



Peter Matchak &lt;pmatchak@ashlandmass.com&gt;

---

**10-50 Main Street, Ashland RAM report 3-15917**

6 messages

**McWeeney, Jennifer (DEP)** <jennifer.mcweeney@state.ma.us>

Wed, Mar 1, 2023 at 1:32 PM

To: george campbell &lt;campbellvinc@gmail.com&gt;

Cc: "Thuot, Lisa" &lt;thuot.lisa@epa.gov&gt;, "Johnson, Erik (DEP)" &lt;erik.johnson@state.ma.us&gt;, Peter Matchak &lt;pmatchak@ashlandmass.com&gt;, "Michael Herbert (mherbert@ashlandmass.com)" &lt;mherbert@ashlandmass.com&gt;

Hi George,

EPA and MassDEP have reviewed the December 2022 modified RAM and RAM status report prepared for [10-50 Main Street](#) in Ashland (RTN 3-15917). The modified RAM report addresses DEP's and EPA's previous comments contained in our 10/7/22 and 11/7/22 emails – thank you. However, upon further review, we have some additional concerns, particularly regarding 10 Main Street.

**Comments regarding environmental conditions and potential data gaps at 10 Main Street:**

- **Groundwater data:**
  - Groundwater data obtained from three upgradient wells (MW-10Main, B-5 and B-1) indicates that the Nyanza plume may not be migrating beneath this portion of the property (10 Main Street).
  - Groundwater data obtained from three downgradient wells (ARC-1, B-2 and B-7) indicates the presence of elevated levels of CVOCs (particularly PCE and TCE) downgradient of 10 Main Street (indicating a possible source area).
  - DEP understands that current VOC concentrations in wells ARC-1, B-2 and B-7 are expected to be lower; however, TCE was detected at concentrations up to 122 ug/L (over 24 times the GW-2 standard of 5 ug/L), and PCE was detected at concentrations up to 370 ug/L (over 7 times the GW-2 standard of 50 ug/L).
  - Please see the attached figure with 1985-2003 groundwater data from the 2011 RAO report.
  
- **Soil data:** In 2010, 120,000 ug/Kg of PCE was detected in soil at a 1' – 5' depth interval in boring ARC-1, located immediately downgradient of 10 Main Street (indicating a possible PCE source area).
  
- **Indoor air (IA) and sub slab soil gas (SSSG) data:**
  - IA and SSSG samples were collected from the rear of 20 Main Street building in 2010:
    - PCE and TCE were detected in indoor air at 9.4 ug/m<sup>3</sup> and 1.1 ug/m<sup>3</sup>, respectively. PCE was detected in indoor air at about 6 times the MassDEP residential threshold value for PCE in indoor air of 1.4 ug/m<sup>3</sup>. TCE was detected in indoor air at approximately 3 times the MassDEP residential threshold value for TCE in indoor air of 04 ug/m<sup>3</sup>.

- PCE and TCE were detected in sub slab soil gas at 9900 ug/m<sup>3</sup> and 1.1 ug/m<sup>3</sup>. The PCE concentration in soil gas was particularly noteworthy - It was detected in sub slab soil gas at over 100 times the MassDEP residential sub slab soil gas screening values of 98 ug/m<sup>3</sup>.
- Please see the attached table with indoor air and sub slab soil gas data from the 2011 RAO report.
- A Method 3 risk assessment was conducted during the Phase II investigation. The risk assessment evaluated residential risk for 10-20 Main Street portion of the building using EPCs calculated from indoor air data collected at 20 Main Street (i.e., sub slab soil gas data was not incorporated into these EPCs for residential indoor air). The risk assessment states that "the total [excess lifetime cancer risk] for the future resident within Building #10-20 is above MassDEP's target of 1x10<sup>-5</sup>. These results indicated that a condition of "No Significant Risk" does not exist for carcinogenic effects of exposures to the hypothetical future resident receptors within Building #10-20 Main Street. If an Activity and Use limitation was implemented at the Site to eliminate future residential exposures, a condition of "No Significant Risk" would exist at the Site."

