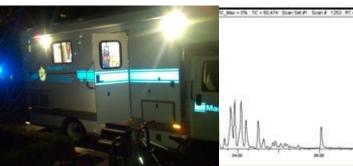
MassDEP Field Assessment and Support Team

After Incident Report	3-30,704
Boston – NSTAR Transformer Fire – Scotia Street	March 2012









Pana 1 of

Background

At approximately 6:30 PM on March 13, 2012, a fire erupted in a concrete building on 19 Scotia Street in Boston. The building was owned by NSTAR and housed two large (115,000 volt) electrical transformers. Thick black smoke billowed from the blaze, prompting the Boston Fire Department to evacuate a number of nearby buildings, including the Back Bay Hilton Hotel at 40 Dalton Street, which was immediately adjacent to the NSTAR building (see Figure 1).



Figure 1: Location of Fire and Surrounding Impacted Receptors

Although details on the causes of the fire are not yet available, it is speculated that leakage of Mineral Oil Dielectric Fluid (MODF) from an electrical conduit that supplies this transformer station may have started and fed the fire. According the NSTAR, the MODF used in these installations were non-PCB. It is estimated that approximately 1000 gallons of MODF from this conduit may have leaked into the sub-structure of this facility.

The fire damaged one of the station's transformers, which shifted the entire electrical load to the other unit, resulting in a shut down. This created a large power outage, affecting more than 20,000 residences and businesses in parts of Boston's Back Bay, South End, Chinatown, Theater District, and Kenmore Square.

The fire was extinguished by Boston Fire Department by around 10 PM.

The building containing the transformers was a relatively new reinforced concrete structure, with metal ventilation grates (which melted from the intense heat). Reportedly, there was no asbestos containing materials in this structure. Once the fire was extinguished, a visual inspection of the areas impacted by the blaze indicated that it appeared largely free of plastic and other polymers that could generate combustion products such as Hydrogen Cyanide (polymers containing nitrogen) and/or Hydrogen Chloride (polymers containing chlorine).

FAST was activated at 8:50 PM, and arrived on scene at approximately 10:40 PM. Boston Fire and Health officials requested that FAST test air within impacted buildings, and provide recommendations on whether conditions were safe for re-occupancy.

AIR TESTING

Based upon weather records for Boston (below), the winds during the time of the fire were from the south at around 10 MPH (Figure 2):

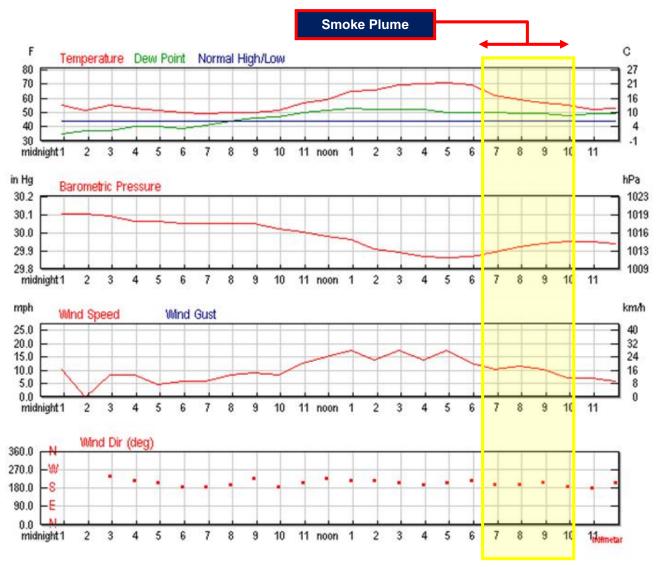


Figure 2: Metrological Conditions in Boston at Time of Fire (Weather Underground)

While overall movement of the smoke plume would be in a northerly direction, the existence of numerous tall buildings undoubtedly created localized eddies and directional anomalies. This is especially true of the 24 story Hilton hotel. While located immediately upwind of the blaze, southerly winds would have likely cause negative pressures on the northerly side of the structure, inducing movement of some of the smoke in that direction.

