Boston, MA.

VOC (ppb): volatile organic compounds with values in parts per billion by volume; analyzed by EPA Method 7014.
 ND: compound not detected above quantitation limit, number in parentheses is the quantitation limit.
 TR: compound detected below the quantitation limit, number in parentheses is the quantitation limit.
 Test Results associated with 6 April 2000 sampling event are not representative of typical indoor air conditions du

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.

a: E

TABLEI

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

SAMPLING DATE				MAUEL	alle /	rieu Dupicaic	1 110	manufar news	1 110	I ILLIA DUDINAM	manufact one	-	
	OSHA	ACGIH	NIOSH	Indoor Air	03-Dec-00	03-Dec-00	16-Mar-01	16-Mar-01	18-Mar-01	18-Mar-01	18-Mar-01	29-Jun-01	8
	PEL	TLV	REL	Background		(Site 7)		(Site 7)		(Site 7)	(Site 7)		8
SAMPLE TYPE				6	AIR	AIR	AIR	AIR	AIR	AIR	AIR	AIR	
									40				1
VOCs (ppb)													
Benzene	1000	500	100	6.6	0.68	0.7	9.3	9.3	ND(0.63)	ND(0.31)	ND(0.63)	п	
Ethylbenzene	100000	100000	100000	2.2	ND(0.23)	ND(0.23)	0.4	ND(0.23)	ND(0.46)	ND(0.46)	ND(0.23)	ND(0.23)	9
il antitalence	100001	00001	00001		ND(0.19)	ND(0.19)	0.59	ND(0.19)	ND(0.38)	ND(0.12)	ND(0.39)	0.40	-
Styrene	100000	20000	50000	k	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.47)	ND(0.23)	ND(0.47)	ND(0.23)	
Toluene	200000	50000	100000	7.6	1.5	1.4	6.2	6.2	6.8	6.9	6.8	5.5	
m-&p-xvlenes	100000	100000	10000	6	0.47	TR (0.44)	1.2	1.2	0.74	0.66	0.74	L	10
o-xylenes	100000	100000	100000	6	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.46)	ND(0.23)	ND(0.46)	ND(0.23)	
Total Detected VOCs					2.65	2.54	17.69	16.7	7.54	7.56	7.54	17.98	
Total Detected A CCs					2	2		2					

NOTES AND ABBREVIATIONS:

1. OSHA PEL: Permissable 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.

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Exposure Scenario. Version 1.6. October 1992. Policy #WSC/ORS-142-92. Adapted from Table 6-4, p. 33. Massachusetts Department of Environmental Protection, Office of Research and Standards and Bureau of Waste Site Cleanup. Boston, MA.

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.

Total Detected VOCs: Sum of detected concentrations of target analytes.
 *: 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.

TABLE I

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

Page 17 of 22

SAMPLE DESIGNATION				MADEP	Site 7	Site 7	Field Duplicate	Site 7	Field Duplicate	Site 7	Field Duplicate	Lab Duplicate
SAMPLING DATE	OSHA	ACGIH	NIOSH	Indoor Air	01-Jul-01	11-Oct-01	11-Oct-01	10-Jan-02	10-Jan-02	10-Apr-02	10-Apr-02	10-Apr-02
	pel	TI V	8FI.	Backernund			(Site 7)		(Site 7)		(Site 7)	(Site 7)
SAMPI E TVPF]			0	AIR	AIR	AIR	AIR	AIR	AIR	AIR	AIR
									100			
VOCs (ppb)												
		i		š	ALL OF LAN	26	ŭ	11	N	1.4	ND/6 3)	ND(6 3)
Benzene	1000	200	100	0.0	ND(0.03)	0.0	0.0	t I	1		(
Ethylhenzene	10000	100000	100000	2.2	ND(0.46)	ND(0.23)	ND(0.46)	ND(.92)	ND(1.8)	ND(.46)	ND(4.6)	ND(4.6)
				•	LE U	MIN IN		NIN TA	NDVI 21	ND/ JRI	NDG.8)	ND(3.8)
14 dpiniatere	000001	00001		•	20.05	NID(0 23)	ND/0 471	ND/ ON	ND(1 0)	ND/ 47)	ND(4.7)	ND(4.7)
Styrene	Innon	70000	nnnc	•]	0.00	(07.0)04	(11-m)ru	10000	10.1701		ND/S 3)	ND(5 3)
Toluene	200000	20000	100000	7.6	2.2	5.5	n	0.0	1.0	'n	(contract	(market
m. R.n. vulanác	10000	100001	100001	0	0.5	0.58	0.63	ND(.92)	ND(1.8)	ND(.46)	ND(4.6)	ND(4.6)
	000001	00001	100000	0	ND (0 46)	ND/0 23)	ND(0):46)	ND(.92)	ND(1.8)	ND(.46)	ND(4.6)	ND(4.6)
U-Ayleries	Immo	10000		•	(arro) arr	1 00	0.43	17.5	177	4.4	ND(33.9)	ND(33.9)
Total Detected VOCs					16.0	00.1	01.0	~		1.11		

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NOTES AND ABBREVIATIONS:

1. OSHA PEL: Permissable 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.

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Exposure Scenario. Version 1.6. October 1992. Policy #WSC/ORS-142-92. Adapted from Table 6-4, p. 33. Massachusetts Department of Environmental Protection, Office of Research and Standards and Bureau of Waste Site Cleanup. Boston, MA.

5. VOC (ppb): volatile organic compounds with values in parts per billion by volume; analyzed by EPA Method T014.

ND: compound not detected above quantitation limit, number in parentheses is the quantitation limit.
 TR: compound detected below the quantitation limit, number in parentheses is the quantitation limit.
 Total Detected VOCs: Sum of detected concentrations of target analytes.
 *: 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.

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SUMMARY OF INDOOR AIF 129 COMMERCIAL STREET MALDEN, MASSACHUSETT	R QUALITY) , PARCEL B IS	DATA OF FORMI	ER MALDE	N MANUFACTI	JRED GAS PL	ANT SITE						
SAMPLE DESIGNATION SAMPLING DATE SAMPLE TYPE	TEA VHSO	ACGIH TLV	HSOIN	MADEP Indoor Air Background	Site 7 25-Jun-02 AIR	Field Duplicate 25-Jun-02 (Site 7) AIR	Site 8 18-Jun-94 (OccuHealth 1994) AIR	Site 8 19-Nov-97 AIR	Site 8 30-Sep-99 AIR	Site 8 29-Nov-99 AIR	Site 8 22-Feb-00 AIR	Field Duplicate 22-Feb-00 (Site 8) AIR
VOCs (ppb)												
Renzene	1000	400	100	66	1.8	1.9	1.1	7.5	6.7	5.6	26	26
Ethylhansen	100001	UUUUUI	100001		ND(23)	ND(.46)	20.7	0.7	1.1	TR (0.17)	0.63	0.46
Luiyiucuzene Montribulane						ADD ADD		ND(0.2)	0.30	E!	0.30	0.C U
Chirana	uuuuu	00000	2000		ND(.23)	ND(.47)	0.8	0.5	38	0.24	0.42	0.41
Toluene	20000	20000	Innon	7.6	l un	5.1	5.4	3.6	4.3	2.1	4.5	4.2
r dia sulanas	100001	100001		0	0.68	0.7	48.3	1.5	3.2	0.52	2.2	1.4
or vulganes				\ 0	ND(.23)	ND(.46)	10.5	0.5	0.97	TR (0.17)	0.67	0.46
Total Detected VOCs		200001		e	7.48	7.7	87	14.3	54.66	8.8	34.81	33.22
LUISI PURCLUL TOTAL												

TABLE 1

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NOTES AND ABBREVIATIONS:

Fotal Detected VOCs

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1. OSHA PEL: Permissable 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.

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Exposure Scenario. Version 1.6. October 1992. Policy #WSC/ORS-142-92. Adapted from Table 6-4, p. 33. Massachusetts Department of Environmental Protection, Office of Research and Standards and Bureau of Waste Site Clearup. Boston, MA.

5. VOC (ppb); volatile organic compounds with values in parts per billion by volume; analyzed by EPA Method T014.

ND: compound not detected above quantitation limit, number in parentheses is the quantitation limit.
 TR: compound detected below the quantitation limit, number in parentheses is the quantitation limit.

Total Detected VOCs: Sum of detected concentrations of target analytes.
 *: 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.

TABLEI

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

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CAMPLE DESIGNATION				MADEP	Site 8*	Site 8	-						
SAMPLING DATE	OSHA	ACGIH	HSOIN	Indoor Air	06-Apr-00	00-InI-61	01-Dec-00	03-Dec-00	16-Mar-01	18-Mar-01	29-Jun-01	01-Jul-01	
SAMPI E TVPE	PEL	TLV	REL	Background	AIR	AIR	AIR	AIR	AIR	AIR	AIR	AIR	
VOCs (ppb)	8												
	0001	200	ş	46	36	80	4.3	TR (0.61)	13	ND(0.31)	11	ND(0.63)	
Benzene	0001	000001		5.0	10	TR (0.27)	ND(0,23)	ND(0.23)	0.42	ND(0.23)	ND(0.23)	ND(0.46)	- 67
Ethyloenzene	Annon I			1.1	TP M 4T	TR (0 10)	101.00CIN	ND(0.19)	0.51	ND(0.19)	0.64	ND(0.38)	
Inapitutation	nonit l					01	ND/0 23)	ND(0.23)	0.31	ND(0.23)	0.4	0.82	-
Styrene	100000	00007		, y F	(1210)0111 65	6.0	5.6	1.4	26	17	2.5	2.5	
1 oluene	100000	nnnc l	000001	20	3 4	0.74	0.54	0.49	1.3	0.95	0.77	ND(0.46)	
m-&p-xylenes	100000	1000001	000001	6 0	T C	TR (0.30)	ND(0,23)	ND(0.23)	0.62	ND(0.23)	ND(0.23)	ND (0.46)	
0-xylenes Total Detected VOCs	Innon	mmi	Innon	'n	111.77	18.43	10.44	2.5	42.16	17.95	15.31	3.32	
	1.00		14										
				14 2									

NOTES AND ABBREVIATIONS: 1. OSHA PEL: Permissable 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.