Although current soil, groundwater, soil gas and indoor air concentrations may be lower than those detected several years ago, historic results still indicate the possible presence of a PCE source area either immediately downgradient of 10 Main Street, or within/beneath the 10 or 20 Main Street buildings (for example, associated with a floor drain). Just to note, PCE is not a contaminant of concern for the Nyanza Superfund Site, and there is no historical record or evidence of PCE use associated with the former Nyanza industrial operations.

To address these data gaps, MassDEP and EPA recommend a robust sampling program (including collection of indoor air & sub slab soil gas from the ground floor of 10 Main St, and groundwater sampling immediately downgradient of 10 Main St). Installation of an overburden monitoring well immediately downgradient of 10 Main Street may be required for this purpose if historic wells ARC-1, B-2 and B-7 no longer exist.

If a robust sampling program is not implemented to address these data gaps, then the mitigation measures proposed for 10 Main Street must be re-evaluated based on the assumption that the 2011 indoor air and sub-slab soil gas collected at 20 Main St, and historic groundwater data collected downgradient of 10 Main Street *are representative of current conditions at 10 Main Street and that a PCE source area may exist immediately downgradient or within/beneath 10 or 20 Main street.*

It should also be noted that the shallow water table (assumed to be less than 5 feet below the building foundation) poses increased risk for vapor intrusion.

Comments re: proposed vapor mitigation measures for 10 Main Street:

The RAM proposes installation of a 20-mil Drago wrap vapor barrier or equivalent directly on top of the foundation slab at 10 Main Street and topped with a concrete topper. We have a few concerns with this proposal:

- Thickness and composition of the proposed vapor barrier membrane:
  - The proposed 20-mil thickness is significantly thinner than that recommended for vapor barriers in MassDEP's Vapor Intrusion Guidance document (WSC#16-435). MassDEP recommends that vapor barrier membranes be at least 40 to 60 mil in thickness, and preferably 60 to 100 mil in thickness.
  - According to MassDEP's VI guidance doc, the selected vapor barrier membrane should also be chemically resistant to (should not significantly absorb) VOCs present in soil gas and groundwater beneath the building. Documentation should be provided demonstrating that the composition of the selected vapor barrier will be able to withstand VOC permeation.
  
- Lack of permeable/open cavity layer:
  - The RAM proposes installation of a vapor barrier directly on top of the existing foundation slab at 10 Main Street, without any underlying permeable layer. This is not consistent with MassDEP's vapor intrusion guidance document, which recommends that "*vapor barriers intended to address VOCs should be installed above a permeable layer that allows soil vapors to migrate freely to the perimeter of the building or up and out through passive or active vent piping.*"
  - Similarly, EPA's OSWER Publication 9200.2-154 "Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air" does not recommend passive vapor barriers as stand-alone technologies.
  - The concern is that, without an underlying permeable layer, VOC vapors may concentrate beneath the vapor barrier and breach the vapor barrier at a small opening or tear in the vapor barrier, or by permeation through the vapor barrier.
  
- Active mitigation system: According to MassDEP's VI guidance document, active sub-slab depressurization systems are the recommended method to address the vapor intrusion pathway *in all cases* and particularly if an Imminent Hazard exists. A passive vapor mitigation system, or a stand-alone vapor barrier, *should not be proposed unless subsurface contaminant concentrations are demonstrated to be low.* MassDEP and EPA do not believe we have enough current data to rule out the need for active ventilation system.
  
- Shallow water table:
  - Design of the vapor mitigation system should take into account the shallow water table (which may be within 5 feet of the building foundation). A shallow water table may both pose increased risk for vapor intrusion and also limit the effectiveness of a sub-slab ventilation system.
  - If a shallow water table prevents installation of an active or passive sub slab depressurization system, perhaps an aerated floor (placed on top of the concrete slab, but beneath the vapor barrier) could be installed to provide an open cavity through which the contaminated soil gas could be vented. We understand there are some aerated floor technologies that are only 2" in height and relatively easy to unroll and install.