According to Fire Department officials, the buildings that were most impacted by the smoke plume, based upon visual and olfactory observations, were (a) a Boston Fire Department station 400 feet northerly of the fire at 941 Boylston Street (Engine 33 and Ladder 15); (b) a parking garage located immediately northerly of the fire; and (c) the Hilton Hotel, 40 Dalton Street (See Figure 1).

Accordingly, FAST staff obtained air samples from each building, using a 1 liter air sampling bag and 300 cc/min SKC air sampling pump:

- Boston Fire House: one sample, 2nd floor, southeast corner, dormitory area
- Parking Garage: one sample, 3rd level
- ☞ Hilton Hotel: three samples: 4th floor, 14th floor, 24th floor

Prior to sampling, the indoor air was screened with an MSA Sirius Multi-gas meter for volatile organic compounds (via photoionization detector), explosive gases, oxygen, and carbon monoxide, and with a RAE Systems V-RAE meter for Ammonia and Hydrogen Cyanide. No unusual readings were noted.

The five 1-liter air samples were immediately analyzed on-site in the FAST mobile laboratory, on an Inificon HAPSITE gas chromatograph with a mass spectrometer (GC/MS). The testing method used was calibrated to 35 common air contaminants, with detection limits for most analytes in the high parts per trillion range. In addition to these common contaminants, the HAPSITE GC/MS is capable of tentatively identifying more than 100,000 additional chemical compounds, based upon an automated comparison of mass spectra to a NIST database.

The data report for each analysis is attached.

The fire house and parking garage were largely free of Volatile Organic Compounds. The Hilton Hotel had slightly elevated concentrations of certain hydrocarbons, including Benzene. While these hydrocarbons appear to be fire-related, it is possible that there may have been other sources of these contaminants within the hotel (e.g., cleaning agents). In any event, none of the indentified contaminants, including benzene, exceeded short and intermediate-term exposures guidelines, including the US EPA Acute Exposure Guidelines (AEGLs).

The chromatograms for each sample were also inspected for the presence of significant concentrations of other contaminants (i.e., other than the 35 "target" analytes). While there were some additional contaminants present, they appeared to be related to low-levels of chemicals present within the air sampling bags (a known issue with bags of this nature).

The data reports were printed in the FAST vehicle and provided to local officials in the early morning hours of 3/14/12. Based upon the totality of available information and data, FAST expressed the position that the impacted buildings were safe for reoccupation, with the caveat noted that not all fire-related contaminants could be detected by available on-site equipment, including chemicals present in any soot that had been deposited within these structures. As such, follow-up assessment should be conducted as appropriate.

FAST demobilized from the scene at approximately 3:00 AM on 3/14/12. FAST members participating in this response were Tim Dame, Albe Simenas, and Team Leader John Fitzgerald.

