



April 5, 2016

Ms. Maria Letsos
1602 Hughitt Ave
Superior, WI 54880

Subject: Contamination at the Letsos Property, 902-904 Belknap Street, Superior, Wisconsin
BRRTS# 02-16-560359

Dear Ms. Letsos:

In February 2016 the Douglas County Department of Health and Human Services collected indoor air samples from 902-904 Belknap Street after concerns about contaminated groundwater entering the building arose. On March 30, 2016, the Department received the results of these indoor air samples, which indicate that indoor air contains chlorinated solvent vapors over Indoor Air Vapor Action levels (VALs). In addition to this indoor air data, the Department has also received environmental sample results from Environmental Troubleshooters in 2013 and MSA Professional Services in March 2016, which indicate that the property contains chlorinated solvent impacts to soil and groundwater. The chlorinated solvents detected in the indoor air are likely from vapors coming off the contaminated soil and groundwater on the property. This process of chemical vapors entering a building is called vapor intrusion.

Because you are the owner of the property the Department notified you of your responsibilities to investigate the degree and extent of contamination and clean up the site on April 19, 2013. Your legal responsibilities are defined both in statute and in administrative codes. The hazardous substances spill law, Section 292.11(3), Wisconsin Statutes (formerly s. 144.76(3), Wis. Stats.), states:

- **RESPONSIBILITY.** A person who possesses or controls a hazardous substance which is discharged or who causes the discharge of a hazardous substance shall take the actions necessary to restore the environment to the extent practicable and minimize the harmful effects from the discharge to the air, lands, or waters of the state.

Wisconsin Administrative Code chapters NR 700 through NR 749 establish requirements for emergency and interim actions, public information, site investigations, design and operation of remedial action systems, and case closure. Chapter NR 708 includes provisions for immediate actions in response to limited contamination. Wisconsin Administrative Code chapter NR 140 establishes groundwater standards for contaminants that reach groundwater.

Next Steps

The next steps are as follows:

- Notify the tenants of the indoor air results
- Mitigate the vapor intrusion occurring in the building
- Implement site investigation activities

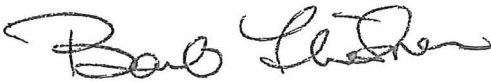
The Douglas County Department of Health and Human Services will notify the residents and renters of the property of the indoor air results (per Wisconsin Administrative Code ch. NR 714.07 public notification

requirements and NR 716.14(2), Wis. Admin. Code). Enclosed you will find a copy of their draft notification letter and attachments. The Health Department emailed these materials today to Jacky Wiggins, the building property manager for Northland Rental Resources. The Douglas County Department of Health and Human Services will mail a final copy of this letter and attachments to the building tenants by April 12, 2016.

The Department requests **within 30 days, by May 4, 2016** that you provide a workplan to mitigate vapor intrusion in the building and for site investigation to define the degree and extent of contamination. The workplan should include a summary of investigative work that has been performed on this site to date and proposed timeline for completing any investigative and/or remedial actions that might be needed to bring this case to closure. This summary should be submitted in writing to me at the above address.

If you are experiencing problems selecting an environmental consultant to assist you with these next steps, or if you have other questions concerning the cleanup process, please do not hesitate to write or call me at 715-392-7825 or 715-762-1351. I can also be reached by e-mail at Barbara.Flietner@Wisconsin.gov. You should note that failure to take the actions required by s. 292.11, Wis. Stats., to address this contamination might lead me to recommend that this case be reviewed for enforcement actions. Thank you for your attention to this matter.

Sincerely,



Barbara J. Flietner
Hydrogeologist
Wisconsin Department of Natural Resources
Bureau for Remediation & Redevelopment

Attachments:

Cc: Ms. Jacky Wiggins – Northland Rental Resource
Douglas County Department of Health and Human Services
Adam Streiffer – Department of Health Services
Alyssa Sellwood – WDNR
John Robinson - WDNR

Human Services Division
Suite 400
Phone 715-395-1304
Fax 715-395-1370

Health Division
Suite 324
Phone 715-395-1304
Fax 715-395-1434


Douglas County
Department of Health and Human Services
1316 N. 14th Street • Superior, WI 54880



Suite 327
Phone 715-395-1234
Fax 715-395-7371

Patricia A. Schanen
Director

<DATE>

<NAME>

<ADDRESS>

<City, State Zip>

Dear Mr. **XXXX**:

The Douglas County Department of Health and Human Services (DCDHHS) and the Wisconsin Department of Health Services (DHS) recently conducted indoor air sampling at the property located at 902-904 Belknap Street in Superior, WI. The air samples were analyzed to evaluate trichloroethylene (TCE), tetrachloroethylene (PCE) and vinyl chloride (VC) exposures to residents and employees in the above referenced property. This work was performed at the request of the Wisconsin Department of Natural Resources (DNR) to assess vapor intrusion concerns from historical drycleaner activities at the property. This letter summarizes the indoor air sampling results, as well as our assessment of the health risks to residents' and employees from indoor air exposures at this property.