- MassDEP and EPA strongly recommend that the vapor barrier and sub-barrier ventilation system be designed and installed by a trained, experienced, and certified installer, under the oversight of an environmental professional.

MassDEP and EPA recommend meeting to discuss these comments and determine how to best address these concerns.

Jennifer McWeeney

Project Manager

MassDEP – BWSC Superfund section

100 Cambridge Street, Suite 900

Boston, MA 02114

Work phone: 781-915-9656

[Jennifer.McWeeney@mass.gov](mailto:Jennifer.McWeeney@mass.gov)

**3 attachments**



**Figure Arcadis 1985-2003 GW VOC data.JPG**  
200K

 A screenshot of a data table with multiple columns and rows, showing numerical values for various VOCs.

**Table ARCADIS 2010 VOCs in IA & SSSG.JPG**  
138K

 A screenshot of a data table with multiple columns and rows, showing numerical values for various VOCs in soil.

**Table Arcadis 2010 VOCs in soil.JPG**  
112K

Michael Herbert <mherbert@ashlandmass.com>

Thu, Mar 2, 2023 at 8:46 AM

To: "McWeeney, Jennifer (DEP)" <jennifer.mcweeney@state.ma.us>

Cc: george campbell <campbellvinc@gmail.com>, "Thuot, Lisa" <thuot.lisa@epa.gov>, "Johnson, Erik (DEP)" <erik.johnson@state.ma.us>, Peter Matchak <pmatcak@ashlandmass.com>, Rajit Gupta <rgupta@ashlandmass.com>

Thank you for a very thorough analysis, Jennifer. I agree that we need more sampling data to determine the proper safety measures moving forward.

I have a lot of questions and agree that a meeting would be important. Would you like us to take the lead on setting that up?

There is one question I would like to ask now: It seems that there is some preliminary indication that the pollutants under 10 and 20 Main Street are not Nyanza-related. But if I am reading the data correctly, it seems like Trichlorethylene levels are high in that area. Isn't TCE the main pollutant associated with the Nyanza site?

-Michael

[Quoted text hidden]



**Michael Herbert**

*Town Manager*

**Town of Ashland**

a: 101 Main Street, Ashland, MA 01721

p: 508-881-0100

Facebook: <https://www.facebook.com/michael.herbert.731>

Twitter: @AshlandTwnMgr



**McWeeney, Jennifer (DEP)** <jennifer.mcweeney@state.ma.us> Thu, Mar 2, 2023 at 10:57 AM  
 To: "Michael Herbert (mherbert@ashlandmass.com)" <mherbert@ashlandmass.com>  
 Cc: "Gardner, George (DEP)" <george.gardner@state.ma.us>, "Thuot, Lisa" <thuot.lisa@epa.gov>, "Johnson, Erik (DEP)" <erik.johnson@state.ma.us>, Peter Matchak <pmatchak@ashlandmass.com>, Rajit Gupta <rgupta@ashlandmass.com>

Hi Michael,

TCE is indeed a main contaminant of concern for Nyanza, however, some of the TCE present at the property could very well be attributable to the chemical breakdown/degradation of PCE (TCE is a primary breakdown product of PCE, which is only attributable to historical activities at the property, not Nyanza). In addition, a small TCE release cannot be ruled out since TCE was likely used at the property.

The two plumes appear to be somewhat co-mingled in area of 20-30 Main Street. The Nyanza plume is clearly present in the central and eastern portion of the property and may extend west as far as 20 or 30 Main Street. Based on available data, it appears a PCE source area may be located behind/beneath 10 or 20 Main Street and may extend as far east as 30 Main Street.

