



January 27, 2014

Goldleaf Development
c/o Maureen Thomas
2379 University Avenue
Madison, WI 53726

Subject: Request for Access to Complete Vapor Sampling at 2302, 2308, and 2355 University Avenue, Madison, Wisconsin as part of the investigation of the Miller Liquor Site, 2401 University Avenue, BRRTS# 02-13-415322.

Dear Ms. Thomas:

I am sending this letter as a follow-up to our conversation on January 14, 2014.

We are contacting you to provide information related to the request from Seymour Environmental, for access to conduct investigative work on your property. Seymour Environmental is the environmental consulting firm, working on behalf of Miller Liquors to conduct an investigation of contamination in the area from a former drycleaning operation. The Department of Natural Resources (the department) expects that consultants will use their best efforts to gain access to and investigate all properties which are likely impacted by contamination.

It is our understanding that Seymour Environmental has explained to you that they need to collect air samples from beneath the foundation and indoors at your 2302, 2308, and 2355 University Avenue properties, in order to conduct an adequate site investigation. The concentration of tetrachloroethylene (PCE) in groundwater around your property is high enough to warrant investigating whether PCE vapors may be migrating from the groundwater beneath your buildings into the indoor air within your buildings. In addition, the concentration of PCE and trichloroethylene (TCE) vapors beneath the slab of the InnTowner Hotel (adjacent to 2308) are well above screening levels used by the department. A vapor mitigation system is being installed. I have enclosed the results of vapor sampling performed at the InnTowner.

The Department was informed by Seymour Environmental that an attempt to obtain your approval to perform sampling has been made but was not successful. Although the decision to grant access is yours, we are writing you to ensure that you are adequately informed about three important issues:

- 1) **Health Risks:** PCE and TCE exposure have some potential health concerns. Attached are information sheets that explains these concerns. We are not indicating that there is a health risk on your property at this time, but rather a potential for such risk exists.

The way to determine whether or not this potential health risk is present is by allowing the investigation to proceed on your property.

2) Environmental Liability: Pursuant to s. 292.11(3), Stats., state law requires that the person who possesses or controls a hazardous substance such as PCE is responsible for the cleanup of the contamination unless they qualify for one of the exemptions provided in the law. The specific exemption is under s. 292.13, Stats., which exempts property owners from cleanup responsibility for hazardous substances on or beneath their property if they did not cause the contamination and meet other requirements. One of the conditions of this exemption – for which you may be eligible - is to allow the responsible party to take action to respond to the discharge, which includes performing sampling.

Thus, if you do not allow Seymour Environmental access to your property to perform vapor sampling, you may no longer meet the conditions for an exemption from liability under s. 292.13, Stats. In that event, if PCE or TCE contamination does exist on or beneath your property, it would then be *your* responsibility under the provision of s. 292.11(3), Stats., to address the contamination using your own funds. This would include costs to you to conduct any needed sampling, and any cleanup of the discharges, which may include the installation and operation of a vapor mitigation system (similar to a radon system).

With respect to the property at 2308 University Avenue, sampling performed during the investigation of a leaking petroleum storage tank during 2000 to 2002 found concentrations of PCE in groundwater at up to 1,100 parts per billion (ppb). On May 31, 2002 the former owner received an off-site exemption from the department for the PCE contamination (attached). However, that letter is not transferable to subsequent property owners.

3) Property Transactions: The uncertainty over whether vapor intrusion is occurring on your property can be an issue that arises during a future property transaction and sometimes re-financing. The Department maintains a map of sites with contamination called the RR Sites Map, at <http://dnr.wi.gov/topic/brownfields/rrsm.html>. The RR Sites Map portrays sites where contamination has been reported. Further, this correspondence and all documents related to your property and this project are available to the public for review as part of a property transaction.

You should also be aware of the disclosure requirements for the sale of residential property contained in chapter 709 of Wisconsin Statutes. Specifically, items C15 and C17 of the residential property disclosure form state the following:

C. 15. I am aware of a defect caused by unsafe concentrations of, or unsafe conditions relating to, radon, radium in water supplies, lead in paint, lead in soil, lead in water supplies or plumbing system or other potentially hazardous or toxic substances on the premises.

C. 17. I am aware of a defect caused by unsafe concentrations of, unsafe conditions relating to, or the storage of, hazardous or toxic substances on neighboring properties.

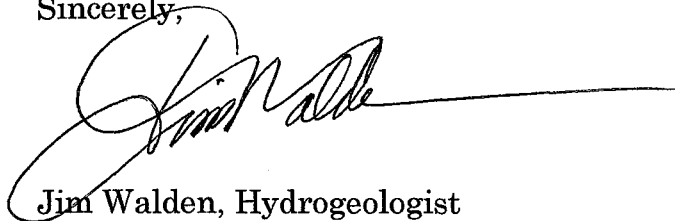
As I explained during our phone conversation, the first step in assessing the vapor pathway is to get some information on the extent of the underground parking in the lowest level of your buildings. Vented underground parking or open-air parking (as in the case of 2302) can break the pathway of vapors from the ground into occupied spaces. If any of these buildings have a vented parking space which covers the entire lowest level, it may eliminate the need for vapor sampling. Would you please provide me with a simple sketch of the floor plans of the buildings, showing the extent of vented or outdoor parking spaces on the lowest level. With that information we can work with you and Seymour Environmental to determine appropriate sampling locations. I am attaching a couple of fact sheets relating to vapor sampling.

Attached is an access agreement that Seymour Environmental provided to the department. If you have any concerns about the language of the access agreement, please contact Robyn Seymour at 608-838-9120, 608-225-9407 (cell) or rseymour@chorus.net.