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15-minute readings, or instantaneous readings. 3. NIOSH REL: 1994 Recommended Exposure Limits from the National Institute of Occupational Safety and Health.

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5. VOC (ppb): volatile organic compounds with values in parts per billion by volume; analyzed by EPA Method T014.

ND: compound not detected above quantitation limit, number in parentheses is the quantitation limit.
 TR: compound detected below the quantitation limit, number in parentheses is the quantitation limit.
 Total Detected VOCs: Sum of detected concentrations of target analytes.
 *: 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.

TABLE I

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

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SAMPLE DESIGNATION				MADEP	Site 8	olic o	0 2110	OHC O	OTIC A	2114 10	or and	SILE TO
SAMPLING DATE	OSHA	ACGIH	HSOIN	Indoor Air	11-Oct-01	10-Jan-02	10-Apr-02	25-Jun-02	18-Jun-94	29-Nov-99	22-Feb-00	06-Apr-00
	DEL	TLV	REL	Background					(OccuHealth 1994)			
SAMPLE TYPE					AIR	AIR	AIR	AIR	AIR	AIR	AIR	AIR
VUCS (ppb)												
Benzene	1000	500	100	6.6	3.9	15	ND(6.3)	0.97	0.7	3.0	22	14
Ethylbenzene	100000	100000	100000	2.2	ND(0.46)	ND(1.8)	ND(4.6)	ND(0.46)	15.9	0.88	2.3	ND(0.23)
Anthrhalane N	00001	UNOUT	00001	-	ND/0 38)	INDU S	NDC3 8	ND/U 38)	0.2.	CN	ND(0.19)	ND(0.19)
Styrene	100000	20000	50000	1	ND(0.47)	ND(1.9)	ND(4.7)	ND(0.47)	0.7	6.8	9.0	2.2
Toluene	200000	50000	100000	7.6	2.1	2.8	ND(5.3)	2.3	5.4	2.5	6.2	5.9
m-&p-xvlenes	100000	100000	100000	6	0.68	ND(1.8)	ND(4.6)	0.68	37.3	1.6	4.2	2.3
o-xvienes	100000	100000	100000	6	ND(0.46)	ND(1.8)	ND(4.6)	ND(0.46)	7.9	0.65	1.5	TR (0.96)
Total Detected VOCs					6.68	17.8	ND(33.9)	3.95	68.1	15.43	45.2	25.36

NOTES AND ABBREVIATIONS:

OSHA PEL: Permissable 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.
 ACGHH TLV: Threshold Limit Values recommended by the ACGHL. 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.

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 Total Detected VOCs: Sum of detected concentrations of larget analytes.
 *: 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.

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

SITE

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SAMPLING DATE OSHA ACGIH NIOSH Indoor Air 19-Jul-00 01-Dec-00 22-Feb-00 16-Mar-01 IB-M SAMPLE TYPE PEL TLV REL Background AIR	SAMPLE DESIGNATION				MADEP	Site 10	Site 10	Site 10	Site 10	Site 10	Site 10	Site 10	Site 10
PEL TLV REL Background AIR	SAMPLING DATE	OSHA	ACGIH	HSOIN	Indoor Air	19-Jul-00	01-Dec-00	03-Dec-00	22-Feb-00	16-Mar-01	18-Mar-01	29-Jun-01	11-001-01
VOCS (ppb) 1000 500 100 6.6 20 7.2 3.5 ND 8.2 5 Benzene 1000 500 100 6.6 20 7.2 3.5 ND 8.2 5 Benzene 10000 10000 0.00 0.00 0.00 0.89 ND 8.2 5 Naphthalene 10000 10000 10000 2.2 2.1 0.88 0.89 ND 0.96 1 Styrene 10000 100000 100000 100000 100000 3 <t< td=""><td>CAMPI E TVPE</td><td>PEL</td><td>TLV</td><td>REL</td><td>Background</td><td>AIR</td><td>AIR</td><td>AIR</td><td>AIR</td><td>AIR</td><td>AIR</td><td>AIR</td><td>AIR</td></t<>	CAMPI E TVPE	PEL	TLV	REL	Background	AIR	AIR	AIR	AIR	AIR	AIR	AIR	AIR
VOCS (ppb) NOCS (ppb) NOCS (ppb) NOC ND 8.2 5 Benzzne 1000 500 100 6.6 20 7.2 3.5 ND 8.2 5 Benzzne 10000 100000 10000 2.2 2.1 0.88 0.89 ND 8.2 5 Benzzne 10000 100000 100000 2.2 2.1 0.88 0.89 ND 8.2 5 Styrene 10000 100000 100000 100000 1 1 1 1 1 1 1 0.96 1 0 9 3													
Benzene 1000 500 1000 6.6 20 7.2 3.5 ND 8.2 5. Benzene 10000 500 10000 6.6 20 7.2 3.5 ND 8.2 5. Euvibenzene 10000 100000 2000 2.2 2.1 0.88 0.89 ND 0.96 1 Naphthatene 10000 100000 10000 1 TR (0.26) 0.4 TR (0.31) ND 0.96 1 9 Stytene 10000 100000 50000 1 1 TR (0.25) 0.4 TR (0.31) ND 0.96 1 9 Tolucene 10000 100000 7.6 9.1 2.5 1.7 0.01 9.1 9 Tolucene 10000 100000 100000 9 1.7 1.5 0.01 2.5 1.7 9 model 10000 100000 100000 9 1.7 1.5 <td< td=""><td>VOCs (ppb)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	VOCs (ppb)												
Benzene 1000 300 1000 200 1000 200 1000 200 1000 200 1000 200 1000 200 1000 200 1000 200 1000 200 1000 200 1000 200 1000 200 1000 200 1000 200 1000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 2000 20000 <t< td=""><td>99 B</td><td></td><td></td><td></td><td></td><td>ę</td><td></td><td>3.5</td><td>CN</td><td>8.2</td><td>5.1</td><td>9.6</td><td>2.4</td></t<>	99 B					ę		3.5	CN	8.2	5.1	9.6	2.4
Ediviberazere 100000 9.1 2.5 1.7 1.8 6 7.1 ND 3	Benzene	1000	200	001	0 0	9 ;	000	08.0		960	1.2	2.5	0.74
Naphthalene 10000 2.5 1.7 1.7 1.5 0.01 9.1 9 Tolucne 200000 100000 7.6 9.1 2.5 1.7 1.7 0.01 9.1 9 m-&prytenes 100000 1000000 100000 9 3.8 1.7 1.5 ND 2.5 1 9 $prytenes 100000 100000 9 3.8 1.7 1.5 ND 1.6 1.6 2.5 1 1.6 9 1.6 $	Ethylbenzene	100001	Innon	nnnni	7.7	17	00.0	TD (0 21)		NIMI IN	IN DOL 191	0.0	ND(0.10)
Styrene 100000 20000 50000 - 18 0 /.1 NU - <td>Naphthalene</td> <td>10000</td> <td>10000</td> <td>10000</td> <td>-</td> <td>1 K (U.20)</td> <td>0.4 ,</td> <td>(ICN) VI</td> <td></td> <td>6 CTIONAL</td> <td>VE</td> <td>60</td> <td>7.5</td>	Naphthalene	10000	10000	10000	-	1 K (U.20)	0.4 ,	(ICN) VI		6 CTIONAL	VE	60	7.5
Tolucne 200000 50000 100000 7.6 9.1 2.5 1.7 0.01 9.1 3.1 9.1 3.1 9.1 3.1 9.1 3.1 9.1 3.1 9.1 3.1 9.1 3.1 9.1 3.1 9.1 3.1 9.1 3.1 9.1 2.5 3.1 9.1 2.5 3.1 9.1 7.1 9.1 2.5 3.2 3.1 1.7 1.5 ND 2.5 3.5 3.2 3.1 3.1 1.5 0.64 0.62 ND 1.6 1 6.5 1.6 1.6 1.6 1.6 1.6 1 6.5 1.6 <t< td=""><td>Styrene</td><td>100000</td><td>20000</td><td>50000</td><td>1</td><td>18</td><td>9</td><td>1.1</td><td>ND</td><td>'n</td><td>4.C</td><td>0.0</td><td>66</td></t<>	Styrene	100000	20000	50000	1	18	9	1.1	ND	'n	4.C	0.0	66
III-&P-Xylenes 100000 100000 9 3.8 1.7 1.5 ND 2.5 3 0-Xylenes 100000 100000 9 1.5 0.64 0.62 ND 1.6 1 1.1.1.1.1.1.1.1.1.1.1.1.25.36 23	Toluene	200000	50000	100000	7.6	9.1	2.5	1.7	0.01	У. Г	с. <u>к</u>	t - t -	1 -
Inversion 10000 10000 10000 10000 1.5 0.64 0.62 ND 1.6 1 explement 10000 100000 9 1.5 0.64 0.62 ND 1.6 1 explement 10000 100000 9 1.5 54.76 19.32 15.62 0.01 25.36 22	m. &n_vulenec	100001	100000	100000	6	3.8	1.7	1.5	Q	2.5	n	3.1	1.4
Publicity 10000 10000 10000 10000 5476 19.32 15.62 0.01 25.36 23	even (v. d. v. m	100001	000001	100001	0	15	0.64	0.62	QN	1.6	1.1	I.4	0.51
	0-Xylenes Total Detected VOCs	non i	2000	mmm	×	54.76	19.32	15.62	0.01	25.36	23.3	35	10.75
		1											

NOTES AND ABBREVIATIONS:

1. OSHA PEL: Permissable 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.

3, NIOSH REL: 1994 Recommended Exposure Limits from the National Institute of Occupational Safety and Health. 15-minute readings, or instantaneous readings.