MassDEP Fiel		Section Sector	a conservation of the	And the second statements	77-390-000-000 (ee	REENING	RTN:			
City or Town:	Boston		Address:	1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	800 CB 2000C	1000 A 300 S			HICKNESS .	ation:
Date Sampled:	3/14/12	Time:			-	Collector		fourth floor		bor
Date Analyzed:	3/14/12		12:29 AM	Constant Constant of	003		Fitzgera			
Method Analytes			ntration		ng Limit	Peak	Peak		Indoor Cor	
	6404345	ppbV	μg/m ³	ppbV	µg/m ³	Fit	Purity	50 th %	75 th %	90 th %
Vinyl Chloride		N.D.	N.D.	1	2.58	0	0	<1	<1	<1
Bromomethane	1	N.D.	N.D.	5	22.3	0.919	0.02	<0.25	<0.25	0.6
Chloroethane		6.7	17.8	5	13.2	0.886	0.164	NA	NA	NA
Trichloromonof	ALLEY MODELLAW GOLDAY	N.D.	N.D.	5	35.0	0.981	0.273	NA	NA	NA
1,1-Dichloroeth		N.D.	N.D.	1	3.97	0	0	<2	<2	<2
Methylene Chlo		0.3	1.0	1	3.47	0.949	0.271	1.4	3.7	11
1,1,2-Trichlorot		N.D.	N.D.	5	38.3	0.655	0.184	NA	NA	NA
1,1-Dichloroeth	1. 99 1. 90	N.D.	N.D.	1	4.05	0	0	<2	<2	<2
Cis 1,2-Dichlor	oethylene	N.D.	N.D.	1	3.97	0	0	<2	<2	<2
Chloroform		0.2	1.1	1	4.88	0.987	0.339	1.9	2.6	3
1,2-Dichloroeth	ane	N.D.	N.D.	1	4.05	0.713	0.011	<2	<2	<2
1,1,1-Trichloroe	ethane	N.D.	N.D.	1	5.46	0	0	0.5	1.1	3
Benzene		8.3	26.6	1	3.2	0.991	0.658	2.3	3.6	11
Carbon Tetrach	loride	N.D.	N.D.	1	6.29	0.906	0.155	0.5	0.6	0.9
1,2-Dichloropro	pane	N.D.	N.D.	1	4.62	0	0	<2.3	<2.3	<2.3
Trichloroethyle:	пе	N.D.	N.D.	1	5.37	0.916	0.159	0.3	0.7	0.8
cis-1,3-Dichloro	propene	N.D.	N.D.	1	4.54	0	0	<2.3	<2.3	<2.3
trans-1,3-Dichlo	propropene	N.D.	N.D.	1	4.54	0	0	<2.3	<2.3	<2.3
1,1,2-Trichloroe	ethane	N.D.	N.D.	1	5.46	0	0	<2.7	<2.7	<2.7
Toluene		8.4	31.8	1	3.77	0.996	0.726	11	21	54
1,2-Dibromoeth	ane	N.D.	N.D.	1	7.68	0	0	NA	NA	NA
Tetrachloroethy	/lene	0.3	1.7	1	6.78	0.945	0.779	1.4	2.4	4.1
Chlorobenzene		N.D.	N.D.	1	4.6	0	0	<2.3	<2.3	<2.3
Ethylbenzene		0.3	1.5	1	4.34	0.994	0.601	1.5	2.4	7.4
o/m-Xylene (se	e note)	0.5	2.0	1	4.34	1	0.532	3.8	6.9	21
Styrene		0.4	1.5	1	4.26	0.994	0.584	0.6	1.1	1.4
o-Xylene		0.3	1.2	1	4.34	0.992	0.575	1.9	2.7	7.6
1,1,2,2-Tetrach	loroethane	N.D.	N.D.	1	6.87	0.521	0.071	<3.4	<3.4	<3.4
1,3,5-Trimethyl	A AND STREAM OF A MACHA	N.D.	N.D.	1	4.92	0.933	0.163	NA	NA	NA
1,2,4-Trimethyl		N.D.	N.D.	1	4.92	0.997	0.344	NA	NA	NA
1,3-Dichlorober	Service Service Service	N.D.	N.D.	5	30.1	0	0	< 0.25	< 0.25	0.6
1,2-Dichlorober		N.D.	N.D.	5	30.1	0	0	< 0.25	< 0.25	0.7
1,4-Dichlorober	and a second	N.D.	N.D.	5	30.1	0	0	0.5	0.9	1.5
1,2,4-Trichlorob		N.D.	N.D.	10	74.2	0	0	< 0.25	< 0.25	3.4
HexachloroBut	A CONTRACTOR	N.D.	N.D.	10	107	0	0	< 0.25	< 0.25	4.6
Concentration f									-	
	SITE Smart Plu					a reneral t				<u>.</u>

N.D. = Not Detected Italicized = estimated "J" value (concentration is less than Reporting Li Last Calibration: 9/19/11 Peak Fit=agreement w/ spectral database; Peak Purity=interference from co-eluting compounds. Fit >0.5 likely, >0.85 very

COMMENTS: Chloroethane appears to be a system/bag contaminant. Benzene is slightly elevated but not of immediate concern.