If sampling is done on your property, the results will be provided to you. If a risk from soil vapor is found during the testing, the department expects that the party responsible for the contamination will pay for the installation of a mitigation system similar to the ones used for radon.

We recommend you reconsider granting access to Seymour Environmental to investigate your property, rather than risk taking on that responsibility yourself. If you have any questions or concerns that you would like to discuss, please contact me at 608-267-7572 or at james.walden@wisconsin.gov.

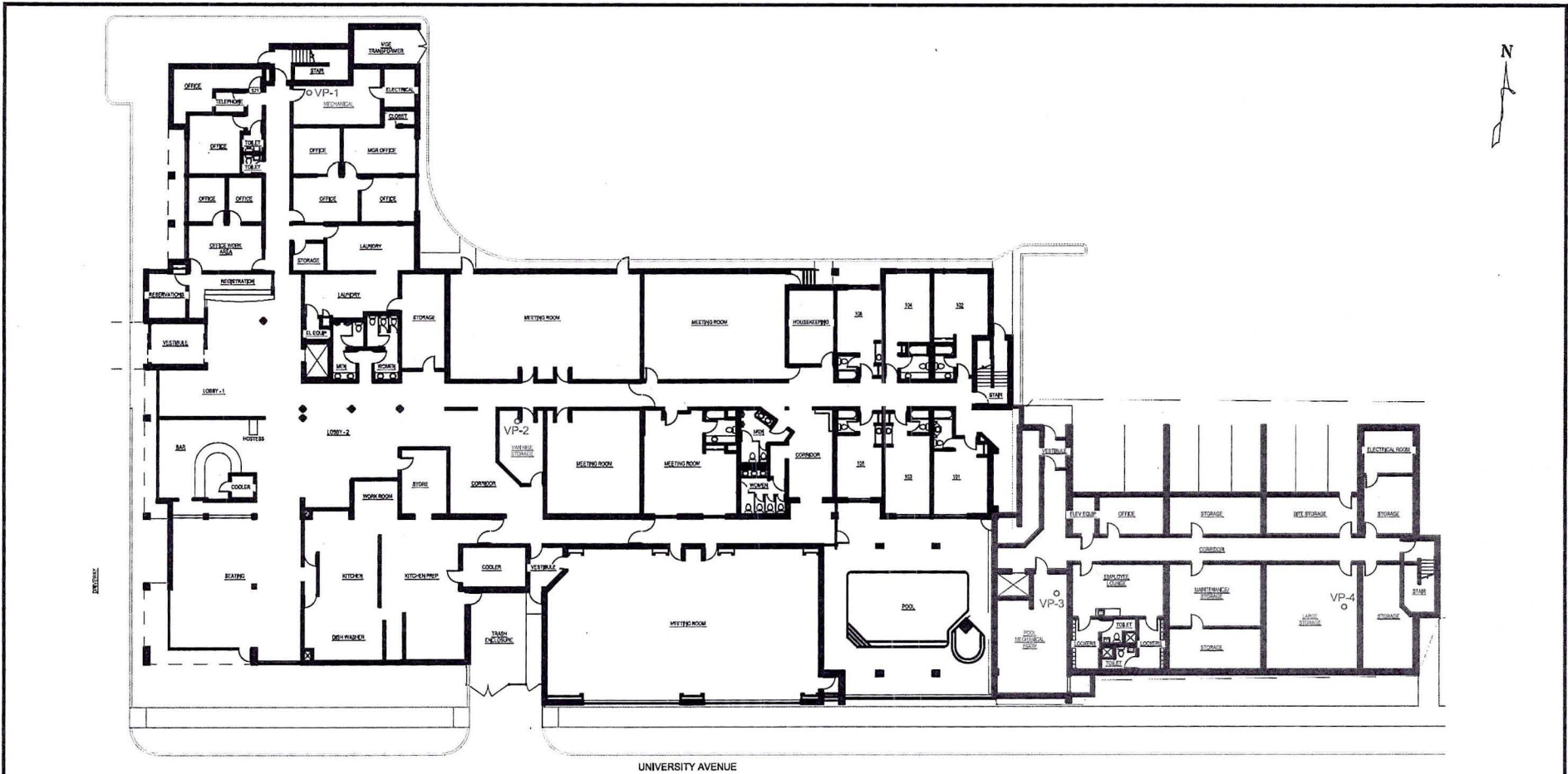
Sincerely,

A handwritten signature in black ink, appearing to read "Jim Walden", with a long horizontal line extending to the right.

Jim Walden, Hydrogeologist
Remediation and Redevelopment Program
Wisconsin Department of Natural Resources

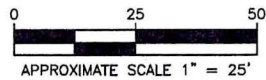
Attachments

cc: Robyn Seymour – Seymour Environmental
Jeff Lafferty – Public Health Madison and Dane County



EXPLANATION

- BLACK** First Floor Building Plan (eastern addition not shown)
- BLUE** Lower Level Building Plan (beneath First Floor, full extent shown)
- RED** Room Name where vapor probe installed
- VP-1** Vapor Probe location



VAPOR PROBE LOCATIONS
 BEST WESTERN INNTOWNER
 2424 UNIVERSITY AVENUE
 MADISON, WISCONSIN

FILE: c:\Project\UW-Health\Site Plan.dwg [Aerial-Loca]
 DATE: 12/13/2012 DRAWN BY: DAN CHECKED BY: MSM
 SOURCE:
 As-Built Drawing by Eppstein Uhen Architects for Flore Companies,
 dated 1-29-10

NewFields
 2110 Luann Lane - Suite 101
 Madison, Wisconsin 53713
 Phone (608) 442-5223

FIGURE
 2

Table 2
Air Laboratory Analytical Results (Sub-slab Vapor Probes)
December 12, 2012