Based on the lowest of the 8-hour average, 15-minute readings, or instantaneous readings.

4. MADEP Background: Indoor air background levels obtained from Users Guide. Risk Ässessment Shortform Residential Exposure Scenario. Version 1.6. October 1992. Policy #WSC/ORS-142-92. Adapted from Table 6-4, p. 33. Massachusetts

Department of Environmental Protection, Office of Research and Standards and Bureau of Waste Site Cleanup. Boston, MA.

VOC (ppb): volatile organic compounds with values in parts per billion by volume; analyzed by EPA Method T014.
 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.

Total Detected VOCs: Sum of detected concentrations of target analytes.
 *: 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.

TABLE I

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

Page 22 of 22

SAMPLE DESIGNATION				MADEP	Site 10	Site 10	Site 10	Field Blank	FICIO BIZINK
SAMPLING DATE	OSHA	ACGIH	HSOIN	Indoor Air	10-Jan-02	10-Apr-02	25-Jun-02	19-Nov-97	22-Dec-97
	PEL	TLV	REL	Background					
SAMPLE TYPE					AIR	AIR	AIR	AIR	AIR
VOCs (ppb)									
Renzene	0001	200	100	6.6	10	ND(6.3)	1.7	ND(0.3)	ND(0.6)
Ethylhenzene	100001	100000	100000	2.2	ND(1.8)	ND(4.6)	0.71	ND(0.2)	ND(0.5)
NT	uuuu I	Sec.	www	-	ND/1 SI	ND/3 81	101 UUUN	ND(0.2)	ND(0.4)
Chitana	100001	DODOC	20005	. ,	2.1	ND(4.7)	4.7	ND(0.2)	ND(0.5)
Tohisne	200001	2000	10000	7.6	2.9	ND(5.3)	2.2	ND(0.3)	ND(0.5)
1 Oldener	100000	10000	10000	6	ND(1.8)	ND(4.6)	1.3	ND(0.2)	ND(0.5)
	10000	100001	10000	. 0	ND(1.8)	ND(4.6)	0.51	ND(0.2)	ND(0.5)
Total Detected VOCs					15	ND(33.9)	11.12	Q	QN
			55						

NOTES AND ABBREVIATIONS:

1. OSHA PEL: Permissable 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. ACGHH 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 Background: Indoor air background levels obtained from Users Guide. Risk Assessment Shortform Residential

Exposure Scenario. Version 1.6. October 1992. Policy #WSC/ORS-142-92. Adapted from Table 6.4, p. 33. Massachusetts Department of Environmental Protection, Office of Research and Standards and Bureau of Waste Sile Cleanup. Boston, MA.

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.

Total Detected VOCs: Sum of detected concentrations of target analytes.
 *: 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.

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

Page 1 of 4

MALDEN, MASSACHUSE	SE						Shut valve on 19	January 2000					
INFLUENT Sampling Increment Sample Date	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)	541	63	8	10.5	2	0.2	561	82	61	R	1.6	61	
Compound (ug/L)							1000					1	
Benzene	348	88	127	19	61	Ð	402	192	148	11	4	8	
Toluene	45	53	36	•	П	£	200	Ē	326	8	103	R	
Ethylbenzene	32	15	22	4	S	QN	F	8	153	82	8	2	
M&P Xvlene	18	11	17	f	\$	QN	76	70	282	48	126	42	
O Xvlene	2	£	~	Q	£	Ð	14	17	8	4	67	90	
Nanhthalene	NA	NN	NA	150	NA	NA	NA	NA	VN	NA	NA	NA	
Styrene	Ð	Q	s	Q	Q	6	E	12	62	9	48	Q	
Total VOCs	445	137	210	183	. 4	2	782	520	974	262	420	168	
200	2						Shut valve on 19	January 2000					
EFFLUENT - 1 Sampling Increment Sample Date	Day I 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-Apt-00	5.5 Months 1-May-00	
					c		-	80	7	0	0.4	0	

Sample Date	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	п	4.1	0	0.2	0	0.8	4	0	0.4	0
Compound (ug/L)		ş	5		Ę	ş	CN N	Ð	8	Q	Ð	Ð
Benzone	5 6	5 5	5	Ş	2	Ē	Ð	5	Ð	ę	11	£
Toluene	2 9	5 6	2 9	Ę	2 5	E	2	Ð	£	Ą	£	£
Leinytoenzene	2 9	e e	29	2	2	e	£	4	Q	£	41	£
M&P Aylene	5 5			2	£	Ð	Ð	Q	Q	R	8	Ð
U Ayicite	NA NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	VN
Styrene		2	Q	4	ę	Ð	ę	ę	J6	£	15	₽
Total VOCs	•	•	ы	18	0	0	0	6	11	£	56	0
							Shut valve on 19	January 2000				
EFFLUENT - 2 Sampling Increment	Day 1	Day 3	L /reCl	Day 14	Day 28	2 Months	Day 70	3 Months	4 Months	4.5 Months	5 Months 26-Anr-00	5.5 Months 1-Mav-00

					100 M		Shut valve on 19	January 2000				1
EFFLUENT - 2 Sampling Increment Sample Date	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	o	0	0	0	0	0	o	Ċ	0
Compound (ug/L)	1		9	Ş	í.	Ę	Ð	ę	£	Ð	2	£
Benzene	2 !		2 9	Ę	£	Ð	2	Q	ę	ę	R	2
Toluene	5 į	23		2	Ē	g	£	Ð	ę	Ð	Ð	£
Ethytbenzene	2 !	CN IN	2 9	2 6	2 5	Ę	£	£	Ð	ę	14	₽
M&P Xylene	₽ (VN	2 9	2 9	2 9) E	2	R	Q	Ð	6	Ð
O Xytene	R :	V.		2 3	1	X	NA	YN	Ð	NA	VN	NA
Naphthalene Styrene	NA N	N N	5 64	2	2	2	=	Ð	36	8	9	Ð
	•	NA	2	.0	0	0	11	0	98	Ð	29	0
Total VOCs		W	4									

NOTES AND ABBLEVATIONS: 1. VOC: variatio organic compounds 2. NO: non-margined net detected above method detection limit. 3. NA: not analyzed. 4. INFLUENT: Vegor analyzed of the family through primary curbon treatment dum (indi-curbon). 5. EPPTUENT: 1. Jour samples collected for through primary curbon treatment dum (indi-curbon). 5. EPPTUENT: 1. Types margine collected for through primary curbon treatment dum (prot-curbon). 5. Expression analyzed by gas chroningeraph at Hoky & Aldrich Inboretery.

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

INFLUENT Sampling Increment 6 Sample Date 24	5 Months 4-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-Ol	15 months 27-Feb-01	15 months 26-Mar-01	16 Months 30-Apr-01
PID Reading (ppm)	9.4	4.2	6'1	0.6	0.4	0	0	0	0	0	0	0
Compound (ug/L)					3							
Benzence	13	ę	Ð	£	ę	ę	£	ł	£	£	£	ę
Toluene	8	20	7	£	Q	£	£	Ð	£	£	£	2
Ethylbenzene	15	9	Q	£	Q	Ð	ę	Q	Ð	£	£	Q
M&P Xvlene	27	18	*	18	Q	Q	Ð	2	Q	£	£	Q
O Xvlene	. 00	٢	R	5	Ð	Ð	Ś	ę	Ð	£	£	Q
Nantrhalene	NA	NA	NA	NN	NA	NA	NA	NA	NA.	NA	NA	NA
Styrene	Q	£	÷	£	ŧ	4	*	3	₽	£	Q	s.
Total VOCs	113	51	15	20		2	6	3	•	0	0	S
						Opened valve on	2 October 2000					
EFFLUENT - I	A Monthe	7 Months	8 Months	9 Momhs	10 Months	11 months	12 months	13 months	14 months	15 months	15 months	16 Months

1

EFFLUENT - 1 Sampling Increment Sample Date	6 Months 24-May-00	7 Months 23-Jun-00	8 Months 31-lul-00	9 Momhs 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)		2	ţ		ţ	ţ	Ę	ş	Ę	Ę	G2	Q
Benzene	R !	* 0 ;	2:	2 :	29	2 9	Ē		Ē	Ę	Ę	Q
Totuene	Đ.	=	ם !	2 ;	2 9	2 9	2 6	2 6	2	Ē	Ę	g
Ethylbenzene	Q. !	£!	2	2 9	2.	2 9		2 6	Ē	2 5	2	£
M&P Xylene	29	29	29	2:	'nĘ	25	E	Ę	29	£	2	9
O Xylcne	Z	TZ :	2:		23		NN.	N.N	NA	NA	NA	NA
Naptrihalene	N N	NA NA	V	AN N	~~		22		5	5	: (1
Styrenc	Ð	£	£	£	£	s	H	4	Q	a	CN .	
Total VOCs	28	19	61	11	9	5	u	4	0	0	0	0
						Opened valve on	2 October 2000					
			1000	2001-02	1000	1201 1000						