City or Town: Boston		Address: Hilton - 40 Dalton Street						Location:		
Date Sampled:	3/13/12	Time:	11:45 PM		14th flr	2010 C 2020 C 20	Damo		14th floo	- 15050.00
Date Sampled. Date Analyzed:		Time:	1:35 AM	Lab ID:	002a	-	Fitzgera	d	140111001	
ate Analyzeu.	J/14/12		ntration		ng Limit	-	Peak			
Method Analy	tes	ppbV	μg/m ³	ppbV	µg/m ³	Peak Fit	Peak		Indoor Con	
/inyl Chloride		N.D.	μg/m N.D.	1 1	2.58	0.579	0.014	50 th %	75 th %	90 th %
Bromomethane	73	N.D.	N.D.	5	22.3	0.373	0.005	<0.25	<0.25	0.6
Chloroethane		4.8	12.6	5	13.2	0.407	0.005	NA	NA	NA
Trichloromonof	uaramathana	4.0 N.D.	N.D.	5	35.0	0.996	0.174	NA	NA	NA
1,1-Dichloroeth	ALSA MORE AVAILANT	N.D.	N.D.	1	3.97	0.556	0.174	<2	<2	<2
Methylene Chlo		N.D.	N.D.	1	3.47	0	0	1.4	3.7	11
1.1.2-Trichlorot		N.D.	N.D.	5	38.3	0.643	0.106	NA	NA NA	NA
1.1-Dichloroeth		N.D.	N.D.	1	4.05	0.045	0.100	<2	<2	<2
	L. P. C.	N.D.	N.D.	1	3.97	0	0	<2	<2	<2
Cis 1,2-Dichlor Chloroform	betnylene	N.D.	N.D.	1	4.88	0.981	0.402	1.9	2.6	3
1.2-Dichloroeth		N.D.	N.D.	1	4.00	0.901	0.402	<2	<2	<2
1,2-Dichloroeth			N.D.	1		0	0	0.5	1.1	3
	etnane	N.D. 5.3	16.8	1	5.46 3.2	5.	0.661	2.3	3.6	
Benzene Carbon Tetrach	la si da		-			0.992		K		0.9
	2588, 63725-5	N.D.	N.D.	1	6.29 4.62	0	0	0.5 <2.3	0.6	<2.3
1,2-Dichloropro			-	-			0		<2.3	
Trichloroethyler	A11924	N.D.	N.D.	1	5.37	0	0	0.3	0.7	0.8
cis-1,3-Dichloro		N.D.	N.D.	1	4.54		-	<2.3	<2.3	<2.3
rans-1,3-Dichle	and the second second second	N.D.	N.D.	1	4.54	0.602	0.006	<2.3	<2.3	<2.3
1,1,2-Trichloroe	thane	N.D.	N.D.	1	5.46	0	0	<2.7	<2.7	<2.7
Foluene		4.2	15.9	1	3.77	0.996	0.727	11	21	54
1,2-Dibromoeth		N.D.	N.D.	1	7.68	0	0	NA	NA	NA
Tetrachloroethy		0.2	1.4	1	6.78	0.933	0.734	1.4	2.4	4.1
Chlorobenzene	1) 	N.D.	N.D.	1	4.6	0	0	<2.3	<2.3	<2.3
Ethylbenzene		0.2	1.1	1	4.34	0.998	0.584	1.5	2.4	7.4
o/m-Xylene (se	e note)	0.2	1.1	1	4.34	1	0.537	3.8	6.9	21
Styrene		N.D.	N.D.	1	4.26	0.996	0.566	0.6	1.1	1.4
o-Xylene		N.D.	N.D.	1	4.34	0.995	0.535	1.9	2.7	7.6
1,1,2,2-Tetrach	A STATE AND A STATE	N.D.	N.D.	1	6.87	0	0	<3.4	<3.4	<3.4
1,3,5-Trimethyl		N.D.	N.D.	1	4.92	0.962	0.344	NA	NA	NA
1,2,4-Trimethyl		N.D.	N.D.	1	4.92	0.997	0.308	NA	NA	NA
1,3-Dichlorober	· · · ·	N.D.	N.D.	5	30.1	0	0	< 0.25	< 0.25	0.6
1,2-Dichlorober	and the second	N.D.	N.D.	5	30.1	0	0	<0.25	< 0.25	0.7
1,4-Dichlorober	4 1	N.D.	N.D.	5	30.1	0	0	0.5	0.9	1.5
1,2,4-Trichlorob		N.D.	N.D.	10	74.2	0	0	<0.25	< 0.25	3.4
HexachloroBut		N.D.	N.D.	10	107	0	0	<0.25	<0.25	4.6
	or combined p-	and the second se					and the second second second			1
	SITE Smart Plu		Quality Con							
	cted Italicized						-			
eak Fit=agreer	nent w/ spectra	atabase;	reak Punty	-interieren	ice from c	b-eloung o	ompound	IS. FIL 20.5	mikely, >0.8	so very