2424 University Avenue, Madison, Wisconsin

VOLATILES	VP-1 sub-slab ppbv	VP-2 sub-slab ppbv	VP-3 sub-slab ppbv	VP-4 sub-slab ppbv	EPA RSL NR Indoor Air ug/m ³	EPA RSL NR Indoor Air ppbv	Risk Factor to 10 ⁻⁵	Attenuation Factor to IA#	VRSL sub-slab ppbv
Acetone	14.4	3.56	6.75	6.46	140,000	58,973	1	0.1	589,726
Benzene	0.246	0.179	0.647	2.56	1.6	0.50	0.1	0.1	50
Carbon disulfide	3.25	<0.28	<0.28	<0.27	3,100	996	1	0.1	9,962
Chloroform	7.94	<0.28	9.59	1.81	0.53	0.11	0.1	0.1	11
Cyclohexane	<0.31	<0.28	0.314	0.457	26,000	7,558	1	0.1	75,582
1,1-Dichloroethene	<0.32	<0.27	<0.27	1.02	880	222	1	0.1	2,221
cis-1,2-Dichloroethene	<0.32	<0.27	190	22,600	(37)	(9.3)	0.1	0.1	934
trans-1,2-Dichloroethene	<0.32	<0.27	0.645	20.4	260	66	1	0.1	656
Ethanol	25.6	22.8	12.9	34.2	-	-	-	-	-
Ethylbenzene	0.385	<0.27	0.317	<0.27	4.9	1.1	0.1	0.1	113
Freon 11 (Trichlorofluoromethane)	<0.32	0.438	<0.28	0.648	3,100	552	1	0.1	5,521
Freon 12 (Dichlorodifluoromethane)	21.1	16.5	0.637	12.9	440	178	1	0.1	1,781
n-Heptane	0.528	0.288	0.48	<0.26	-	-	-	-	-
n-Hexane	1.17	<0.28	0.726	0.754	3,100	880	1	0.1	8,800
Methyl Ethyl Ketone (2-Butanone)	0.934	0.801	1	0.667	22,000	7,464	1	0.1	74,641
Methylene Chloride	<0.31	<0.28	0.312	<0.27	2,600	749	1	0.1	7,490
Naphthalene	0.807	0.826	0.845	0.638	0.36	0.069	0.1	0.1	6.9
2-Propanol (Isopropanol)	<0.31	1.16	<0.28	0.667	31,000	12,619	1	0.1	126,193
Tetrachloroethene (PCE)	2.58	1,700	4,080	89,800	180	27	1	0.1	266
Toluene	1.04	1.62	0.966	0.731	22,000	5,841	1	0.1	58,415
1,1,1-Trichloroethane	<0.31	15.3	<0.27	0.541	22,000	4,034	1	0.1	40,344
Trichloroethene (TCE)	12.9	<0.14	154	2,800	8.8	1.6	1	0.1	16
1,2,4-Trimethylbenzene	0.46	0.40	0.44	0.36	31	6.3	1	0.1	63
Vinyl Chloride	<0.15	<0.14	<0.14	2.77	2.8	1.1	0.1	0.1	110

Notes:

Analytes not shown if not detected in any samples.

VP Vapor Probe

IA Indoor Air

NR Non-residential

ppbv parts per billion by volume

ug/m³ micrograms per cubic meter

< below reporting limit

EPA RSL U.S. EPA generic regional screening level (November 2012)

ug/m³ to ppbv conversion at standard temperature (25°C, i.e. 298.15°K), pressure (101.325 kPa), and molecular weight from RSL table

Non-carcinogenic RSLs utilized for PCE and TCE per WDNR (carcinogenic RSLs yield higher screening level)

- No RSL available

(value) For cis-1,2-DCE (no RSL available),

EPA Region 9 PRG (2004) used as a conservative screening level, based on trans-1,2-DCE PRG < RSL (73 vs 260 ug/m³)

Attenuation factor from sub-slab to indoor air: generic 0.1

italics concentration is an estimated value

underline concentration exceeded instrument calibration range

bold concentration is above the sub-slab vapor risk screening level (VRSL);

VRSL = RSL (ppbv) ÷ Risk Factor (modify to 10⁻⁵ risk for carcinogens) ÷ Attenuation Factor



WISCONSIN
DEPARTMENT OF
HEALTH SERVICES



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Environmental
Health Home

Tetrachloroethylene (PCE)

Also known as: Perchloroethylene, Perc, PCE, PerSec, Tetraneq
Chemical reference number (CAS): 127-18-4

Environmental
Health A-Z

Contact Us

What is tetrachloroethylene?

Tetrachloroethylene (PCE) is a nonflammable, liquid solvent widely used in dry cleaning, wood processing, fabric manufacturing, and metal degreasing. In homes, it may be found in suede protectors, paint removers, furniture stripper, water repellents, silicone lubricants, spot removers, glues, and wood cleaners. PCE evaporates slowly at room temperature and has a sweet, ether-like odor.

When PCE is improperly disposed of or spilled, most of it will evaporate into the air. The rest will seep into the soil. It may mix with ground water and contaminate water supplies.

How are people exposed to tetrachloroethylene?

People are most often exposed to PCE when they use it in their work, when cleaning or doing hobbies.

Breathing: PCE evaporates into the air. People are commonly exposed to PCE by breathing air containing its vapors. PCE can contaminate home air when people use cleaning solvents or other products. Exposure can also occur when using contaminated water to shower, do laundry, or perform other household chores.

Drinking/Eating: People can be exposed when using contaminated water for drinking and preparing food.

Touching: Small amounts of PCE can pass through the skin when people handle the chemical, contaminated soil, or bathe in contaminated water.

Do standards exist for regulating tetrachloroethylene?