				101	100	Opened valve un	2 UCROBET 2000	2010				
SFFLUENT - 2 lampling Increment ample 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
ID Reading (ppm)	0	0	0	0	0	0	0	0	0	0	0	0
(Jan) bruodmo	1	1	Ę	5	Ş	Ģ	Ę	QN	Q	Ð	Ø	QN
enzene	2 9	2 9	2 9		2 5	2	2 £	£	Ð	£	£	£
olucne	2 9	2 9	5 6	2 9	2	2	Ē	£	£	Ð	£	£
ühylbenzene	€!	2 £	2 9		2 5	2 5	2	e e	QN	2	Ð	Q
A&P Xylene	5 9	2 9	2 9	2 5	2 5	2	2	2	ę	2	Q	£
) Xylene		2			1	X	NA	NA	NA	NA	NA	NA
laphthalenc tyrene	22	£ 2	2	2	2	Ð	Ð	₽	Ð	₽	₽	£
	-	•	•	0	0	0	•	Ð	0	0	0	0

NOTES AND ABREVIATIONS:
 VOCs. volutid organic compounds
 NO: compared not detected above method detection limit.
 NO: not unarlyad.
 NNLUENT: Vapor samples calcued pilor to carbon treatment.
 EFFULUENT: Vapor samples calcued pilor for flowing through primary carbon treatment drum (onti-carbon).
 EFFULUENT - 1: Vapor samples calcued the flowing through primary carbon treatment drum (onti-carbon).
 EFFULUENT - 1: Vapor samples calcued the flowing through primary carbon treatment drum (onti-carbon).
 EFFULUENT - 2: Vapor samples calcued the flowing through primary carbon treatment drum (onti-carbon).

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TABLE () CHEMICAL ANALYSIS OF SUB-SLAB VENTING SYSTEM VAPOR SAMPLES CHEMICAL ANALYSIS OF SUB-SLAB VENTING SYSTEM VAPOR SAMPLES COMMERCAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE MALDEN, MASACHUSETTS

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Sample Date 31-May-01 27-Jun-01 27-Jun-01 37-May-01 39-Mov-01 39-Mov-01 39-Mov-01 30-Mov-01	INFLUENT Sampling Increment	17 Months	18 Morahs	19 Months	20 motths	21 months	22 Months	23 months	24 months	저	5 months	5 months 26 months
PTD Reading (ppm) 0 1 1 0 1 4 1 0 4 1 0 1 3 ND	Sample Date	31-May-01	10-unf-12	27-Jul-01	31-Aug-01	30-Sep-01	29-00-01	10-Nov-01	-	9-Dec-01	9-Dec-01 31-Jan-02	9-Dec-01 31-Jan-02 27-Feb-02
Compound (ugL) ND	PID Reading (ppm)	0	0	0	0	0	0	0		0	0 0	0 0 0
Benzae ND ND <th< td=""><td>Compound (ug/L)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	Compound (ug/L)											
Tolenee ND ND <t< td=""><td>Benzene</td><td>Q</td><td>Ð</td><td>Ð</td><td>Ð</td><td>Q</td><td>Q</td><td>£</td><td>Z</td><td>~</td><td>₽ 0</td><td>e e</td></t<>	Benzene	Q	Ð	Ð	Ð	Q	Q	£	Z	~	₽ 0	e e
Ebythencare ND	Toluene	Ð	ę	£	Ð	Ð	ę	£	R		e e	ON ON O
M&F Xylere ND ND <t< td=""><td>Ethylbenzene</td><td>Q</td><td>ę</td><td>Ð</td><td>ę</td><td>QN</td><td>Q</td><td>ę</td><td>£</td><td></td><td>£</td><td>QN QN</td></t<>	Ethylbenzene	Q	ę	Ð	ę	QN	Q	ę	£		£	QN QN
O Xylene ND <	M&P Xylene	QN	Ð	£	Ð	Q	Ð	£	2		ę	Q Q
Naphthalene NA	O Xylene	Q	£	ę	₽	£	₽	£	£		R	QN QN
Styrene 6 3 ND 1 3 ND 4 Total VOC3 6 3 0 1 3 ND 4 Total VOC3 6 3 0 1 3 0 4 Total VOC3 6 3 0 1 3 0 4 EFFLUENT 1 17 Months 18 Months 19 Months 20 months 21 months 23 months 2 Sampling Increment 17 Months 18 Months 19 Months 20 months 21 months 23 months 2 Sample Date 31-May-GI 27-Jun-OI 31-Jug-OI 30-Sep-OI 29-Os 2 PID Readire (nmm) 0 12 0.8 0	Naphthalcne	NA	VN	NN	NA	NA	NA	NA	NA		NA	NA NA
Total VOCs 6 3 0 1 3 0 4 Total VOCs 6 3 0 1 3 0 4 EFFLUENT - 1 17 Months 18 Months 19 Months 20 months 21 months 23 months 2 Sampling Incentent 17 Months 18 Months 19 Months 20 months 21 months 23 months 2 Sample Date 31-May-01 27-Jul-01 31-Mag-01 30-Sep-01 30-Nov-01 1 2 PID Redirer from to 0 12 0.8 0 <td>Styrene</td> <td>v</td> <td>e</td> <td>£</td> <td>I</td> <td>æ</td> <td>£</td> <td>4</td> <td>Q</td> <td></td> <td>Ø</td> <td>ev ev</td>	Styrene	v	e	£	I	æ	£	4	Q		Ø	ev ev
EFFLUENT - 1 Sampling Increment 17 Months 18 Months 19 Months 20 months 21 months 23 Months 23 months 2 Sample Date 31-May-01 27-Jun-01 27-Jun-01 31-Aug-01 30-Sep-01 29-Oct-01 30-Nov-01 11 PDI Redefins Comm 0 1 12 0.8 0 0 0 0 0 0	Total VOCs	9	3	0	F	n	0	4	0		0	0
EFPLUENT - 1 17 Months 18 Months 19 Months 20 months 21 months 23 months 24 months 24 months 24 months 24 months 23 months 24 months <th26 months<="" th=""> <th26 months<="" th=""> <</th26></th26>												
Sample Date 31-May-01 27-Jun-01 31-Aug-01 30-Sep-01 29-Oct-01 30-Nov-01 19 PD1 Reading comm. 0 12 0.8 0 0 0 0	EFPLUENT - 1 Sampling Increment	17 Months	18 Months	19 Months	20 months	21 months	22 Months	23 months	24 months		25 months	25 months 26 months
PID Reading (norm) 0 1.2 0.8 0 0 0 0	Sample Date	31-May-01	27-Jun-01	10-Inf-72	31-Aug-01	30-Sep-01	29-001-01	30-Nov-01	19-Dec-01		31-Jan-02	31-Jan-02 27-Feb-02
	PID Reading (ppm)	0	1.2	0.8	0	0	0	0	0		0	0 0

lampling Increment lample Date	17 Months 31-May-01	18 Months 27-Jun-01	19 Months 27-Jul-01	20 months 31-Aug-01	21 months 30-Sep-01	22 Months 29-Oct-01	30-Nov-01	24 months 19-Dec-01	25 months 31-Jan-02	26 months 27-Feb-02	28-Mar-02
1D Reading (ppm)	0	1.2	0.8	0	0	0	0	0	0	0	0
('l/an) punoduo;										a a construction	1000
lenzene	Ð	Q	Ð	Q	Ð	£	₽	Q	£	£	9
niuene	8	2	R	Ð	R	9	Q	Ð	ę	Ð	£
thylhenzene	QN	Ð	QN	Ð	ę	£	R	Ð	Ð	Q	Ð
(&P Xviene	Ę	£	ę	Ð	Q	Ð	Ð	QN	Q	Q	ę
) Xviene	Q	2	Ą	ę	R	£	Ð	Ð	£	ę	Ð
lanhthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tyrene	£	Q	ę	Ð	2	₽	₽	-	£	Q	ę
otal VOCs	0	0	0	0	2	0	0	I	0	0	0

EFFLUENT - 2		10 Martha	10 Months	TO monthe	1 months	77 Monthe	21 months	74 months	25 months	26 months	27 months
Sample Date	31-May-01	10-nul-12	27-Jul-01	10-Sun-16	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 (ue/L)											
Renzene	Ð	£	R	Ð	£	Ð	ę	£	2	Ð	Ð
Tolinere	£	Q	Q	£	£	Q	Ð	£	Ð	Ð	Ð
Echulhentent	Ę	Ê	Q	Q	2	9	Q	£	ę	Ð	ę
MAD Vilane	Ē	g	Ð	Q	Ð	£	Ð	ę	Q	ę	Q
O Yulane	E	9	g	Q	Q	Ð	ę	Ð	Q	ę	Q
Nanhthalene	NN	NA	NA	NA	NA	NA	NA	VN	NA	NA	NA
Styrene	Ê	Ð	Ð	Ð	Ð	£	£	£	₽	Ð	Q
Total VOCe	0	•	0	0	•	0		0	0	0	0

4

NOTES AND ABBAEVATONS: 1. NOC.: volutio agains compound: 2. NO: compouts of detected above embrod detection limit. 3. AN: en avayout. 4. INPLUENT: Vapor analysis collected after Doning through pittany carbon treatment durn (rind-carbon). 4. EFPLUENT: 1: types requise collected after Doning through pittany carbon treatment durn (rind-carbon). 4. EFPLUENT: 1: types requise collected after Doning through pittany carbon treatment durn (rind-carbon). 5. EFPLUENT: 1: types requise collected after Doning through pittany carbon treatment durn (rind-carbon). 7. Strupter analyzed by gas chronosterpuch at Hidry & Aldrich tabosatory.