In summary:

- **DCDHHS considers that breathing air in the building at 902-904 Belknap Street is a health hazard for pregnant women and women who may become pregnant, because of the potential for TCE exposure to cause health effects to the developing fetus.**
- **For individuals other than pregnant women and women who may become pregnant, exposure to PCE, TCE or VC at the reported indoor air concentrations do not represent an immediate health hazard for adults and children, but could present a long-term health threat if the vapor intrusion pathway is not interrupted.**

PCE and TCE are chemicals that were commonly used in the dry cleaning process. As a result of past drycleaner activity, soil and groundwater at the property are contaminated with PCE, TCE and VC (which is a breakdown product of PCE and TCE). Vapors from these three chemicals can migrate from contaminated soils and groundwater into the indoor air of the housing units and offices in the property. This process is known as vapor intrusion.

The results of the February 2016 indoor air sampling conducted at the property are presented in the below table. Several results exceed the Wisconsin DNR Vapor Action Levels (VAL). VALs are health-based indoor air levels established by the DNR. Air concentrations below the VAL are considered protective of health. Air concentrations above the VAL represent an increased long-term health risk. Based on the sample results, exposures to the drycleaner chemicals in the indoor air at

MISSION

To promote the health, safety, and well-being of individuals and families

902-904 Belknap Street could present a potential long-term health threat to the residents and employees there. In addition, there is a potential immediate health risk to a developing fetus as a result of exposures to TCE during the first three weeks of pregnancy. Due to the levels found in the indoor air at the property, pregnant women and women who may become pregnant should consider staying out of the property until indoor air levels have been lowered.

Indoor Air Sampling Results, collected 2/24/2016. 902-904 Belknap Street

	Indoor Air Vapor Action Level (VAL) ¹	Basement	2 nd floor
Tetrachloroethylene	6.2	49	4.8
Trichloroethylene (TCE)	0.39	21	1.7
Vinyl Chloride (VC)	0.65	22	1.7

Notes:

<http://dnr.wi.gov/topic/brownfields/vapor.html>

All units in parts per billion by volume (ppbV).

A **highlighted** result indicates that sample exceeds the Wisconsin DNR Vapor Action Level (VAL) for Residential Indoor Air.

DNR is working with the property owner to install a vapor mitigation system which will help prevent vapors from the contaminated soil and groundwater from entering the building, and will reduce indoor air levels to below the VALs. Vapor mitigation systems are similar to the type of system used to mitigate radon hazards in homes and buildings across Wisconsin. Factsheets that explain the vapor intrusion pathway, as well as more details about TCE, PCE and VC are enclosed.

DNR is also working with the property owner to remove the contamination from beneath the property. Follow-up sampling will be conducted once the vapor mitigation system is installed to confirm that the system is working to reduce indoor air levels to below the VAL.

Please contact one of our Environmental Health Specialists, Brian Becker - (715) 395-1244 - Brian.Becker@douglascountywi.org or Ken Zurian – (715) 395-1490 – ken.zurian@douglascountywi.org if you have any questions about the conclusions or recommendations made in this letter. For questions regarding the on-going remediation efforts, please contact Barbara Flietner, DNR Hydrogeologist at (715) 762-1351 or Barbara.Flietner@wisconsin.gov.

Sincerely,

Kathleen Ronchi
Health Officer

Cc: Barbara Flietner, Hydrogeologist, Wisconsin Department of Natural Resources
Adam Streiffer, Health Assessor, Wisconsin Department of Health Services

Encl: Fact Sheets on PCE, TCE, VC, and Vapor Intrusion



TETRACHLOROETHYLENE

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.

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:

- Wisconsin Poison Control Center, 800-222-1222
- Your local public health department: <https://www.dhs.wisconsin.gov/lh-depts/counties.htm>
- Division of Public Health, BEOH, 1 West Wilson Street, Rm. 150, Madison, WI 53701, (608) 266-1120
- The Agency for Toxic Substances and Disease Registry (ATSDR- <http://www.atsdr.cdc.gov/>) Information Center toll-free at 1-888-422-8737 or e-mail ATSDRIC@cdc.gov.