Water: The state and federal drinking water standards for PCE are both set at 5 parts per billion (ppb). We suggest you stop drinking water containing more than 5 ppb. If levels of PCE are above 70 ppb, you may need to avoid washing, bathing, or using the water for other purposes.

Contact your local public health agency for more information specific to your situation.

Air: No standards exist for regulating the amount of PCE allowed in the air of homes. However, the Wisconsin Department of Natural Resources (DNR) has set a residential indoor air action level for PCE at 6 parts per billion by volume (ppbv). The action level is considered to be protective of public health. Breathing PCE for a lifetime at 6 ppbv is very unlikely to be harmful to people. If PCE concentrations in air are above the action level, we recommend taking an action to halt exposure.

Most people can smell PCE when the level reaches 1,000 ppbv. If you can smell the chemical, the level is too high to be safe.

The Wisconsin Department of Natural Resources regulates the amount of PCE that can be released into outdoor ambient air by industries.

Will exposure to tetrachloroethylene result in harmful health effects?

Some workplace jobs and certain home projects can produce levels of PCE high enough to cause health effects. The following symptoms may occur immediately or shortly after exposure to high levels:

- Breathing air containing more than 100 ppm (or 100,000 ppbv) of PCE may cause dizziness, headache, sleepiness, confusion, nausea and difficulty speaking and walking.
- Direct contact with PCE can irritate skin or eyes.
- Swallowing PCE can cause mental confusion and possible loss of consciousness.

The following health effects can occur after several years of exposure to low levels of PCE:

Cancer: PCE is shown to cause liver cancer, kidney cancer, and leukemia in laboratory animals.

Reproductive Effects: When a mother becomes sick from exposure to PCE, the development of her fetus may also be affected. *Pregnant women should avoid contact with PCE (tetrachloroethylene).*

Organ Systems: Liver and kidney damage has been noticed among exposed workers.

In general, chemicals affect the same organ systems in all people who are exposed. A person's reaction depends on several things, including individual health, heredity, previous exposure to chemicals including medicines, and personal habits such as smoking or drinking. It's also important to consider the length of exposure to the chemical; the amount

of chemical exposure; and whether the chemical was inhaled, touched, or eaten.

Health problems such as cardiovascular disease, nervous system disorders, liver disease, or alcohol abuse may increase sensitivity to the effects of PCE.

Can a medical test determine exposure to tetrachloroethylene?

PCE can be detected in the breath, blood, and urine of people who have recently been exposed to high levels. These tests require special equipment that most doctors' offices do not have, and the test results may not predict what health effects will develop. Liver and kidney function tests may be helpful in determining damage from PCE exposure.

Seek medical advice if you have any symptoms that you think may be related to chemical exposure.

(P-44349 Revised 05/2012)

This fact sheet summarizes information about this chemical and is not a complete listing of all possible effects. It does not refer to work exposure or emergency situations.

For more information, contact:

- Wisconsin Poison Control Center, 800-222-1222
- Your local public health health department
- Division of Public Health, BEOH, 1 West Wilson Street, Rm. 150, Madison, WI 53701-2659, (608) 266-1120
- The Agency for Toxic Substances and Disease Registry (ATSDR) (exit DHS) Information Center toll-free at 1-888-422-8737 or e-mail ATSDRIC@cdc.gov

PDF: The free *Adobe Reader*® is needed to view and print portable document format (PDF) files. [Learn more](#)

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Last Revised: August 06, 2013

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The Official Internet site of the Wisconsin Department of Health Services



CHEMICAL FACT SHEET

TRICHLOROETHYLENE (TCE)

WHAT IS TRICHLOROETHYLENE?

Trichloroethylene (TCE) is a manufactured chemical. TCE does not occur naturally in the environment. It's a pale blue nonflammable liquid that evaporates easily and has a sweet smell. TCE is commonly used as a metal degreaser. In homes, TCE may be found in typewriter correction fluid, paint, spot removers, carpet-cleaning fluids, metal cleaners, and varnishes. TCE does not easily break down or degrade in soils and groundwater. Therefore, TCE contamination can stay in the environment for a long time.

Most TCE in air comes from metal degreasing activities associated with tool and automobile production. TCE can also enter ground water and surface water from industrial discharges or from improper disposal. TCE has been found in many drinking water supplies in the United States, including Wisconsin.

HOW ARE PEOPLE EXPOSED TO TRICHLOROETHYLENE?

Breathing: Workers in degreasing operations have the highest risk of exposure to TCE. People who live near factories that use TCE may also be exposed to low TCE levels in the air. In homes, people who use TCE as a solvent (such as typewriter correction fluid or paint remover) have exposure; however, the extent of the actual exposure depends on the length of time and the amount of the product used. Showering in water highly contaminated with TCE can also be a source of exposure.

Touching: TCE can be absorbed through the skin. Therefore, people who use the compound without solvent-resistant gloves may be exposed.

Drinking/Eating: TCE released onto soil can enter groundwater. Therefore, people who drink water from wells located near TCE disposal sites may be exposed. The amount of TCE in commercial products is much more concentrated than in contaminated drinking water. Plants grown on contaminated soil do not accumulate TCE. TCE has been detected at very low levels in many processed foods as a result of its use in equipment-cleaning.

DO STANDARDS EXIST FOR REGULATING TRICHLOROETHYLENE?

Water: The state and federal drinking water standards for TCE are both set at 5 parts per billion (ppb). Municipal wells, which are regulated, are regularly tested for the presence of TCE. Water from unregulated private residential wells is sometimes contaminated with TCE from industry or old landfills. When groundwater in an area is found to have TCE, private well owners may be advised to stop drinking water containing more than the standard. In rare cases where levels of TCE are found to be very high in water you may be advised to avoid washing, bathing, or using the water for purposes other than toilet flushing.