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TABLEII
CHEMICAL ANALYSIS OF SUB-SLAB VENTING SYSTEM VAPOR SAMPLES
129 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT (
MALDEN MARCATULISETTS

Page 4 of 4

INELLENT		65.					
Sample Date	28 Months 2-May-02	29 Months 5-hun-02	30 Months 27-Jun-02	31 months 30-Jul-02	32 months 27-Aug-02	33 Months 25-Sep-02	
PID Reading (ppm)	0	0	Ċ	0	0	0	
Commund (ne/1.)							
Benzene	Q	ę	Q	£	£	Q	
Toluene	Q	ę	Ð	Ð	ę	Ð	
Fihvlibenzene	QN	QN	Q	2	Ð	QZ	
M&P Xviere	g	Q	Q	2	Ð	Ð	
O Xviene	g	QN	Ð	2	2	ĝ	
Nardithalene	NA	NA	NA	NA	NA	NA NA	
	61	£;	Ę	Ę	2	Q	
Total VOCs	•	0	0	0	0	0	

1

EFFLUENT - 1 Sampling Increment Sample Date	28 Months 2-May-02	29 Months 5-Jun-02	30 Months 27-Jun-02	31 months 30-Jul-02	32 months 27-Aug-02	33 Months 25-Sep-02	
PID Reading (ppm)	o	0	0	0	0	0	
Compound (ug/L)	CZ.	£	£	Q	£	QN	
Toluene	9	£	Ð	9	£	£	
C.bullenrene Gibvillenrene	Ð	£	Q	Ð	R	Ð	
Article Xulana	Ð	£	ę	£	ę	£	
Video	Ę	£	Q	£	ę	Ð	
Mashthalans	NA	VN	NA	NA	NA	NA	
Styrene	Q	£	ę	₽	£	Ð	
Total VOCs	a	0	0	0	0	0	
			1				
and the second se	1000 Contract Contract						

EFFLUENT - 2 Sampling Increment Sample Date PID Reading (ppm) Compound (ag/L) Benzene Environe	28 Months 2.May-02 0 ND ND ND ND	29 Months 5-Jun-02 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	30 Months 27-Jun-02 0 0 ND ND ND ND ND ND	30-Jul-02 0 CM	32 months 27-Aug-02 0 ND ND ND ND S S	33 Months 25.5ep-02 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
O Xylene	82	22	QN N	₽ ₹	₽ź	a v
Naphthalene Styrene	22	[m	£	£ .	ę.	₽ •
		*	•	•		0

10

NOTES AD ALBREVATIONS:
 VOCE: valuatio organic compounds
 NN: compound for denoted abuve method denotion limit.
 NN: non analyzed.
 NN: non analyzed.
 NN: pre-turberts obtained pilor to carbon treatment.
 NN: pre-turberts value collected of the florating through primary carbon treatment drum (post-carbon).
 EFFLUENT - 1: Vapor samples collected of the florating through according tabban treatment drum (post-carbon).
 EFFLUENT - 1: Vapor samples collected of the florating through according tabban treatment drum (post-carbon).
 Samples analyzed by g an chronolograph at Haby & Aldichi laboratory.

g:\06558\630\tblsRAM9

TABLE: III SUMMARY OF QUARTERLY INDOOR AIR QUALITY DATA - JUNE 2001 THROUGH PRESENT 129 CCMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE MALDEN, MASSACHUSETTS

	Quarterly Sar Dual Round	npling Event s Collected		Quarterly Sar Single Roun	npling Events ds Collected		MADEP Indoor Air
	6/29/2001	7/1/2001	10/11/2001	1/10/2002	4/10/2002	6/25/2002	Background
VOCs (ppbV)							
Site 2							
Benzene	ND(0.31)	ND(0.63)		0.71	ND(0.31)	ND(0.31)	6.6
Toluene	1.9	1.2	- 1	1.4	1.1	2.5	7.6
Ethylbenzene	ND(0.23)	ND(0.45)		ND(0.23)	0.52	ND(0.23)	2.2
m-&p-xylenes	0.78	ND(0.45)		0.74	ND(0.23)	0.64	9
Styrene	ND(0.23)	ND(0.47)		ND(0.23)	ND(0.23)	ND(0.23)	
o-xylenes	ND(0.23)	ND(0.45)	1000	ND(0.23)	ND(0.23)	ND(0.23)	9
Naphthalene	ND(0.19)	ND(0.33)		ND(0.19)	ND(0.19)	ND(0.19)	1
Total Detected VOCs	2.68	1.20	-	2.85	1.62	3.14	
Site 4							
Benzene	0.68	ND(0.63)	ND(0.31)	ND(0.31)	ND(0.31)	0.44	6.6
Toluer.e	4.4	1.7	5.5	5.2	5.1	9.2	7.6
Ethylbenzene	1.5	ND(0.46)	0.44	ND(0.23)	ND(0.23)	0.71	2.2
m-&p-xylenes	5.3	ND(0.46)	1.3	1.0	0.56	2	9
Styrene	ND(0.23)	ND(0.47)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	-
o-xylenes	1.6	ND(0.46)	0.45	ND(0.23)	ND(0.23)	0.51	9
Naphthalene	1.1	ND(0.38)	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)	1 1
Total Detected VOCs	14.6	1.7	7.7	6.2	5.7	12.9	
Site 5							
Benzene	2.1	ND(0.63)	ND(0.63)	ND(0.63)	ND(0.31)	ND(0.31)	6.6
Toluene	18	29	4.6	5.1	3.8	13	7.6
Ethylbenzene	0.85	ND(0.46)	ND(0.46)	ND(0.46)	0.31	0.57	2.2
m-&p-xylenes	2.8	ND(0.46)	0.81	1.1	1.0	1.5	9
Styrene	ND(0.23)	ND(0.47)	ND(0.47)	ND(0.47)	ND(0.23)	ND(0.23)	-
o-xylenes	0.86	ND(0.46)	ND(0.46)	ND(0.46)	ND(0.23)	ND(0.23)	9
Naphthalene	ND(0.19)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.19)	ND(0.19)	1 1
Total Detected VOCs	24.6	29.0	5.4	6.2	5.1	15.1	
Site 6							
Benzehe	9.9	ND(0.(3)	3.4	12	ND(6.3)	1.9	6.6
Toluene	14	2.2	8.3	10	ND(5.3)	11	7.6
Ethyltenzene	ND(0.23)	ND(0.46)	ND(0.23)	ND(0.92)	ND(4.6)	ND(0.23)	2.2
m-&p-xylenes	0.77	0.47	0.64	ND(0.92)	ND(4.6)	0.6	9
Styrene	0.64	1.5	ND(0.23)	ND(0.94)	ND(4.7)	ND(0.23)	
o-xylenes	ND(0.23)	ND(0.4-6)	ND(0.23)	ND(0.92)	ND(4.6)	ND(0.23)	9
Naphthalene	ND(0.19)	ND(0.38)	ND(0.19)	ND(0.76)	ND(3.8)	ND(0.19)	1
Total Detected VOCs	25.3	4.2	12.3	22.0	ND	13.5	

NOTES AND ABBREVIATIONS:

 MADEP Background: Indoor air background levels obtained from Users Guide. Risk Assessment Shortform Residential Exposure Scenario. Version 1.6. October 1992. Folicy #WSC/ORS-142-92. Adapted from Table 6-4, p. 33. Massachusetts Department of Environmental Protection, Office of Research and Standards and Bureau of Waste Site Cleanup. Boston, MA.

2. VOC (ppb): volatile organic compounds with values in parts per billion by volume; analyzed by EPA Method T014.

3. ND: compound not detected above quantitation limit, number in parentheses is the quantitation limit.

4. TR: compound detected below the quantitation limit, number in parentheses is the quantitation limit;

5. Tetal Detected VOCs: Sum of detected concentrat ons of target analytes.

6. Bold values identify test results which exceed MADEP indoor air background levels.

7. CFM: cubic feet per minute

8. Sampling on 7/1/01 occurred while facility was in 1on-production mode, sampling on other dates was performed during production hours.

TABL'E III SUMMARY OF QUARTERLY INDOOR AIR QUALITY DATA - JUNE 2001 THROUGH PRESENT 129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE MALDEN, MASSACHUSETTS