MassDEP Fiel	d Assessment	t and Sup	port Team	ı (FAST)	AIR SC	REENING	DATA	RTN:		
City or Town:	Boston		Address:	Hilton -	40 Dalton	Street		Loca	ation:	
Date Sampled:	3/13/12	Time:	11:35 PM	Field ID:	24th flr	Collector	Dame		24th floo	r
Date Analyzed:	3/14/12	Time:	1:01 AM	Lab ID:	001a	Analyst:	Fitzgera	ald		
Method Analytes		Conce	ntration	Reporti	ng Limit	Peak	Peak Peak	Typical	nc µg/m ³	
		ppbV	μg/m ³	ppbV	µg/m ³	Fit	Purity	50 th %	75 th %	90 th %
Vinyl Chloride	2	N.D.	N.D.	1	2.58	0	0	<1	<1	<1
Bromomethane	8	N.D.	N.D.	5	22.3	0.962	0.007	<0.25	< 0.25	0.6
Chloroethane		N.D.	N.D.	5	13.2	0.939	0.043	NA	NA	NA
Trichloromonofl	uoromethane	N.D.	N.D.	5	35.0	0	0	NA	NA	NA
1,1-Dichloroeth	ene	N.D.	N.D.	1	3.97	0.943	0.005	<2	<2	<2
Methylene Chlo	oride	0.3	1.1	1	3.47	0.927	0.334	1.4	3.7	11
1,1,2-Trichlorot	rifluoroethane	N.D.	N.D.	5	38.3	0	0	NA	NA	NA
1,1-Dichloroeth	ane	N.D.	N.D.	1	4.05	0	0	<2	<2	<2
Cis 1,2-Dichlor	pethylene	N.D.	N.D.	1	3.97	0	0	<2	<2	<2
Chloroform	<u> </u>	0.2	1.2	1	4.88	0.991	0.487	1.9	2.6	3
1,2-Dichloroeth	ane	N.D.	N.D.	1	4.05	0.546	0.008	<2	<2	<2
1,1,1-Trichloroe	thane	N.D.	N.D.	1	5.46	0	0	0.5	1.1	3
Benzene		6.2	19.8	1	3.2	0.99	0.65	2.3	3.6	11
Carbon Tetrach	loride	N.D.	N.D.	1	6.29	0	0	0.5	0.6	0.9
1,2-Dichloropro	pane	N.D.	N.D.	1	4.62	0	0	<2.3	<2.3	<2.3
Trichloroethyler	ne	N.D.	N.D.	1	5.37	0	0	0.3	0.7	0.8
cis-1,3-Dichlord	propene	N.D.	N.D.	1	4.54	0	0	<2.3	<2.3	<2.3
trans-1,3-Dichle	propropene	N.D.	N.D.	1	4.54	0.659	0.007	<2.3	<2.3	<2.3
1,1,2-Trichloroe	thane	N.D.	N.D.	1	5. <mark>4</mark> 6	0	0	<2.7	<2.7	<2.7
Toluene		4.0	14.9	1	3.77	0.995	0.722	11	21	54
1,2-Dibromoeth	ane	N.D.	N.D.	1	7.68	0	0	NA	NA	NA
Tetrachloroethy	lene	0.2	1.6	1	6.78	0.925	0.711	1.4	2.4	4.1
Chlorobenzene	n	N.D.	N.D.	1	4.6	0	0	<2.3	<2.3	<2.3
Ethylbenzene		0.2	1.0	1	4.34	1	0.595	1.5	2.4	7.4
p/m-Xylene (se	e note)	0.3	1.1	1	4.34	1	0.553	3.8	6.9	21
Styrene		0.3	1.2	1	4.26	0.998	0.514	0.6	1.1	1.4
o-Xylene		N.D.	N.D.	1	4.34	0.993	0.528	1.9	2.7	7.6
1,1,2,2-Tetrach	loroethane	N.D.	N.D.	1	6.87	0.559	0.073	<3.4	<3.4	<3.4
1,3,5-Trimethyl	benzene	N.D.	N.D.	1	4.92	0.957	0.293	NA	NA	NA
1,2,4-Trimethyl	benzene	N.D.	N.D.	1	4.92	0.995	0.289	NA	NA	NA
1,3-Dichlorober	nzene (meta)	N.D.	N.D.	5	30.1	0	0	<0.25	< 0.25	0.6
1,2-Dichlorober	izene (ortho)	N.D.	N.D.	5	30.1	0	0	<0.25	< 0.25	0.7
1,4-Dichlorober	izene (para)	N.D.	N.D.	5	30.1	0	0	0.5	0.9	1.5
1,2,4-Trichlorob	enzene	N.D.	N.D.	10	74.2	0	0	<0.25	<0.25	3.4
HexachloroBut	adiene	N.D.	N.D.	10	107	0	0	<0.25	< 0.25	4.6
¹ Concentration f		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		e up to twi	ce the liste	ed value, o	due to co-	elution cor	ditions.	
Instrument: HAP										
N.D. = Not Deter								1200 1000	1 C	
Peak Fit=agreer	nent w/ spectra Benzene is sli		· · · · · · · · · · · · · · · · · · ·				compour	nds. Fit >0	.5 likely, >0	.85 very