Air: The Wisconsin Department of Natural Resources (DNR) regulates the amount of TCE that can be released into outdoor ambient air by industries.

The DNR has set a residential indoor air action level for TCE at 0.39 parts per billion by volume (ppbV). The action level is considered to be protective of public health. If TCE concentrations in air are above the action level, we recommend taking an action to halt exposure even if the levels are not high enough to cause immediate harm.

If TCE-containing products are being used around you, you may be able to smell the chemical. If you can smell the chemical, the level is too high to be safe for exposure over long periods of time. Therefore, TCE-containing products should either be used briefly in small amounts, or should be used in well-ventilated areas.

WILL EXPOSURE TO TRICHLOROETHYLENE RESULT IN HARMFUL HEALTH EFFECTS?

In general, a chemical will affect the same organ systems in all people who are exposed. However, the seriousness of the effects may vary from person to person. A person's reaction depends on several things, including individual health, heredity, previous exposure to chemicals including medicines, and personal habits such as smoking or drinking.

It's also important to consider the length of exposure to the chemical, the amount of chemical exposure, and whether the chemical was inhaled, touched, or eaten.

The following health effects may occur immediately or shortly after inhaling air that contains very high levels of TCE (more than 50,000 ppbV):

- Heart problems including cardiac arrhythmias;
- Nausea and vomiting;
- Serious liver injury;
- Dizziness, headache, neurological problems; and
- Eye, nose and throat irritation.

Exposures of this degree would usually only be found in occupational settings.

Developmental Effects: Animal studies indicate there may be an association between maternal exposure to TCE and specific heart defects in the offspring. There is some evidence that human exposure to TCE while pregnant may be associated with similar effects. Pregnant women should avoid exposure to TCE.

The following health effects can occur after several years of exposure to TCE:

Cancer: There is growing evidence in studies of animals and people who handle pure TCE (very high levels) of increased rates of cancers of the kidney, liver, and non-Hodgkins lymphoma. The U.S. Environmental Protection Agency (EPA) currently characterizes TCE as "carcinogenic to humans" by all routes of exposure.

Other Effects: In lab animals, inhaling TCE vapors or drinking TCE-contaminated water can cause effects in the kidney, liver and lung, and in the immune system. In order to protect the most sensitive people in the general public from TCE-related health effects, the Wisconsin Department of Health Services (DHS) and DNR screening values are set far below the concentrations known to cause effects.

CAN A MEDICAL TEST DETERMINE EXPOSURE TO TRICHLOROETHYLENE?

There are tests to detect TCE in the breath, urine, and blood of people exposed to high levels of the compound within the previous 24 hours. TCE cannot be measured in people when it results from long-term, low-level exposure. Those suspecting TCE exposure over a long period of time should contact their physician. Blood chemistry analyses, which include liver and kidney function tests, may be helpful.

Seek medical advice if you have any symptoms that you think may be related to chemical exposure.

This fact sheet summarizes information about this chemical and is not a complete listing of all possible effects. It does not refer to work exposure or emergency situations.

For more information, contact:

- Your local health department: <http://www.dhs.wisconsin.gov/localhealth/>
- Division of Public Health, Bureau of Environmental and Occupational Health, (608) 266-1120:
<http://www.dhs.wisconsin.gov/eh/>



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Scott McCallum, Governor
Darrell Bazzell, Secretary
Ruthe E. Badger, Regional Director

South Central Region Headquarters
3911 Fish Hatchery Road
Fitchburg, Wisconsin 53711-5397
Telephone 608-275-3266
FAX 608-275-3338
TTY 608-275-3231

May 31, 2002

File Ref: 03-13-254686

Mr Rick Gomes
Extendicare Health Services, Inc.
111 West Michigan Street
Milwaukee, WI 53203

Subject: Off Site Exemption Request, Former Highland Transitional Care Facility, 2308 University Avenue, Madison, WI

Dear Mr. Gomes:

Purpose

The Department of Natural Resources (the Department) recently reviewed your request for an off site exemption letter for the above described property, which throughout this letter will be referred to as "the Property". You have requested that the Department determine whether Extendicare Health Care Services, Inc. is exempt from s. 292.11(3), (4) and (7)(b) and (c), Wis. Stats. (commonly known as the Hazardous Substance Spill Law), with respect to the existence of a hazardous substance in the groundwater that you believe is migrating on to the Property from an off site source.

Determination

As you are aware, s. 292.13(2), Wis. Stats., requires the Department to issue upon request, a written determination regarding a liability exemption for a person who possesses or control a property that is contaminated by an off site source, when certain conditions are met. Specifically, the Department has reviewed the following documents:

- "Off-Site Discharge Exemption Request...", dated March, 2001.
- "Second Request for Off- Site Discharge Exemption...", dated December 2001
- "Third Request for Off- Site Discharge Exemption...", dated April 2001

A groundwater plume of chlorinated organic compounds exists in the area and has migrated onto the Property from properties located southwest of the Property. Based upon the currently available data and in accordance with s. 292.13(2), Wis. Stats., the Department makes the following determinations regarding the presence of chlorinated organic compounds found in the groundwater beneath the Property:

1. The hazardous substance discharge originated from a source that is not possessed or controlled by Extendicare Health Care Services, Inc.
2. Extendicare Health Care Services, Inc. did not possess or control chlorinated organic compounds on the property on which the discharge originated.
3. Extendicare Health Care Services, Inc. did not cause the discharge of chlorinated organic compounds.

4. Extendicare Health Care Services, Inc. will not have liability under the Hazardous Substance Spill Law for investigation or remediation of the soil or groundwater originating from an off site property on to the Property, provided that Extendicare Health Care Services, Inc. does not take possession or control of the property where the chlorinated organic compounds were discharged.

Exemption Conditions

The Department's determination, as set forth in this letter, is subject to the following conditions being complied with as specified in s. 292.13(1) and (1m), Wis. Stats.:

1. The facts upon which the Department based its determination are accurate and do not change.
2. Extendicare Health Care Services, Inc. agrees to allow the following parties to enter the property to take action to respond to the discharge: The Department and its authorized representatives; any party that possessed or controlled the hazardous substance or caused the discharge; and any consultant or contractor of such a party.
3. Extendicare Health Care Services, Inc. agrees to avoid any interference with action undertaken to respond to the discharge and to avoid actions that worsen the discharge.
4. Extendicare Health Care Services, Inc. agrees to any other condition that the Department determines is reasonable and necessary to ensure that the Department and any other authorized party can adequately respond to the discharge.

The Department may revoke the determinations made in this letter if it determines that any of the requirements under s. 292.13(1) or (1m), Wis. Stats., cease to be met.

Future property owners are eligible for the exemption under s. 292.13, Wis. Stats., if they meet the requirements listed in the statute under that section. The determinations in this letter regarding a liability exemption, however, only apply to Extendicare Health Care Services, Inc. and may not be transferred or assigned to other parties. The Department will provide a written determination to future owners of this property, if such a determination is requested in accordance with the requirements of s. 292.13(2), Wis. Stats.

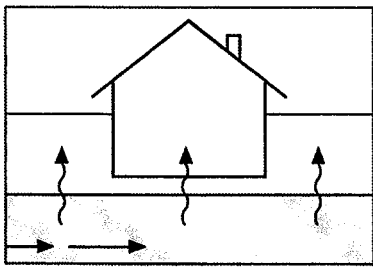
If you have questions or concerns regarding this letter, please contact me at 608-275-3465 or Attorney Joe Renville at 608-266-9454.

Sincerely,



Lawrence Lester
Hydrogeologist
Remediation & Redevelopment Program
Wisconsin Department of Natural Resources

Cc: Nessman, Sigma Environmental Services, Inc.
Atty. Joe Renville – LS/5, GEF 2



Vapor Intrusion

What to Expect if Vapors from Soil and Groundwater Contamination Exist on My Property

PUB-RR-892

September 2012

Chemicals used in commercial activities – such as dry cleaning chemicals, chemical degreasers, and petroleum products such as gasoline – are sometimes spilled or leaked into soil and groundwater. These chemicals, known as volatile organic compounds (VOCs), often become gases or vapors, which can travel from contaminated groundwater and soil and enter buildings. This can happen in both commercial buildings and homes.

The process where vapors from contamination enter a building or other structure is called vapor intrusion.

How do vapors enter a building?

If you live near a commercial or industrial facility, or a landfill where VOCs have entered the soil and/or groundwater, there may be potential for VOCs to travel as vapors through the soil and enter your home or business through openings in the foundation – such as cracks or utility lines.

Why is vapor intrusion a concern?

Exposure to VOCs can cause an increased risk of adverse health effects. Whether or not a person experiences any health effects depends on several factors, including the amount and length of exposure, the toxicity of the chemical and the individual's sensitivity to the chemical.

When vapor intrusion is the result of environmental contamination, the Wisconsin Department of Natural Resources (DNR) requires steps be taken to reduce or eliminate exposures which could be harmful to human health.

What should I expect if vapor intrusion is a concern near my home or business?

For sites with VOC contamination, the DNR requires that the potential for vapor intrusion be investigated. If you live near a site being cleaned up, you may be contacted by the site owner or others working on the cleanup. Your cooperation and consent will be requested before any testing/sampling is conducted on your property. Ask the person contacting you any questions you have about the work being done, or contact the DNR for more information (see DNR contact information on page 3).

What testing may be done on my property?

After the owner of the property where contamination originated – called the “responsible party” – has conducted tests of soil gas or groundwater on his/her own property and determined that vapors may be moving away from their property, he or she will contact other property owners that may be affected by vapor intrusion.

The responsible party or their representative – usually an environmental consultant – may ask for permission to install soil gas probes or groundwater wells on your property. Soil gas probes and groundwater wells are installed outside buildings, in yards or rights-of-way, using special drilling equipment. They may also ask to install sub-slab vapor probes through the foundation of your home or business.

These probes and wells can help determine if vapors are moving through the soils and onto your property.



Wisconsin Department of Natural Resources
P.O. Box 7921, Madison, WI 53707
dnr.wi.gov/topic/Brownfields

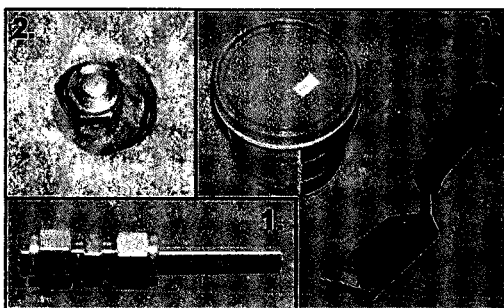


What are sub-slab samples and why are they needed?

Sub-slab samples are the most reliable method for determining whether vapors may be entering a structure due to vapor intrusion. Sub-slab samples are collected by drilling one or more small holes through the basement floor or foundation of a building.

A hand-held hammer drill is used to drill the hole and a small stainless steel or brass probe is placed in the hole, flush with the floor, and sealed with cement (see photo below).

When the cement is set, a vapor sample is collected using special equipment. The sub-slab probes may be sampled more than once. When the investigation of the vapor intrusion is complete, the sub-slab probes can be removed and the holes patched with cement.



A probe (1) is inserted into a 1-inch hole in the foundation (2) and held in place with cement (3) (photos courtesy DNR).