	Quarterly San Dual Round	mpling Event is Collected		Quarterly Sa Single Rour	mpling Events ads Collected		MADEP
	6/29/2001	7/1/20(1	10/11/2001	1/10/2002	4/10/2002	6/25/2002	Background
VOCs (ppbV)						· · · · · · · · · · · · · · · · · · ·	
Site 7	1						
Benzene	11	ND(0.63)	3.6	14	1.4	1.8	6.6
Toluene	5.5	2.5	2.9	3.5	3.0	5	7.6
Ethylbenzene	ND(0.23)	ND(0.46)	ND(0.23)	ND(0.92)	ND(0.46)	ND(0.23)	2.2
m-&p-xylenes	1	0.5	0.58	ND(0.92)	ND(0.46)	0.68	9
Styrene	ND(0.23)	0.65	ND(0.23)	ND(0.94)	ND(0.47)	ND(0.23)	
o-xylenes	ND(0.23)	ND(0.46)	ND(0.23)	ND(0.92)	ND(0.46)	ND(0.23)	9
Naphthalene	0.48	0.32	ND(0.19)	ND(0.76)	ND(0.38)	ND(0.19)	1
Total Detected VOCs	17.98	3.97	7.08	17.50	4.4	7.48	
Site 8							
Benzene	11	ND(0.63)	3.9	15	ND(6.3)	0.97	6.6
Toluene	2.5	2.5	2.1	2.8	ND(5.3)	2.3	7.6
Ethylbenzene	ND(0.23)	ND(0.46)	ND(0.46)	ND(1.8)	ND(4.6)	ND(0.46)	2.2
m-&p-xylenes	0.77	ND(0.46)	0.68	ND(1.8)	ND(4.6)	0.68	9
Styrer.e	0.4	0.82	ND(0.47)	ND(1.9)	ND(4.7)	ND(0.47)	-
o-xylenes	ND(0.23)	ND(0.46)	ND(0.46)	ND(1.8)	ND(4.6)	ND(0.46)	9
Naphthalene	0.64	ND(0.38)	ND(0.38)	ND(1.5)	ND(3.8)	ND(0.38)	1
Total Detected VOCs	15.31	3.32	6.68	17.80	ND	3.95	198.0
Site 10							
Benzene	9.6		2.4	10	ND(6.3)	1.7	6.6
Toluene	4.4	1-14	2.2	2.9	ND(5.3)	2.2	7.6
Ethylbenzene	2.5		0.74	ND(1.8)	ND(4.6)	0.71	2.2
m-&p-xylenes	3.1		1.2	ND(1.8)	ND(4.6)	1.3	9
Styrene	6		3.7	2.1	ND(4.7)	4.7	-
o-xylenes	1.4		0.51	ND(1.8)	ND(4.6)	0.51	9
Naphihalene	8		ND(0.19)	ND(1.5)	ND(3.8)	ND(0.19)	1
Total Detected VOCs	35.00		10.75	15	ND	11.12	
				Concern -			

NOTES AND ABBREVIATIONS:

- VOC (ppb): volatile organic compounds with value: in parts per billion by volume; analyzed by EPA Method T014.
- 3. ND: compound not detected above quantitation limit, number in parentheses is the quantitation limit.

6

- 4. TR: compound detected below the quantitation limit, number in parentheses is the quantitation limit;
- 5. Total Detected VOCs: Sum of detected concentrations of target analytes.
- 6. Bold values identify test results which exceed MADEP indoor air background levels.
- 7. CIPM: cubic feet per minute
- 8. Sampling on 7/1/01 occurred while facility was in non-production mode, sampling on other dates was performed during production hours.

MADEP Background: Indoor air background levels obtained from Users Guide. Risk Assessment Shortform Residential Exposure Scenario. Version 1.6. October 1992. Folicy #WSC/ORS-142-92. Adapted from Table 6-4, p. 33. Massachusetts Department of Environmental Protection, Office of Research and Standards and Bureau of Waste Site Cleanup. Boston, MA.

	Monitoring Date	Lime	Influent C. PID (ppm)	oncentrations H&A GC (ug/L)	Effluent Co Effluent - 1 (ppm)	ncentrations Effluent - 2 (ppm)	Outdoor Temp	Outlet Vapor Temp	Flow Velo. Influent	(fl/mln) Effluent	System Vac Blower	uum and Pres. Knockout Drum	sure (" water) Discharge	EP-1	cuum at Ex EP-2	traction Po EP-3	EP-4	EP-5
	November 18, 1999	4:40	•			0			0	0	0	0	0	0	0	0	0	0
	November 18, 1999	5:47	82.4	445	ŝ	ŝ		82	750	1600	7.5	0	ę	0	•	0	¢	0
	November 16, 1999	17:00	129		0 0	0 0		100.5	750	1600	7.75		9					
	November 17, 1999	18:30	122		00			102	8	1450	8.5	- +-	40.5					
	November 18, 1999	7:05	128		0	0		101	390	1450	80	F	17					
	November 18, 1999	17:35	105		0	0		112	390	1450	8.5	1.5	40	0.4	0	0	•	0
	November 19, 1999	7:10	69	137	0	0		Ħ	390	1450	80	1,5	41					
	November 18, 1999	17:05	4.4		17.1	0	57	121	390	1450	8.5	1.5	9 :					
	November 20, 1999	14:07	27.8		67.78 6.18	0 0	8	132	88	1450	6.5 0	n (e	c	¢	c	c
	INOVERIDER 21. 1969	51.58 60.68	222		87.8		8 3	R		1450	0 4	A S	99	V	7	•	>	4
	November 23, 1999	05-1	87.5	210	17.2		38	121.5	380	1450	8.5	2.8	40.5					
Memory 7, 100 73 3 Memory 7, 100 73 3 0 Memory 7, 100 73 3 0 0 0 0 Memory 7, 100 73 3 0 0 0 0 0 0 Memory 7, 100 73 3 0	November 24, 1999	4:15	45		205	0	8	123	390	1450	8.5	2.8	40	2	2	-	0	2
	November 26, 1999	7:35	24		0	0	45	112	390	1450	8.5	e	40.5					(
	November 27, 1989	8:45	15.5		•	0	55	122	390	1450	8.5	n	40					
	November 29, 1999	1:00	12	and the second	5.5	•	32	105	390	1450	a D (2.8	40.5	•	4	c	c	•
	November 30, 1999	8.4	10.5	183	14	• •	8	101.5	065	1450	D G	5	44.5	5	2	5	>	>
	December 2, 1969		• 0		.	.	9 9	0.14		1450	c. a	28	7					
Decomponent () (600 COURT COURT <td>December 0, 1989</td> <td>17:38</td> <td></td> <td></td> <td></td> <td>- c</td> <td>3 2</td> <td>118</td> <td>380</td> <td>1450</td> <td></td> <td>22</td> <td>\$</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>F</td>	December 0, 1989	17:38				- c	3 2	118	380	1450		22	\$	0	0	0	0	F
Distorter Control Contro Control Control <	December 14 1909	9-20	2 6	07	0	0	9	8	390	1450		2.4	4					
Domentary 31 (no) 160 102 100 102 100 102	December 17, 1909	9.52	0.6		0	0	25	109	390	1450	8	2.5	1					
Humany (2000 CO1 CO1 <t< td=""><td>December 22, 1999</td><td>18:40</td><td>0.2</td><td></td><td>0</td><td>0</td><td></td><td>102</td><td>390</td><td>1450</td><td>Ø</td><td>2.5</td><td>;</td><td>0</td><td>0</td><td>•</td><td>0</td><td>-</td></t<>	December 22, 1999	18:40	0.2		0	0		102	390	1450	Ø	2.5	;	0	0	•	0	-
Manualy A (2000 E[6] C (2)	January 4, 2000	9:25	0.1		9.4	•	ŝ	88	8	1450	8.9 1.0	~ ~	Q					
	January 4, 2000	18:05	5.0		1.1	0 0	8 1			1450	0.0	57	99					
American (C) (C) (C)	January 5, 2000	12.16	50		10	5 6	8 4 2	113	88	1450	8	22	9	0	0	0	•	0
Answer (1, 2000) (15, 10)	Jameary 10, 2000	18:15	0.2	2	02		47	108	390	1450	8	2.2	37.5					
Amenary 9, 2000 533 0 200 100 <	January 14, 2000	10:45	0.1		•	0	ŝ	8	390	1450	8.5	15	9				•	•
Handy N.2000 (15) (16)	January 19, 2000	5.35	0		0 0	0 0	0,	83	390	0041	G 1	0 ¢	5 92	•	200	-	2	4.5
Manualy 7, 2000 973 910 910 910 913	January 19, 2000	1.05	201		.	. .	• t	5 6	1500	1490	17.5	2 #	34.5	5.5	4	-	0	4.5
January 21, 2000 1130 201 9 0 10 20	January 10, 2000	8.25 8	310		0	0	? wo	8	1500	1490	17.5	10.5	33.5					
Altanary 21, 2000 530 240 100 100 11 10 24 45 </td <td>January 20, 2000</td> <td>11:30</td> <td>203</td> <td></td> <td>. 0</td> <td>0</td> <td>10</td> <td>8</td> <td>1500</td> <td>1490</td> <td>17.5</td> <td>10.5</td> <td>34.5</td> <td></td> <td>15200</td> <td>89</td> <td>1</td> <td></td>	January 20, 2000	11:30	203		. 0	0	10	8	1500	1490	17.5	10.5	34.5		15200	89	1	
January 22, 2000 1355 255 0 7 0	January 21, 2000	5:30	240		186	0	10	88	1500	1490	17	6	8	ŝ	4	••	• •	• •
January Z, 2000 1320 232 100	January 22, 2000	13:55	255		243	0	us (83	1500	1490	::	₽ \$	3 2	n w	0 K	* 4	.	• •
January 2, 2000 750	January 23, 2000	13:20			-		88	88	met .	1400	17	2 9	3 13	•	2		1	
January 3, 2000 (16) (17) (10) (14) (16) (16) (17) (10) (14) (16) (16) (17) (10) (16) (16) (16) (17) (10) (14) (16) (16) (16) (16) (16) (16) (16) (16) (16) (16) (16) (16) (17) (10) (16)	January 24, 2000	1.00	55 105	787	0	0 0	2 E	88	1500	1490	17.5	11	8					
January 21, 2000 745 215 778 0 15 95 1500 140 17 10 34 January 21, 2000 1230 180 0 15 95 1500 140 175 11 34 January 21, 2000 1230 180 0 16 100 175 11 34 January 21, 2000 1330 180 0 16 100 150 149 11 35 January 21, 2000 1320 180 0 149 0 149 11 35 33 January 31, 2000 1320 180 160 160 160 175 115 35 35 January 31, 2000 1320 180 160 160 160 175 115 35 45 45 45 45 45 45 45 45 45 45 45 45 45 45 45 45 45 45	January 25, 2000	18:10	181 181	1	0	0	3	8	1500	1490	17	9	R :					
January 21, 2000 223 122 3 100	January 28, 2000	7:45	215		78	0	15	8	1500	1490	¢ (₽ ;	a a					
January 27, 2000 (150) (January 26, 2000	12:30	228		ត្ត ៤	0 0	84	<u>3</u> 8	002	1490	17.5	2 🗜	5					
January 28, 2000 7:50 153 166 0 10 145 105 33 January 28, 2000 1320 146 145 105 33 January 31, 2000 2520 146 145 115 15 105 33 January 31, 2000 2520 146 145 115 15 105 33 January 31, 2000 2520 146 146 15 115 15 115 33 January 31, 2000 1200 1460 147 111 113 33 January 31, 2000 1200 146 146 15 114 113 33 January 31, 2000 1200 146 146 175 115 33 January 31, 2000 1200 146 146 175 115 33 January 31, 2000 1200 146 146 175 115 33 January 31, 2000 1200 146 146 175 111 113 33 January 31, 2000 1200 146 146 175 111 113 33 January 31, 2000 1200 146 175 111 13 January 32, 2000 1201 146 15 114 113 January 32, 2000 1201 146 15 114 13 January 32, 2000 1201 146 15 114 13 January 32, 2000 1201 146 175 111 33 January 32, 2000 1201 146 15 114 13 January 32, 2000 1201 146 175 111 33 January 32, 2000 1201 146 175 January 32, 20	January 27, 2000	02.01	5 P		00	0 0	2 8	2 2	1500	1480	18	11	35					
January 36, 2000 1320 160 145 0 20 100 1500 1480 175 105 38 January 26, 2000 1320 169 145 0 1500 1480 175 105 38 January 31, 2000 2320 169 169 17 11 12 33 5 45 45 45 41 12 33 5 45 45 41 12 33 5 45 45 41 12 33 5 45 45 41 12 33 5 45 45 41 12 33 5 45 45 41 12 33 5 45 45 41 12 33 5 45 45 41 12 33 5 45 45 41 12 33 5 45 45 41 12 33 5 45 45 41 12 33 5 45 45 41 12 33 5 45 45 41 12 33 5 45 41 12 33 5 45 41 12 33 5 45 41 12 33 5 45 41 12 33 5 45 41 12 33 5 45 41 12 33 5 45 41 12 33 5 45 41 12 33 5 45 41 12 33 5 45 41 12 33 5 41 12 13 34 12 12 33 5 41 12 12 12 12 12 12 12 12 12 12 12 12 12	January 28, 2000	7.50	18		99	0	0	a	1500	1490	17.5	10.5	35					
January 31, 2000 12:10 149 10 00 1500 1430 11 10 35 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.	January 28, 2000	13:20	166		145	0	20	8	1500	1480	17.5	10.5						356
January 11, 2000 2530 119 20 20 119 11, 2000 2530 119 11, 2000 2530 119 11, 2000 2530 119 11, 2000 2000 210 11, 2000 2000 210 11, 2000 2000	January 30, 2000	12:10	149		0 5	• •	Ş (8 5	021	39	2 5	₽ ₽	3 19					2
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Aonitoring Date	E	Diq Did	Concentrations H&A GC	Effluent Co Effluent - 1 from)	ncentrations Effluent - 2 from	Outdoor	Outlet Vapor Temo	Flow Velo Influent	city (ft/min) Effluent	System Vac Blower	www.and Press Knockout Drum	ture (" water) Discharge	Vac EP-1	uum at Exb EP-2	etion Paint EP-3 E	("water) P.4 E
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TABLE IV SUB-SLAB VENTING SYSTEM MONITORING DATA 129 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE MALDEN, MASSACHUSETTS