Prepared by the Wisconsin Department of Health Services, Division of Public Health, with funds from the Agency for Toxic Substances and Disease Registry, Public Health Service, U.S. Department of Health and Human Services.



CHEMICAL FACT SHEET

VINYL CHLORIDE

WHAT IS VINYL CHLORIDE?

Vinyl chloride is a colorless flammable gas that evaporates very quickly. It's used to make polyvinyl chloride (PVC) pipes, wire coatings, vehicle upholstery, and plastic kitchen ware. Higher than normal levels of vinyl chloride may be present inside new cars as the chemical evaporates from new vinyl products.

Vinyl chloride can be formed in the environment when soil organisms break down "chlorinated" solvents. In the environment, the highest levels of vinyl chloride are found in air around factories producing vinyl products. Vinyl chloride that is released by industries or formed by the breakdown of other chlorinated chemicals can enter the air and drinking water supplies. Vinyl chloride is a common contaminant found near landfills.

HOW ARE PEOPLE EXPOSED TO VINYL CHLORIDE?

Breathing: Most exposure to vinyl chloride occurs when people breathe contaminated air. If a water supply is contaminated, vinyl chloride can enter household air when the water is used for showering, cooking or laundry.

Drinking/Eating: People can be exposed to vinyl chloride if they drink or cook with contaminated water.

Touching: Vinyl chloride can be absorbed through the skin. This can occur when people handle vinyl products, contaminated soil, or bathe in contaminated water. However, skin absorption is probably a minor route of exposure.

DO STANDARDS EXIST FOR REGULATING VINYL CHLORIDE?

Water: The state drinking water standard for vinyl chloride is 0.2 parts per billion (ppb). We suggest you stop drinking water containing more than 0.2 ppb. If levels of vinyl chloride are above 2 ppb, avoid washing or bathing with it. You may still use the water to flush toilets. Contact your local public health agency for more information specific to your situation.

Air: No standards exist for regulating the amount of vinyl chloride allowed in the air of homes. However, the Wisconsin Department of Natural Resources (DNR) has set a residential indoor air action level for vinyl chloride at 0.62 parts per billion by volume (ppbv). The action level is considered to be protective of public health. Breathing vinyl chloride for a lifetime at 0.62 ppbv is very unlikely to be harmful to people. If vinyl chloride concentrations in air are above the action level, we recommend taking an action to halt exposure.

Most people cannot smell vinyl chloride until the level is between 300 and 10,000 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 vinyl chloride that can be released into outdoor ambient air by industries.

WILL EXPOSURE TO VINYL CHLORIDE RESULT IN HARMFUL HEALTH EFFECTS?

Vinyl chloride is very toxic. People should avoid contact with this chemical. The following health effects can occur after several years of exposure to vinyl chloride:

- Damage to the nervous system
- Changes in the immune system

Cancer: Exposure to vinyl chloride may increase a person's risk of developing cancer. Human and animal studies show higher rates of liver, lung and several other types of cancer.

Reproductive Effects: People exposed to levels of 1,000,000 ppb or more in air may have an increased risk of miscarriage and birth defects. Damage to male sperm-producing organs has occurred in laboratory animals.

Organ Systems: Being exposed to vinyl chloride can affect a person's liver, kidney, lung, spleen, nervous system and blood.

Bone: Long-term exposure to high levels of vinyl chloride can result in a decrease in bone strength in fingers, arms, and joints.

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.

CAN A MEDICAL TEST DETERMINE EXPOSURE TO VINYL CHLORIDE?

Vinyl chloride can be found in urine and body tissues after recent exposures. However, test results may not accurately reflect the level or duration of the exposure, or predict future health effects. Function tests of bone marrow, liver, kidney, and nerves may be useful in determining the effects of vinyl chloride exposure. 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/>

Prepared by the Wisconsin Department of Health Services, Division of Public Health, with funds from the Agency for Toxic Substances and Disease Registry, Public Health Service, U.S. Department of Health and Human Services.

Wisconsin DNR vapor intrusion quick facts



What is Vapor Intrusion?

Chemicals used in commercial or industrial activities – dry cleaning chemicals, chemical degreasers and petroleum products such as gasoline – are sometimes spilled and leak into nearby soil or groundwater. When this happens, these chemicals may release gases or vapors, which travel from the contaminated groundwater or soil and move into nearby homes or businesses. This is called vapor intrusion.

The process when chemical vapors from contaminated soil or groundwater enter a home or other structure is called vapor intrusion.

Why are these chemical vapors a problem?

The chemicals that cause vapor intrusion are known as volatile organic compounds, or VOCs. Even when spilled into soil or water, these chemicals easily evaporate. They don't cause human health problems when they evaporate into the outside air, but when their vapors move into homes or businesses, they may cause long-term health problems for the people who live or work in those buildings. These vapors are usually odorless and colorless and undetectable without special testing equipment.

Why is vapor intrusion a concern?

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

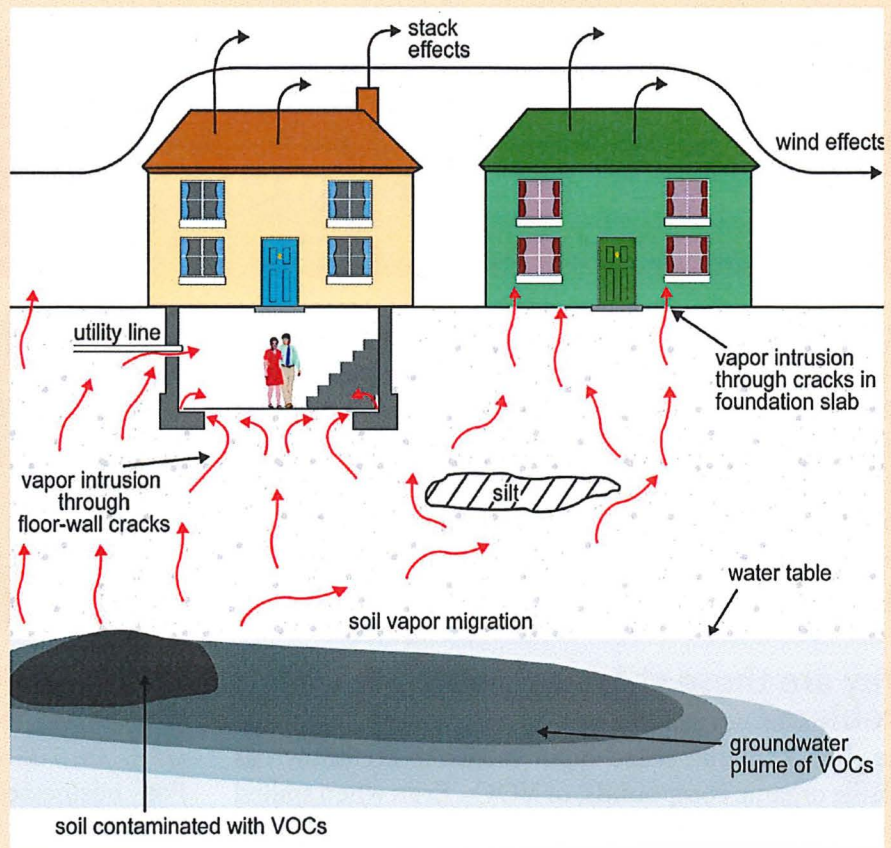
What should I expect if vapor intrusion is suspected near my home or business?

For businesses or other locations where VOC contamination has been found, 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 or 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 reverse). For more information about testing for vapor intrusion, see DNR-Pub-RR-954, "What to Expect During Vapor Intrusion Sampling."



How Vapors Enter a Building

If you live near a commercial or industrial facility or landfill where VOCs have entered either the soil or groundwater, there may be a potential for those chemicals to travel as vapors into your home or business. Vapors can enter buildings in various ways, including through cracks in the foundation and openings for utility lines. Building ventilation and weather can influence the extent of vapor intrusion.



Adapted from U.S. Environmental Protection Agency (EPA) graphic.
www.epa.gov/oswer/vaporintrusion/basic.html

Where can I find more information?

Health and vapor-related information can be found at the Wisconsin Department of Health Services (DHS) website at dhs.wisconsin.gov, search "Vapor." 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's 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.

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.



TRICHLOROETHYLENE (TCE) FACT SHEET

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 kidney, liver, lung and 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:

- Wisconsin Poison Center, 800-222-1222
- 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/>

Prepared by the Wisconsin Department of Health Services, Division of Public Health, with funds from the Agency for Toxic Substances and Disease Registry, Public Health Service, U.S. Department of Health and Human Services.