Here is a quote from page 15 of the Class A-3 RAO report that was filed for 3-15917 in June 2011, describing the different sources of contamination:

"Potential Sources of Contamination

Based on historical information and field data gathered to date, the sources of contamination identified at the Site that may have resulted in a release include:

- The historical use of solvents and apparent localized releases as evidenced by some PCE contamination. The potential use and on-site release of other solvents, including TCE, may have also occurred on Site;
- The Site is located downgradient of the Nyanza Superfund Site. Groundwater beneath the Nyanza site is contaminated with VOCs, SVOCs and metals. The groundwater contaminant plume associated with the Nyanza Site has been mapped by EPA and extends approximately 2,500 feet to the northeast and underlies the G.M.O.L. Trust property. The primary COPCs associated with this plume include TCE, cis-DCE, 1,2-DCB, and 1,4-DCB, and metals including cadmium, mercury, and thallium."

Please let me know if you have any other questions. And yes, Lisa and I would be happy to have the Town set up a meeting. Thank you!

Jennifer (and Lisa)

---

**From:** Michael Herbert <mherbert@ashlandmass.com>  
**Sent:** Thursday, March 2, 2023 8:46 AM  
**To:** McWeeney, Jennifer (DEP) <jennifer.mcweeney@mass.gov>  
**Cc:** george campbell <campbellvinc@gmail.com>; Thuot, Lisa <thuot.lisa@epa.gov>; Johnson, Erik (DEP) <Erik.Johnson@Mass.gov>; Peter Matchak <pmatchak@ashlandmass.com>; Rajit Gupta <rgupta@ashlandmass.com>  
**Subject:** Re: 10-50 Main Street, Ashland RAM report 3-15917

Thank you for a very thorough analysis, Jennifer. I agree that we need more sampling data to determine the proper safety measures moving forward.

I have a lot of questions and agree that a meeting would be important. Would you like us to take the lead on setting that up?

There is one question I would like to ask now: It seems that there is some preliminary indication that the pollutants under 10 and 20 Main Street are not Nyanza-related. But if I am reading the data correctly, it seems like Trichlorethylene levels are high in that area. Isn't TCE the main pollutant associated with the Nyanza site?

-Michael

On Wed, Mar 1, 2023 at 1:32 PM McWeeney, Jennifer (DEP) <jennifer.mcweeney@state.ma.us> wrote:

Hi George,

EPA and MassDEP have reviewed the December 2022 modified RAM and RAM status report prepared for 10-50 Main Street in Ashland (RTN 3-15917). The modified RAM report addresses DEP's and EPA's previous comments contained in our 10/7/22 and 11/7/22 emails – thank you. However, upon further review, we have some additional concerns, particularly regarding 10 Main Street.

Comments regarding environmental conditions and potential data gaps at 10 Main Street:

- Groundwater data:
  - Groundwater data obtained from three upgradient wells (MW-10Main, B-5 and B-1) indicates that the Nyanza plume may not be migrating beneath this portion of the property (10 Main Street).
  - Groundwater data obtained from three downgradient wells (ARC-1, B-2 and B-7) indicates the presence of elevated levels of CVOCs (particularly PCE and TCE) downgradient of 10 Main Street (indicating a possible source area).
  - DEP understands that current VOC concentrations in wells ARC-1, B-2 and B-7 are expected to be lower; however, TCE was detected at concentrations up to 122 ug/L (over 24 times the GW-2 standard of 5 ug/L), and PCE was detected at concentrations up to 370 ug/L (over 7 times the GW-2 standard of 50 ug/L).
  - Please see the attached figure with 1985-2003 groundwater data from the 2011 RAO report.
  
- Soil data: In 2010, 120,000 ug/Kg of PCE was detected in soil at a 1' – 5' depth interval in boring ARC-1, located immediately downgradient of 10 Main Street (indicating a possible PCE source area).
  
- Indoor air (IA) and sub slab soil gas (SSSG) data:
  - IA and SSSG samples were collected from the rear of 20 Main Street building in 2010:
    - PCE and TCE were detected in indoor air at 9.4 ug/m<sup>3</sup> and 1.1 ug/m<sup>3</sup>, respectively. PCE was detected in indoor air at about 6 times the MassDEP residential threshold value for PCE in indoor air of 1.4 ug/m<sup>3</sup>. TCE was detected in indoor air at approximately 3 times the MassDEP residential threshold value for TCE in indoor air of 04 ug/m<sup>3</sup>.
    - PCE and TCE were detected in sub slab soil gas at 9900 ug/m<sup>3</sup> and 1.1 ug/m<sup>3</sup>. The PCE concentration in soil gas was particularly noteworthy - It was detected in sub slab soil gas at over 100 times the MassDEP residential sub slab soil gas screening values of 98 ug/m<sup>3</sup>.
    - Please see the attached table with indoor air and sub slab soil gas data from the 2011 RAO report.
  - A Method 3 risk assessment was conducted during the Phase II investigation. The risk assessment evaluated residential risk for 10-20 Main Street portion of the building using EPCs calculated from indoor air data collected at 20 Main Street (i.e., sub slab soil gas data was not incorporated into these EPCs for residential indoor air). The risk assessment states that "the total [excess lifetime cancer risk] for the future resident within Building #10-20 is above MassDEP's target of 1x10<sup>-5</sup>. These results indicated that a condition of "No Significant Risk" does not exist for carcinogenic effects of exposures to the hypothetical future resident receptors within Building #10-20 Main Street. If an Activity and Use limitation was implemented at the Site to eliminate future

residential exposures, a condition of "No Significant Risk" would exist at the Site."

Although current soil, groundwater, soil gas and indoor air concentrations may be lower than those detected several years ago, historic results still indicate the possible presence of a PCE source area either immediately downgradient of 10 Main Street, or within/beneath the 10 or 20 Main Street buildings (for example, associated with a floor drain). Just to note, PCE is not a contaminant of concern for the Nyanza Superfund Site, and there is no historical record or evidence of PCE use associated with the former Nyanza industrial operations.

To address these data gaps, MassDEP and EPA recommend a robust sampling program (including collection of indoor air & sub slab soil gas from the ground floor of 10 Main St, and groundwater sampling immediately downgradient of 10 Main St). Installation of an overburden monitoring well immediately downgradient of 10 Main Street may be required for this purpose if historic wells ARC-1, B-2 and B-7 no longer exist.

If a robust sampling program is not implemented to address these data gaps, then the mitigation measures proposed for 10 Main Street must be re-evaluated based on the assumption that the 2011 indoor air and sub-slab soil gas collected at 20 Main St, and historic groundwater data collected downgradient of 10 Main Street *are representative of current conditions at 10 Main Street and that a PCE source area may exist immediately downgradient or within/beneath 10 or 20 Main street.*

It should also be noted that the shallow water table (assumed to be less than 5 feet below the building foundation) poses increased risk for vapor intrusion.

Comments re: proposed vapor mitigation measures for 10 Main Street:

The RAM proposes installation of a 20-mil Drago wrap vapor barrier or equivalent directly on top of the foundation slab at 10 Main Street and topped with a concrete topper. We have a few concerns with this proposal:

- Thickness and composition of the proposed vapor barrier membrane:
  - The proposed 20-mil thickness is significantly thinner than that recommended for vapor barriers in MassDEP's Vapor Intrusion Guidance document (WSC#16-435). MassDEP recommends that vapor barrier membranes be at least 40 to 60 mil in thickness, and preferably 60 to 100 mil in thickness.
  - According to MassDEP's VI guidance doc, the selected vapor barrier membrane should also be chemically resistant to (should not significantly absorb) VOCs present in soil gas and groundwater beneath the building. Documentation should be provided demonstrating that the composition of the selected vapor barrier will be able to withstand VOC permeation.

- Lack of permeable/open cavity layer:
  - The RAM proposes installation of a vapor barrier directly on top of the existing foundation slab at 10 Main Street, without any underlying permeable layer. This is not consistent with MassDEP's vapor intrusion guidance document, which recommends that *"vapor barriers intended to address VOCs should be installed above a permeable layer that allows soil vapors to migrate freely to the perimeter of the building or up and out through passive or active vent piping."*
  - Similarly, EPA's OSWER Publication 9200.2-154 "Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air" does not recommend passive vapor barriers as stand-alone technologies.
  - The concern is that, without an underlying permeable layer, VOC vapors may concentrate beneath the vapor barrier and breach the vapor barrier at a small opening or tear in the vapor barrier, or by permeation through the vapor barrier.
  
- Active mitigation system: According to MassDEP's VI guidance document, active sub-slab depressurization systems are the recommended method to address the vapor intrusion pathway *in all cases* and particularly if an Imminent Hazard exists. A passive vapor mitigation system, or a stand-alone vapor barrier, *should not be proposed unless subsurface contaminant concentrations are demonstrated to be low.* MassDEP and EPA do not believe we have enough current data to rule out the need for active ventilation system.
  
- Shallow water table:
  - Design of the vapor mitigation system should take into account the shallow water table (which may be within 5 feet of the building foundation). A shallow water table may both pose increased risk for vapor intrusion and also limit the effectiveness of a sub-slab ventilation system.
  - If a shallow water table prevents installation of an active or passive sub slab depressurization system, perhaps an aerated floor (placed on top of the concrete slab, but beneath the vapor barrier) could be installed to provide an open cavity through which the contaminated soil gas could be vented. We understand there are some aerated floor technologies that are only 2" in height and relatively easy to unroll and install.
  
- MassDEP and EPA strongly recommend that the vapor barrier and sub-barrier ventilation system be designed and installed by a trained, experienced, and certified installer, under the oversight of an environmental professional.

MassDEP and EPA recommend meeting to discuss these comments and determine how to best address these concerns.

Jennifer McWeeney

Project Manager

MassDEP – BWSC Superfund section

100 Cambridge Street, Suite 900

Boston, MA 02114

Work phone: 781-915-9656

[Jennifer.McWeeney@mass.gov](mailto:Jennifer.McWeeney@mass.gov)

**Michael Herbert**

*Town Manager*

**Town of Ashland**

a: 101 Main Street, Ashland, MA 01721

p: 508-881-0100

Facebook: <https://www.facebook.com/michael.herbert.731>

Twitter: [@AshlandTwnMgr](https://twitter.com/AshlandTwnMgr)

Please remember when writing or responding, the Massachusetts Secretary of State has determined that e-mail is a public record. This e-mail is intended to be conveyed only to the designated recipient(s) named above. Any use, dissemination, distribution, or reproduction of this message by unintended recipients is not authorized and may be unlawful.

**Peter Matchak** <[pmatchak@ashlandmass.com](mailto:pmatchak@ashlandmass.com)>

To: Rich Gordon <[rich65@gmail.com](mailto:rich65@gmail.com)>

Wed, Mar 8, 2023 at 11:07 AM

Hi Rich,

The email I am forwarding you comes from EPA and DEP and was sent last week to George Campbell. I assume George has been in conversations with you but I wanted to send it over if it has not reached you. I don't think it is a topic for tomorrow night.

Pete



**Peter Matchak**

*Town Planner / Director of Planning*

**Town of Ashland**

a: 101 Main Street, Ashland MA 01721

p: (508)881-0100 x 7927

f: 508-881-0162

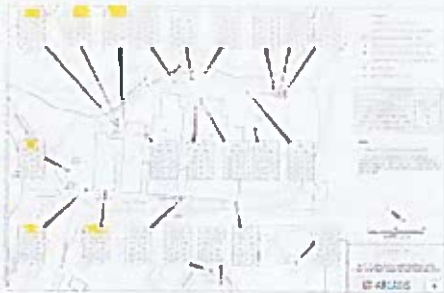


Please remember when writing or responding, the Massachusetts Secretary of State has determined that e-mail is a public record. This e-mail is intended to be conveyed only to the designated recipient(s) named above. Any use, dissemination, distribution, or reproduction of this message by unintended recipients is not authorized and may be unlawful

[Quoted text hidden]

---

### 3 attachments



**Figure Arcadis 1985-2003 GW VOC data.JPG**  
200K

**Table ARCADIS 2010 VOCs in IA & SSSG.JPG**  
138K

**Table Arcadis 2010 VOCs in soil.JPG**  
112K

**Richard Gordon** <rich65@gmail.com>  
To: **Peter Matchak** <pmatchak@ashlandmass.com>

Wed, Mar 8, 2023 at 11:24 AM

Yes - I got it from George. It is all still looking very reasonable and doable from the DEP EPA side of things. We will of course continue to comply with any of their requests and recommendations

thx

**Rich Gordon, President**  
**Baystate Engineering**  
330 Hopping Brook Rd.  
Holliston, MA. 01746  
[www.baystateengineering.com](http://www.baystateengineering.com)

(508) 893-8931 office  
(508) 893-8921 fax  
(617) 719-2884 cell

[Quoted text hidden]

[Quoted text hidden]

Please remember when writing or responding, the Massachusetts Secretary of State has determined that e-mail is a public record. This e-mail is intended to be conveyed only to the designated recipient(s) named above. Any use, dissemination, distribution, or reproduction of this message by unintended recipients is not authorized and may be unlawful.

**Peter Matchak** <pmatchak@ashlandmass.com>  
To: Richard Gordon <rich65@gmail.com>

Wed, Mar 8, 2023 at 2:46 PM

Awesome, I agree it is all doable. Wanted to make sure you had this on your team's radar... I am happy to organize a meeting when the appropriate time comes.



**Peter Matchak**  
*Town Planner / Director of Planning*  
**Town of Ashland**  
a: 101 Main Street, Ashland MA 01721  
p: (508)881-0100 x 7927  
f: 508-881-0162



Please remember when writing or responding, the Massachusetts Secretary of State has determined that e-mail is a public record. This e-mail is intended to be conveyed only to the designated recipient(s) named above. Any use, dissemination, distribution, or reproduction of this message by unintended recipients is not authorized and may be unlawful

[Quoted text hidden]



Table 4 - Summary of Air Analysis

G.M.O.L Trust  
10-50 Main Street  
Ashland, MA

Sample ID	MassDEP Threshold Values	#10-20 Indoor Air 2/11/2010	#10-20 Subslab 2/11/2010	#50-Indoor Air 2/11/2010	#50-Subslab 2/11/2010
Date Sampled					
VOCs ( $\mu\text{g}/\text{m}^3$ Air)					
Acetone	91	17	<0.95	7.5	1.5
Benzene	2.3	2.3	<0.32	0.87	<0.32
2-Butanone (MEK)	12	3.1	0.77	2.2	1.4
Carbon Tetrachloride	0.54	0.43	<0.63	0.41	0.68
Chloroform	1.9	<0.17	0.82	<0.17	2.5
Chloromethane	NE	0.98	<0.21	1.3	<0.21
Cyclohexane	NE	1.3	<0.34	0.22	<0.34
1,4-Dichlorobenzene	0.5	<0.21	8.7	2.2	8.1
Dichlorodifluoromethane (Freon 12)	NE	1.4	2.8	1.3	2.5
cis-1,2-Dichloroethylene	0.8	0.21	30	0.48	1.5
Ethanol	NE	26	<0.75	38	1.3
Ethyl Acetate	NE	0.57	<0.36	0.29	<0.36
Ethylbenzene	7.4	3.7	<0.43	0.51	<0.43
4-Ethyltoluene	NE	1.3	<0.49	0.2	<0.49
Heptane	NE	2.2	<0.41	0.32	<0.41
Hexane	NE	4	<0.35	1.5	<0.35
Isopropanol	NE	490	0.57	10	<0.25
Methylene Chloride	NE	2.2	2.9	2.4	3.2
4-Methyl-2-pentanone (MIBK)	2.2	<0.14	<0.41	0.17	<0.41
Styrene	1.4	0.26	<0.43	<0.15	<0.43
Tetrachloroethylene	1.4	9.4	9900	0.24	32
Tetrahydrofuran	NE	0.14	<0.29	<0.10	<0.29
Toluene	54	18	<0.38	1.7	<0.38
1,1,1-Trichloroethane	3	<0.19	<0.55	<0.19	13
Trichloroethylene	0.8	1.1	7.5	2.7	52
Trichlorofluoromethane (Freon 11)	NE	1.3	1.5	1.4	1.3
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	NE	0.7	<0.77	0.9	<0.77
1,2,4-Trimethylbenzene	NE	4.9	<0.49	0.5	<0.49
1,3,5-Trimethylbenzene	NE	1.4	<0.49	0.18	<0.49
m,p-Xylene	20*	12	<0.87	1.4	<0.87
o-Xylene	20*	4.8	<0.43	0.42	<0.43
MassDEP Draft Threshold Values indicate the 90th percentile value for Typical Indoor Air Concentrations, or lower risk-based concentrations.					
* Value is for Total Xylenes					
NE - Not Established					
Source: MassDEP, Indoor Air Threshold Values for the Evaluation of a Vapor Intrusion Pathway, Technical Update, Draft, June 28, 2008.					

Table 2 - Summary of VOCs in Soil

G.M.O.L. Trust Property  
 10 - 50 Main Street  
 Ashland, MA

Sample ID Data Sampled	Massachusetts Method 1 Standards										SED-DG 2/10/2010	SED-JIG 2/10/2010	SED-DG 2/10/2010	RPL-S1 2/10/2010	RPL-S2 2/10/2010
	S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3	S-3/GW-2	S-3/GW-3	ARC-1 (0-5') 2/10/2010	ARC-1 (14-15') 2/10/2010	ARC-3 (10-15') 2/10/2010	ARC-4 (13-15') 2/10/2010					
VOCs (µg/kg)	NA	NA	NA	NA	NA	NA	NA	6.6	<2.8	7.5	<2.1	<1.5	<66	<5.4	<3.4
1,2,3-Trichlorobenzene	30000	300000	30000	300000	30000	300000	100	27	500	47	6.8	82	<66	<5.4	<3.4
1,2-Dichlorobenzene	4000	50000	4000	300000	4000	2000000	20	5.4	83	8.3	1.7	15	<66	<5.4	<3.4
1,4-Dichlorobenzene	30000	30000	200000	200000	700000	900000	<2.9	<2.8	8.2	<2.1	<1.5	3.6	<66	<5.4	<3.4
Benzene	3000	1000000	3000	1000000	3000	1000000	120	28	700	51	6.8	120	<66	<5.4	<3.4
Chlorobenzene	400	100000	400	500000	400	500000	15	<2.8	7.6	4.2	<1.5	25	<66	<5.4	<3.4
CS-1,2-Dichloroethene	10000	30000	10000	200000	10000	1000000	3.3	<2.8	<5.2	<2.1	<1.5	<2.1	<66	<5.4	<3.4
Tetrachloroethene	2000	90000	2000	700000	2000	2000000	100	18	570	46	4.8	73	<66	<5.4	<3.4

Notes  
 µg/kg = micrograms per kilogram or ppm  
 Values shown as less than (e.g. <160) were not detected above the indicated laboratory reporting limit  
 Bolded values exceed one or more of the applicable Method 1 Standards