COMMENTS: Benzene is slightly elevated but not of immediate concern

City or Town:	Roston	oston		Address: Boston Fire Dept Fire House						Location:			
A REAL PROPERTY AND A REAL	1 2 2 2 2 4 3 2 3 1 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Time	and the set of the set of the		100 C 100	Collector		_	- C. (1977)	5155555 C			
Date Sampled:		Time:	11:45 PM		BFD-1	-			2nd floor, SE corner				
Date Analyzed	3/13/12	Time:	11:58 PM	the second second second	002		Fitzgera		6				
Method Analytes			ntration		ng Limit	Peak	Peak		Indoor Con				
0.0000000000000000000000000000000000000	6496340	ppbV	μg/m ³	ppbV	μg/m ³	Fit	Purity	50 th %	75 th %	90 th %			
/inyl Chloride		N.D.	N.D.	1	2.58	0	0	<1	<1	<1			
Bromomethane	Ê.	N.D.	N.D.	5	22.3	0	0	<0.25	< 0.25	0.6			
Chloroethane		51.6	136.1	5	13.2	0.868	0.269	NA	NA	NA			
Frichloromonof	1233 M 201 247 320-24	N.D.	N.D.	5	35.0	0	0	NA	NA	NA			
,1-Dichloroeth		N.D.	N.D.	1	3.97	0	0	<2	<2	<2			
Methylene Chlo	pride	N.D.	N.D.	1	3.47	0.93	0.16	1.4	3.7	11			
,1,2-Trichlorot	rifluoroethane	N.D.	N.D.	5	38.3	0	0	NA	NA	NA			
1,1-Dichloroeth	ane	N.D.	N.D.	1	4.05	0	0	<2	<2	<2			
Cis 1,2-Dichlor	oethylene	N.D.	N.D.	1	3.97	0	0	<2	<2	<2			
Chloroform		N.D.	N.D.	1	4.88	0.882	0.163	1.9	2.6	3			
,2-Dichloroeth	ane	N.D.	N.D.	1	4.05	0.826	0.004	<2	<2	<2			
1,1-Trichloroe	ethane	N.D.	N.D.	1	5.46	0	0	0.5	1.1	3			
Benzene		0.6	2.0	1	3.2	0.991	0.552	2.3	3.6	11			
Carbon Tetrach	loride	N.D.	N.D.	1	6.29	0.962	0.132	0.5	0.6	0.9			
,2-Dichloropro	pane	N.D.	N.D.	1	4.62	0	0	<2.3	<2.3	<2.3			
richloroethyle		N.D.	N.D.	1	5.37	0	0	0.3	0.7	0.8			
is-1,3-Dichlor	20-22-	N.D.	N.D.	1	4.54	0	0	<2.3	<2.3	<2.3			
rans-1,3-Dichle		N.D.	N.D.	1	4.54	0	0	<2.3	<2.3	<2.3			
.1.2-Trichloroe		N.D.	N.D.	1	5.46	0	0	<2.7	<2.7	<2.7			
oluene		0.7	2.5	1	3.77	0.991	0.672	11	21	54			
2-Dibromoeth	ane	N.D.	N.D.	1	7.68	0	0	NA	NA	NA			
etrachloroethy	/lene	N.D.	N.D.	1	6.78	0.917	0.518	1.4	2.4	4.1			
Chlorobenzene	1.10.10.00	N.D.	N.D.	1	4.6	0.795	0.042	<2.3	<2.3	<2.3			
Ethylbenzene		N.D.	N.D.	1	4.34	0.99	0.4	1.5	2.4	7.4			
/m-Xylene (se	e note)	N.D.	N.D.	1	4.34	0.999	0.529	3.8	6.9	21			
Styrene		N.D.	N.D.	1	4.26	0.994	0.299	0.6	1.1	1.4			
o-Xylene		N.D.	N.D.	1	4.34	0.936	0.409	1.9	2.7	7.6			
1.1.2.2-Tetrach	loroethane	N.D.	N.D.	1	6.87	0.672	0.076	<3.4	<3.4	<3.4			
1,3,5-Trimethyl	N STORES AND A STORES	N.D.	N.D.	1	4.92	0.99	0.176	NA	NA	NA			
1,2,4-Trimethyl		N.D.	N.D.	1	4.92	0.998	0.391	NA	NA	NA			
1,3-Dichlorober		N.D.	N.D.	5	30.1	0.000	0.551	<0.25	<0.25	0.6			
.2-Dichlorober	· /	N.D.	N.D.	5	30.1	0	0	<0.25	<0.25	0.7			
,4-Dichlorober		N.D.	N.D.	5	30.1	0	0	0.5	0.9	1.5			
.2.4-Trichlorok	4 /	N.D.	N.D.	10	74.2	0	0	<0.25	<0.25	3.4			
exachloroBut	0.6001.030000	N.D.	N.D.	10	107	0	0	<0.25	<0.25	4.6			
	or combined p-									4.0			
Contraction of the Contract of the Contract of the	SITE Smart Plu		Quality Cont				Contraction of the second			ly cal			
	cted Italicized												
	nent w/ spectra						_			-			