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Effluent Co Effluent - 1 (ppm)	02	0.1	0.2	2.0	23	77	N				90	01	0.0	0.1	0.1	0.2	¥.0	5.	1 0	0.6	0.2	0.3	1.2	0.8	8 0 0	0.5	0.4	0	\$		0	0	0 0		• •	0	a c	, 0	0	•	0 0		• •	0			0 0	0	0	0 0			•
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System Down System Down, electrical repairs made, system re-start Vacuum at Extraction Points (" water) EP-2 EP-3 EP-4 EP-5 0 System Down, re-started System Down, re-started System Down, re-started EP.1 System Vacuum and Pressure (" water) Blower Knockout Discharge Drum 10 10 10 10 10 10 10 10 10 10 2222 11222121220000 00 How Velocity (filmin) Influent Effluent Outlet Vapor Temp Outdoor Temp Effluent Concentrations Effluent - 1 Effluent - 2 (ppm) (ppm) 00 0000 000000000000 TABLE IV SUB-SLAB VENTING SYSTEM MONITORING DATA 128 COMMRERCIAL FIREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE ANDEN, MASCHURSETTS 0000 0 HEA GC (up/L) 0 ø 0 0 (mfuent C PID (ppm) ••••••••••••••••• 0000000000000 00 0000 7730 77400 7740 11mm July 5, 2001 July 6, 2001 July 6, 2001 July 13, 2001 July 13, 2001 July 14, 2001 July 14, 2001 July 14, 2001 July 21, 2001 July 21, 2001 July 22, 2001 July 22, 2001 July 22, 2001 July 24, 2001 July 24, 2001 August 10, 2001 August 12, 2001 August 24, 2001 December 18, 2001 December 18, 2002 January 11, 2002 January 14, 2002 January 12, 2002 January 14, 2002 January 14, 2002 January 18, 2002 January 24, 2002 January Monitoring Date

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TABLE IV SUB-SLAB VENTING SYSTEM MONITORING DATA 128 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE NALDEN, MASSACHUSETTS MALDEN, TANAN THAN THE MARKEN AND THE THIMMAT 2 OUTLOOP VIDEO THOMATT CONCENTRIONS

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FIGURE 1





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APPENDIX A

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Copy of Form BWSC-106

Massachusetts Department of Environmental Pr	otection BWSC-106
	COPY
MEASURE (RAM & URAM) TRANSMITTAL FORM	Release Tracking Number
Pursuant to 310 CMR 40.0444 - 0446 and 310 CMR 40.0462 - 0465	(Subpart D) <u>3</u> - <u>362</u>
A. SITE LOCATION:	
Site Name: <u>Former Manufactured Gas Plant (MGP) Site</u> (optional)	·····
Street: 129 Commercial Street Location Aid: SW	Corner Comm. & Charles Street
City/Town: Malden ZIP _0214	8-0000
Check here if a Tier Classification Submitial has been provided to DEP for this Release Trackin	g Number.
Related Release Tracking Numbers That This RAM or URAM <u>3-3757</u>	
B. THIS FORM IS BEING USED TO: (check all that apply)	
Submit a RAM Plan (complete Sections A, B, C, D, E, F, J, K, L and M). Check here if this RAM Plan is an update or modification of a previously approved written Plan.	RAM Date Submitted:
Submit a RAM Status Report (complete Sections A, B, C, E, J, K, L and M).	
Submit a RAM Completion Statement (complete Sections A, B, C, D, E, G, J, K, L and M).	
Confirm or Provide URAM Notification (complete Sections A, B, H, K, L and M).	
Submit a URAM Status Report (complete Sections A, B, C, E, J, K, L and M).	
Submit a URAM Completion Statement (complete Sections A, B, C, D, E, I, J, K, L, and M).	
You must attach all supporting documentation required for each use of form i any Legal Notices and Notices to Public Officials required by 31	ndicated, including copies of 0 CMR 40.1400.
C. SITE CONDITIONS:	· ····
Check here if the source of the Release or Threat of Release is known.	
If yes, check all sources that apply: UST Pipe/Hose/Line AST [Drums Transformer Boat
Tanker Truck 🗌 Vehicle 👽 Other Specify: Disposal associated in	with former MGP operations
Identify Media and Receptors Affected: (check all that 🛛 🖌 Air 📝 Groundwater 🗌 Su	rface Water 📄 Sediments √ Soil
Wetlands Storm Drain Paved Private Well Public V	Vater Supply Zone 2 Residence
Schoo Unknown Other Specify:	
Identify Release and/or Threat of Release Conditions at Site: (check all that apply)	
2 and 72 Hour Reporting Condition(s) 120 Day Reporting Condition(s)	Other Condition(s)
Describe DEP granted waiver in April 1990 indicating its st	atus as a confirmed
non-priority site. Site classified as Tier IB, effective	e on 28 December 1999.
RAMs may be conducted concurrently with an IRA only with written URAMs may not be conducted if any 2 or 72 Hour conditions exis	DEP approval t at the site.
Identify Oils and Hazardous Materials Released: (check all that Oils Ch	orinated Heavy Metals
V Others Specify: MGP contaminants; VOCs, PAHs, cyanide	
D. DESCRIPTION OF RESPONSE ACTIONS: (check all that	2 8 - Streichter - Constante r - St
Assessment and/or Monitoring Only	ployment of Absorbant or Containment iterials
Excavation of Contaminated Soils	mporary Covers or Caps
Re-use, Recycling or Treatment	premediation
On Site Off Site Est. Vol.: cubic yards	il Vapor traction
Describe: St	ucture Venting System
Store On Site Off Site Est. Vol.: cubic yards	oduct or NAPL
SECTION D IS CONTINUED ON THE NEXT PAGE	E.
Revised 2/24/95 Supersedes Forms BWSC-007, 008, 009 and 010 (i Do Not Alter This Form	n part) Page 1 of 4



5	Massachusetts Dep	artment of Envi	ironmental Pro	otection	BWSC-106
6.	BULEAU OF WASTE SILE	Cleanup	e	nov	
	RELEASE & UTILITY MEASURE (RAM &	Y-RELATED AB URAM) TRANSI			Release Tracking Number
DEP	Pursuant to 310 CMR 40.04	44 - 0446 and 310 CM	MR 40.0462 - 0465	(Subpart D)	3 - 362
URAM COMPLET	ION STATEMENT:	· · · · · · · · · · · · · · · · · · ·	in the second		
Check here if thi more than 20 cu	s URAM was limited to the excar bic yards of soil contaminated by	vation and/or handling of either a Hazardous Ma	f not more than 100 cu terial or a mixture of a	bic yards of soil cor Hazardous Material	itaminated by Oil, or not and Oil.
If any Remediation Statement, you mu	Waste will be stored, treated, st submit either a Release Aba appropriate transmitta	managed, recycled or l itement Measure (RAM I form, as an attachmei	reused at the site fol) Plan or a Phase IV nt to the URAM Com	lowing submission Remedy Implemen pletion Statement.	of the URAM Completion tation Plan, along with the
J. LSP OPINION:			1911 ave -		
I attes:t under the pair documents accompa CMR 4.02(1), (ii) the knowledge, information	ns and penalties of perjury that in nying this submittal. In my profe applicable provisions of 309 CM on and belief.	have personally examin ssional opinion and judg R 4.02(2) and (3), and (ii	ed and am familiar wi ment based upon app i) the provisions of 30	th this transmittal for lication of (i) the sta 9 CMR 4.03(5), to th	m, including any and all ndard of care in 309 ie best of my
> if Section B of this this submittal (i) has appropriate and reas CMR 40.0000 and (ii)	form indicates that a Release A (have) been developed in accord onable to accomplish the purpos i) complies(y) with the identified	batement Measure Plan lance with the applicable es of such response act provisions of all orders, p	n is being submitted, t provisions of M.G.L. ion(s) as set forth in th permits, and approvals	he response action(c. 21E and 310 CM le applicable provisi i identified in this su	s) that is (are) the subject of < 40.0000, (ii) is (are) ons of M.G.L. c. 21E and 310 bmittal;
 if Section B of this being submitted, the provisions of M.G.L. set forth in the applic and approvals identifi 	form indicates that a Release A response action(s) that is. (are) t c. 21E and 310 CMR 40.)000, (i able provisions of M.G.L. c. 21E fied in this submittal;	batement Measure Sta he subject of this submit i) is (are) appropriate an and 310 CMR 40.0000	tus Report or a Utility tal (i) is (are) being im d reasonable to accor and (iii) complies(y) w	y-Related Abateme plemented in accord nplish the purposes ith the identified prov	nt Measure Status Report is lance with the applicable of such response action(s) as visions of all orders, permits,
if Section B of this Completion Statem implemented in acco accomplish the purp complies(y) with the	form indicates that a Release A ent is being submitted, the respondence with the applicable provisions ones of such response action(s) identified provisions of all orders	batement Measure Countries action(s) that is (and signs of M.G.L. c. 21E and as set forth in the applic , permits, and approvals	mpletion Statement of e) the subject of this s nd 310 CMR 40.0000, able provisions of M.G i identified in this subn	or a Utility-Related . ubmittal (i) has (hav (ii) is (are) appropria i.L. c. 21E and 310 (hittal;	Abatement Measure e) been developed and ate and reasonable to CMR 40.0000 and (iii)
I am aware that sign to be false, inaccura	ificant penalties may result, inclu te or materially incomplete.	iding, but not limited to, j	possible fines and imp	risonment, if 1 subm	it information which I know
Check here if the issued by DEP	ne Response Action(s) on which or EPA. If the box is checked,)	this opinion is based, it is ou MUST attach a state	any, are (were) subject ment identifying the a	t to any order(s), pe pplicable provisions	thereof.
LSP Name: Richa	ard P. Standish	_ LSP #: <u>2242</u>	Stamp:	CALTH OF MASS	4
Telephone 860-6	59-4248	<u>Ext.:</u>			
: FAX: (opticinal) Signature:	elver & Then	lan		RICHARD P. STANDISH No. 2242	
Date:	20 September	. 2002		SITE PROTES	N.
	An LSP Opinion is no	t required for a Utility-	Related Abatement N	leasure Notification	n.
An LSP Opinion is 100 cubic yard	not required for a URAN Comp Is of soil contaminated by Oil,	bletion Statement if the or not more than 20 ci a mixture of Hazardou	URAM is limited to ubic yards of soil cou us Material and Oil.	the excavation and ntaminated either b	/or handling of not more the y Hazardous Material or
K. PERSON UNI	DERTAKING RAM OR URAN	/ :			
Name of Organization: Name of	<u>Massachusetts Ele</u>	ctric_Company_	Title: <u>Senio</u>	r_Environmen	tal Engineer
Contact: Street: 55 Bear	foot Road				
City/Town: Nort	hborough		State _MA	ZIP Code: _0	1532-0000
Telephone: 508-	421-7564	Ext.:	FAX:	508-890-4706	<u> </u>
Check here if t	here has been a change in pers	on undertaking the RAM	(optional) For URAM.		
<u> </u>					
Revised 2/24/95	Superse	des Forms BWSC-00	7, 008, 009 and 010) (in part)	Page 3

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<u>î î î î î î</u>		ite Lleanin			51100-100
A				COPY	
	MEASURE (RAM	& URAM) TRANS	MITTAL FO	ORM	Release Tracking Number
ЧЕР	Pursuant to 310 CMF: 40	.0444 - 0446 and 310 Cl	MR 40.0462 - (0465 (Subpart D)	3 - 362
L. RELATIONSH	IP TO SITE OF PERSON U	NDERTAKING RAM or	URAM: (che	ck one)	
RP or PRP S	pecify Owner Op	erator () Generator ()	Transporter O	ther RP or PRP:	
Fiduciary, Sec	ured Lender or Municipality with	h Exempt Status (as defined	1 by M.G.L. c. 2	IE, s. 2)	
Agency or Pub	lic Utility on a Right of Way (as	defined by M.G.L. c. 21E,	s. 5(j))		
Any Other Pen <u>Fielationship</u> :	son Undertaking RAM or URAM	M Specify	÷		
M. CERTIFICATI	ON OF PERSON UNDERT	AKING RAM OR URAM			
I, <u>Mic</u> am familiar with the my inquiry of those best of my knowled legally responsible includ ng, but not lir	hele V. Leone information contained in this sindividuals immediately respon ge and belief, true, accurate an for this submittal. I/the persion nited to, possible fines and imp	, attest under the p ubmittal, including any and sible for obtaining the inforr id complete, and (iii) that I a or entity on whose behalf th risonment, for willfully subm	pains and penali all documents a nation, the mate m fully authorize is submittal is m nitting false, inac	ies of perjury (i) that I hav ccompanying this transmi rial information contained ad to make this attestation ade am/is aware that the ccurate, or incomplete info	ve personally examined and ttal form, (ii) that, based on in this submittal is, to the n on behalf of the entity re are significant penalties, ormation.
BV: M	Vicence		Title: Sei	nior Environmen	tal Engineer
(signature)				intution	
For <u>Massachus</u> : (print name of	etts Electric Comp person or entity recorded ir Se	any ction K)	Date:	1014102	
Enter address of pe K: Street:	rson providing certification if d	ifferent from address record	led in Section		
City/Town:			State	ZIP Code:	
Telephone:		Ext	: FAX: (optio	nai)	
YOU MUS	T COMPLETE ALL RELEV	ANT SECTIONS OF TH	IS FORM OR ORM, YOU M/	DEP MAY RETURN T AY BE PENALIZED FO	HE DOCUMENT AS DR MISSING
IN(OMPLETE. IF YOU SUBN	A REQUIRED D	EADLINE.	· · · · · · · · · · · · · · · · · · ·	
	COMPLETE. IF YOU SUBN	A REQUIRED D	EADLINE.	. <u></u>	
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IN(OMPLETE. IF YOU SUBN	A REQUIRED D	EADLINE.		
	OMPLETE. IF YOU SUBN	AREQUIRED	EADLINE.		
	COMPLETE. IF YOU SUBN	AREQUIRED			
	COMPLETE. IF YOU SUBN	AREQUIRED			



Attachment 1

Section J – LSP Opinion Release Abatement Measure (FAM) Status Report No. 9 Former Manufactured Gas Plant (MGP) Site Parcel B, 129 Commercial Street Malden, Massachusetts RTN 3-0362 and Linked RTNs 3-3757, 3-11581, 3-12448, 3-13310, 3-13345, 3-13753, and 3-13754

Approvals Required

As part of a 1997 Tier II Extension Submittal for RTN 3-0362, a series of RTNs, each of which deals with releases or possible releases of contaminants associated with the former Malden MGP facility, were linked with RTN 3-0362. Parcel B, 129 Commercial Street (RTN 3-3757) was linked with RTN 3-0362 at that time. An IRA is currently being conducted on a portion of the site under RTN 3-0362 located at 100 Commercial Street. The IRA is being conducted under RTN 3-13754. As outlined under 310 CMR 40.0441(3), "RAMs shall not be conducted at any disposal site or portion of a disposal site where an IRA is required or ongoing until such time as written approval to conduct the RAM is obtained from the Department." Written approval of the RAM Plan was issued by DEP on 24 September 1998. A RAM Plan modification was submitted to DEP on 9 April 1999. Written conditional approval of the RAM Plan modification was issued by DEP on 9 June 1999. An additional RAM Plan Modification was submitted to DEP on 24 June 1999. An Amendment of Conditional Approval was issued by DEP on 27 July 1999.

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