Why not take indoor air samples as an alternative to taking sub-slab samples?

Indoor air quality often changes from day to day. Therefore, sampling results one day may not reveal any contamination, while the next day's result will – this can create misleading assumptions about long-term indoor air quality.

In addition, indoor air quality may be affected by household and commercial products, including paints, glues, fuels, cleaners, cigarette smoke, aerosol sprays or new carpeting or furniture. These products can be a source of VOCs found in indoor air samples.

Furthermore, any outdoor air that enters indoors may also contain compounds which can alter test results. Therefore, indoor air testing will not necessarily confirm that the VOCs in the indoor air are entering a building from underground sources.

Sub-slab samples are more reliable indicators of potential vapor intrusion than indoor air samples, and are not affected by indoor chemical sources. If soil vapors are not detected in the sub-slab samples, additional sampling may not be necessary. If sub-slab vapors are detected at levels that may indicate vapors can seep into the indoor air, additional indoor air sampling should be performed to determine the levels at which those vapors are present inside the building.

When will I receive the sample results?

The laboratory results are usually available in two to four weeks. A responsible party is obligated to give you any sample results and explain whether additional steps need to be taken and what those steps will be.

What happens if a problem is found?

If vapor intrusion is detected in a home or business, the most common solution is to install systems often used to reduce naturally occurring radon.

These systems, called sub-slab depressurization systems (see Fig. 1) or radon mitigation systems, remove soil vapors from below building foundations before they enter homes. Vapors are vented outside of the building where they disperse and are rendered harmless. These systems use minimal electricity and do not noticeably affect heating and cooling efficiency.

Sub-slab depressurization systems also prevent radon from entering homes – an added health benefit in radon-prone areas like southern Wisconsin.

The cost of installing a system is usually paid by the responsible party.

How will I know if the vapors have been eliminated?

After a vapor mitigation system is installed, follow-up testing of indoor air usually takes place three to six months later. The systems are usually considered permanent fixtures of the building.

In cases where the sources of the vapors are completely eliminated, the systems should no longer be needed.

Where can I find more information?

More information about health and vapor-related issues can be found in the Vapor Intrusion fact sheet from the Department of Health Services (DHS) at: www.dhs.wisconsin.gov/eh/air/fs/VI.htm.

For other health related questions, please contact your local health department: www.dhs.wisconsin.gov/localhealth/.

For more DNR information, please visit the DNR's Remediation and Redevelopment (RR) Program Vapor Intrusion page at: dnr.wi.gov/topic/Brownfields/Vapor.html.

Additional information can be obtained through the DNR field office in your region. To find the correct office, visit the RR Program Staff Contacts page at: dnr.wi.gov/topic/Brownfields/Contact.html. Or call the RR Program at (608) 266-2111.

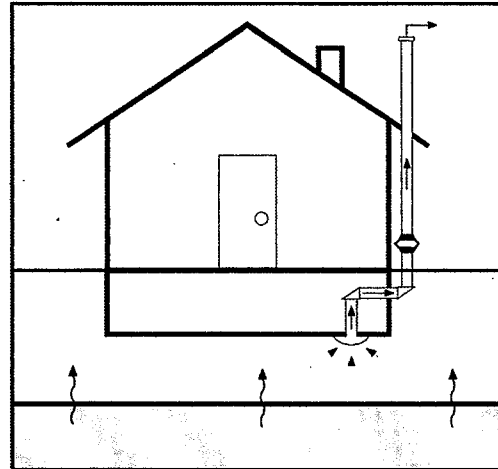


Fig.1 – Depicting a sub-slab depressurization system

This document contains information about certain state statutes and administrative rules but does not necessarily include all of the details found in the statutes and rules. Readers should consult the actual language of the statutes and rules to answer specific questions.

The Wisconsin Department of Natural Resources provides equal opportunity in its employment, programs, services, and functions under an Affirmative Action Plan. If you have any questions, please write to Equal Opportunity Office, Department of Interior, Washington, D.C. 20240.

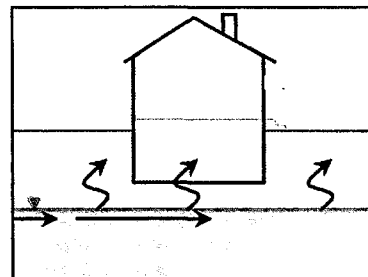
This publication is available in alternative format upon request. Please call 608-267-3543 for more information.



Vapor Intrusion

What is vapor intrusion?

Vapor intrusion is a way that chemicals in soil or groundwater can get into indoor air. (see figure at right) Sometimes, chemicals are spilled on the ground at a factory or leak from an underground storage tank. These chemicals can seep down into the soil and groundwater. Some chemicals can also travel through soil as vapors. These vapors may then move up through the soil and into nearby buildings, contaminating indoor air. Homes in the same neighborhood and right next to each other can be affected differently by vapor intrusion. Vapor intrusion is similar to how radon, a naturally occurring radioactive gas, can enter a home through cracks in the foundation. Vapor intrusion is uncommon, but should be considered whenever there is a known source of soil or groundwater contamination nearby.



What chemicals might be entering my home, and where would they come from?

VOCs (volatile organic compounds) are one group of chemicals that easily become gases which can migrate through the soil and enter buildings. Some examples of VOCs are petroleum products such as gasoline or diesel fuel, and solvents for dry cleaning and industrial uses.

The most common vapor intrusion cases involve petroleum spilled or leaked from underground storage tanks at gas stations. These cases are usually accompanied by a petroleum odor. Solvents from other commercial sites and industrial sites are usually not accompanied by an odor. In many cases, chemical and petroleum releases are not immediately discovered. By the time they are discovered, the contamination has had time to migrate through the soil.

Some of these same solvents are also found in household products which may be stored in your home. Paints, paint strippers and thinners, cigarette smoke, aerosol sprays, moth balls, air fresheners, new carpeting or furniture, hobby supplies (glues and solvents), stored fuels, and dry-cleaned clothing all contain VOCs and are more likely to be a source of indoor air quality problems at your home than vapor intrusion from a contamination site. In some extreme cases, health symptoms can be experienced as a result of exposure to chemicals stored in the home.

What are the health concerns with vapor intrusion?

The health effects from chemical exposures vary based on the individual exposed and the chemical involved. When chemicals build up in indoor air (at levels high enough to cause a strong petroleum odor, for example), some people will experience eye and respiratory irritation, headache, and/or nausea. These symptoms are temporary and should go away when the person is moved to fresh air. Usually, health officials are most concerned about low level chemical exposures over many years, as this may raise a person's lifetime risk for developing cancer.

The likelihood of indoor air contamination by vapor intrusion is low at most cleanup sites. When vapor intrusion does occur, the health risk will often be lower than that posed by radon or by chemicals owned and used by the resident. Even though the risk is quite low, the Wisconsin Department of Health and Family Services (DHFS) considers these risks to be unnecessary and avoidable.

What should I expect if vapor intrusion is a concern near my home?

If you live near a site with VOC contamination, such as a gas station or dry cleaner where petroleum or chemicals have contaminated soil or groundwater, you should expect that the potential for vapor intrusion is also being investigated. You may be contacted by the cleanup site owner or others working on the

cleanup with information about the project. Your cooperation and consent would be requested before any testing/sampling would be done on your property. You may ask the person contacting you any questions about the work being done, or you can contact the DNR cleanup project manager, or a DHFS employee. Telephone numbers and internet addresses for DHFS and DNR are provided below.

How is vapor intrusion investigated?

In most cases, the potential for vapor intrusion can be ruled out by collecting soil gas or groundwater samples near the contamination site. In some cases, sampling closer to your property and/or home may be necessary. DHFS and DNR do not usually recommend indoor air sampling for vapor intrusion. Indoor air quality changes a lot from day to day. Therefore, sampling one day may not show a problem even though sampling a day later might show contamination. Since a variety of VOC sources are present in most homes, testing will not necessarily confirm that VOCs in the indoor air are from VOC contamination in soils nearby. Instead, soil vapor samples are taken from areas outside of the home to see if vapors are near the home. Samples may also be taken from beneath the home's foundation (called sub-slab samples), to see if vapors have reached the home. Sub-slab samples are more reliable than indoor air samples and are not as affected by other indoor chemical sources. If no odors are present at a petroleum cleanup site, additional testing may not be necessary as long as the site is being cleaned up effectively.

What happens if a problem is found?

If vapor intrusion is having an effect on the air in your home, the most common solution is to install a *radon mitigation system*. This prevents gases in the soil from entering the home. A low amount of suction is applied below the foundation and the vapors are vented to the outside. The system uses minimal electricity and should not noticeably affect heating and cooling efficiency. This mitigation system also prevents radon from entering the home, an added health benefit. Usually, the party responsible for cleaning up the contamination is also responsible for paying for the installation of this system. Once the contamination is cleaned up, the system should no longer be needed. In homes with radon problems, DHFS suggests that these systems remain in place permanently.

What else can I do to improve my air quality?

There are other sources of indoor air problems. Consider these tips to improve air quality:

- Do not buy more chemicals than you need at a time. Be aware of what products contain VOCs.
- Store unused chemicals in appropriate containers in a well-ventilated location.
- If you smell a chemical odor that does not seem to be from an indoor source, contact your local health department. For very strong odors, your local fire department can determine if there is a fire hazard.
- Don't make your home too air tight. Fresh air will help prevent both build up of chemicals in the air and mold growth.
- Fix all leaks promptly, as well as other moisture problems that encourage mold growth.
- Make sure all major appliances and fireplaces are in good condition. Have them checked annually by a professional.
- **TEST YOUR HOME FOR RADON!**

For more information

For health related questions, contact your local health department or DHFS at (608) 266-1120. More information on this and related topics is available on the DHFS website at:

<http://www.dhfs.state.wi.us/eh/Air>. For an on-line DNR database of sites with environmental contamination, click on the "BRRTS on the Web" button at <http://www.dnr.state.wi.us/org/aw/tr/>.



ACCESS PERMISSION FORM

I hereby give my permission to Seymour Environmental Services, Inc. (Seymour), to enter upon and have access at reasonable times to install a subslab probes at 2302, 2308 and 2355 University Avenue in Madison that are owned by Goldleaf Development. The probes are being installed as part of an investigation of the Miller's Liquor property, which is a former dry cleaner with a documented release of dry cleaning chemicals located at 2401 University Avenue in Madison, Wisconsin.

- 1) To install a subslab probes and collect air samples from the probe as well as an indoor air sample

the permission that is granted herein shall remain in effect until December 2014, when the investigation is expected to be completed. After March 2014 if the property owner wishes to withdraw permission for continued access, the property owner shall notify Seymour of that fact. Seymour shall, within 90 days after either abandon any subslab probes that remain on the property or obtain a court order to allow continued access.

When soil, groundwater or vapor samples are collected on the property described above, split samples will be provided to the property owner, if the property owner requests split samples and provides sample vessels before the samples are collected.

The property owner agrees not to damage, or interfere with the use of, any subslab probe, that is installed as permitted herein, and agrees to notify third parties who plan to conduct any activity on the property described above, that monitoring wells and/or subslab probes have been installed on the property.

IN WITNESS WHEREOF:

Signature Property Owner/Representative
Goldleaf

Date