MassDEP Fiel	d Assessmen	t and Sup	port Tean	n (FAST)	AIR SC	REENING	DATA	RTN:		
City or Town:	Boston		Address:	Garage	- Scotia	St			Loca	ation:
Date Sampled:	3/14/12	Time:	12:30 AM	Field ID:	Garage	Collector	Dame		3rd Level	
Date Analyzed:	3/14/14	Time:	2:07 AM	Lab ID:	003a	Analyst:	Fitzgera	ald		
Method Analytes		Conce	ntration	Reporti	ng Limit	Peak	Peak	Typical	al Indoor Conc µg/m	
		ppbV	μg/m ³	ppbV	µg/m ³	Fit	Purity	50 th %	75 th %	90 th %
Vinyl Chloride		N.D.	N.D.	1	2.58	0	0	<1	<1	<1
Bromomethane	6	N.D.	N.D.	5	22.3	0.932	0.024	<0.25	< 0.25	0.6
Chloroethane		5.1	13.4	5	13.2	0.896	0.127	NA	NA	NA
Frichloromonof	uoromethane	N.D.	N.D.	5	35.0	0	0	NA	NA	NA
1,1-Dichloroeth	ene	N.D.	N.D.	1	3.97	0.606	0.015	<2	<2	<2
Methylene Chlo	oride	N.D.	N.D.	1	3.47	0	0	1.4	3.7	11
1,1,2-Trichlorot	rifluoroethane	N.D.	N.D.	5	38.3	0	0	NA	NA	NA
1.1-Dichloroeth	ane	N.D.	N.D.	1	4.05	0	0	<2	<2	<2
Cis 1,2-Dichlor	pethylene	N.D.	N.D.	1	3.97	0	0	<2	<2	<2
Chloroform		N.D.	N.D.	1	4.88	0.882	0.106	1.9	2.6	3
1,2-Dichloroeth	ane	N.D.	N.D.	1	4.05	0	0	<2	<2	<2
1,1,1-Trichloroe	thane	N.D.	N.D.	1	5.46	0.658	0.013	0.5	1.1	3
Benzene		0.5	1.5	1	3.2	0.987	0.505	2.3	3.6	11
Carbon Tetrach	loride	N.D.	N.D.	1	6.29	0.967	0.217	0.5	0.6	0.9
1,2-Dichloropro	pane	N.D.	N.D.	1	4.62	0	0	<2.3	<2.3	<2.3
Trichloroethyler	ne	N.D.	N.D.	1	5.37	0	0	0.3	0.7	0.8
cis-1,3-Dichloro	propene	N.D.	N.D.	1	4.54	0	0	<2.3	<2.3	<2.3
rans-1,3-Dichlo	propropene	N.D.	N.D.	1	4.54	0	0	<2.3	<2.3	<2.3
1,1,2-Trichloroe	thane	N.D.	N.D.	1	5.46	0	0	<2.7	<2.7	<2.7
Foluene		0.6	2.3	1	3.77	0.996	0.698	11	21	54
1,2-Dibromoeth	ane	N.D.	N.D.	1	7.68	0	0	NA	NA	NA
Fetrachloroethy	lene	N.D.	N.D.	1	6.78	0	0	1.4	2.4	4.1
Chlorobenzene	h	N.D.	N.D.	1	4.6	0.873	0	<2.3	<2.3	<2.3
Ethylbenzene		N.D.	N.D.	1	4.34	0.986	0.405	1.5	2.4	7.4
o/m-Xylene (se	e note)	N.D.	N.D.	1	4.34	0.999	0.501	3.8	6.9	21
Styrene		N.D.	N.D.	1	4.26	0.999	0.519	0.6	1.1	1.4
o-Xylene		N.D.	N.D.	1	4.34	0.999	0.317	1.9	2.7	7.6
1,1,2,2-Tetrach	loroethane	N.D.	N.D.	1	6.87	0	0	<3.4	<3.4	<3.4
1,3,5-Trimethyll	benzene	N.D.	N.D.	1	4.92	0.995	0.288	NA	NA	NA
1,2,4-Trimethyll	benzene	N.D.	N.D.	1	4.92	0.995	0.288	NA	NA	NA
1,3-Dichlorober	nzene (meta)	N.D.	N.D.	5	30.1	0	0	< 0.25	<0.25	0.6
1,2-Dichlorober	nzene (ortho)	N.D.	N.D.	5	30_1	0	0	<0.25	< 0.25	0.7
I,4-Dichlorober	nzene (para)	N.D.	N.D.	5	30.1	0	0	0.5	0.9	1.5
1,2,4-Trichlorob	enzene	N.D.	N.D.	10	74.2	0	0	<0.25	<0.25	3.4
HexachloroButa	adiene	N.D.	N.D.	10	107	0	0	< 0.25	<0.25	4.6
Concentration f	or combined p-	& m- Xyler	nes could b	e up to twi	ce the liste	ed value, o	due to co-	elution cor	nditions.	
nstrument: HAP	SITE Smart Plu	IS GC/MS	check	53				28 - 1 Al	a a	33
I.D. = Not Deter	cted Italicized	= estimate	d "J" value ((concentra	tion is les	s than Re	porting Li	Last Calil	bration: 9/1	9/11
eak Fit=agreen	nent w/ spectra	I database	: Peak Purit	v=interfere	ence from	co-elutino	compour	nds. Fit >0	5 likely, >0	.85 verv

Peak Fit=agreement w/ spectral database; Peak Purity=interference from co-eluting compounds. Fit >0.5 likely, >0.85 very COMMENTS: