



Client Sample ID: Basement Living Room
Laboratory ID: 6010 - 1

Home Air Analysis For: Smith
Home Tested: 123 W. Maple Ave.
Boston, MA 25478

Sampling Professional: Alex Carter
Air Quality Inspections
1245 Main St. Suite B
Pleasantville, MA 84847

Client Sample ID: Basement Living Room
Sample Volume (L): 39
Date Sampled: 04/16/2012
Sample Type: TDT 112J

Report Number: 6010

Thank you for using Home Air Check Professional!
If you have questions about your report, please contact your home inspector or air quality professional.

Order Date: 04/18/2012
Scan Date: 04/18/2012
Report Date: 04/20/2012

Home Air Check™ Professional is the most advanced, trusted air testing product on the market today for identifying chemical and mold contamination in a home. Many indoor air quality (IAQ) issues identified by Home Air Check Professional can be easily remediated or eliminated. This test is an invaluable tool for homebuyers, homeowners, and renters because it provides important information on potential contamination issues in the home that cannot be detected by a visual inspection alone. Acting upon the information in this report will enable you to dramatically improve the air quality in your home, creating a healthier environment for you and your family.

What's in your Indoor Air Quality Report?

Your Indoor Air Quality Report has several sections describing different aspects of your home's air quality.

- 1. The Total Volatile Organic Compound (TVOC) level: a general indicator of the IAQ in your home. Typically, a lower TVOC means better IAQ in your home.
2. The Total Mold Volatile Organic Compound (TMVOC) level: an assessment of the quantity of actively growing mold in your home. Levels above 8 ng/L indicate that there is a source of actively growing mold in your home.
3. The Contamination Index™ (CI): shows the types of air-contaminating products and materials that are present in your home. Each CI category shows the approximate contribution of that category to the TVOC level, indicates how your home compares to thousands of other homes, and provides some suggestions for where these products and materials might be found. The CI is divided into 3 main sections: Building-Related Sources, Lifestyle Sources, and Mixed Building and Lifestyle Sources. Building-Related Sources are those that are typically part of the structure of the home and may be more difficult to reduce in the short term. Lifestyle Sources are those that the occupants of the home bring into the home and can usually be readily identified and remediated. Mixed Building and Lifestyle Sources are those that could belong to either category and investigation on your part may be necessary to determine which source is more likely. Levels indicated as Elevated or Severe should be immediately addressed, and those listed as Moderate are areas that can be improved over time. Since there are potentially many sources of VOCs, homes can often be re-contaminated even after sources have been removed because new products are constantly being brought into the home. Home occupants and homebuyers should take note of this fact, and view IAQ as a continuous improvement process.
4. Significant VOCs: listing of the chemical compounds measured with the Home Air Check Professional test that are large contributors to the TVOC level. Reduction of these specific chemical compounds will substantially reduce the TVOC level and greatly improve the IAQ of the home.

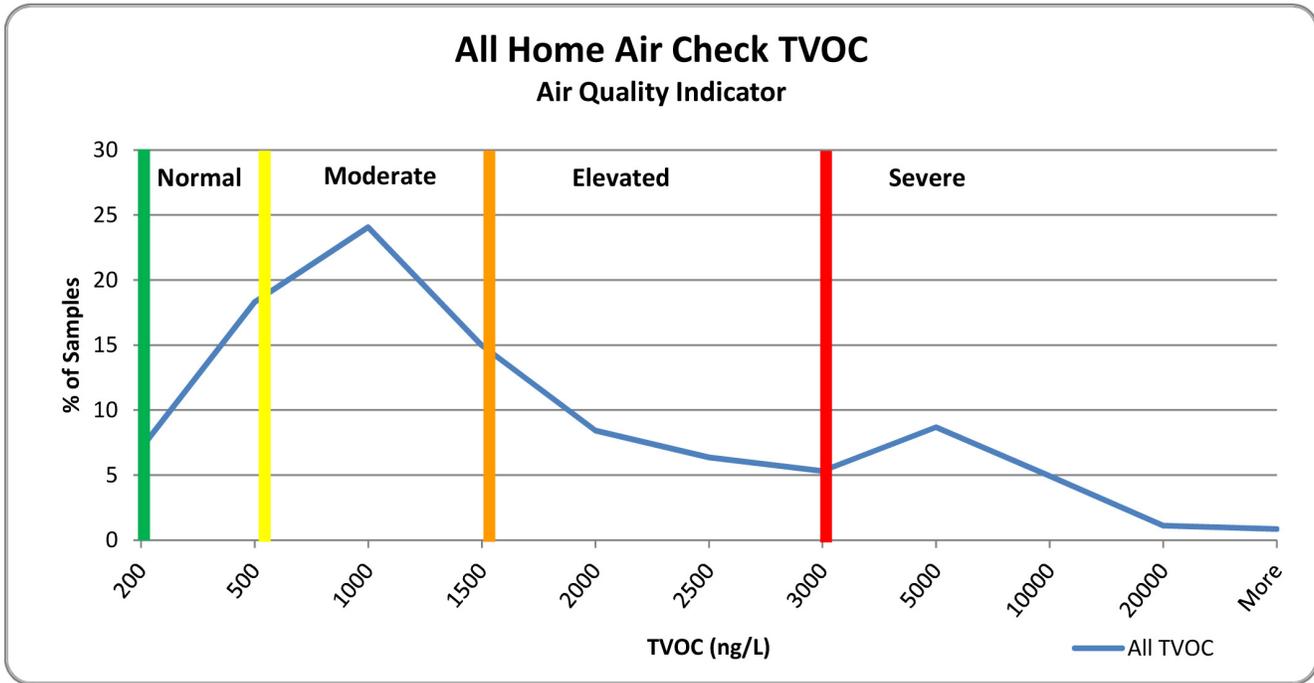
Prism Analytical Technologies, Inc., the creator of Home Air Check Professional, has been performing air quality assessments to industry and environmental consultants since 1995.

Total Volatile Organic Compound (TVOC) Summary

Your TVOC Level is (ng/L): 1500

HAC Air Quality Level:

Moderate



The chart above shows the TVOC levels for all homes tested using Home Air Check. The blue line represents the relationship between the percentage of homes (indicated on the vertical y-axis) and the TVOC level (indicated on the horizontal x-axis). The green, yellow, orange, and red vertical bars represent divisions between Normal, Moderate, Elevated, and Severe TVOC levels. At the Normal level, non-chemically sensitive individuals should not experience issues because of VOCs. As the TVOC value increases into the Moderate, Elevated, or Severe levels, individuals may experience aggravated health problems, and therefore, the need to address VOC issues becomes more critical. However, reductions in VOCs can be made at any level.

The U.S. federal government has not specified a TVOC limit for indoor air. However, the U.S. Green Building Council (USGBC) has recommended 500 ng/L as the upper TVOC limit. TVOC levels below 500 ng/L indicate that the IAQ is acceptable for most individuals; however, chemically sensitive persons may require lower levels. TVOC levels between 500 and 1,500 ng/L indicate that the air quality is marginal and some effect on the occupants is possible. Levels above 1,500 ng/L indicate that your IAQ should definitely be improved.

The presence of chemicals in your home can cause a wide range of problems, ranging from an unpleasant odor to physical symptoms (burning and irritation in the eyes, nose, and throat; headaches; nausea; nervous system effects; severe illness; etc.). In some cases, these conditions may make the home unlivable. Anyone with respiratory issues like asthma and allergies, as well as children, the elderly, and pregnant women are more susceptible to poor indoor air quality than healthy individuals. However, at elevated TVOC levels even healthy individuals are likely to experience ill effects. The following websites can offer more information:

US EPA: <http://www.epa.gov/iaq/>

American Lung Association: <http://www.lung.org/healthy-air/home/>

World Health Organization:

<http://www.euro.who.int/en/what-we-do/health-topics/environment-and-health/air-quality/policy/indoor-air-quality>

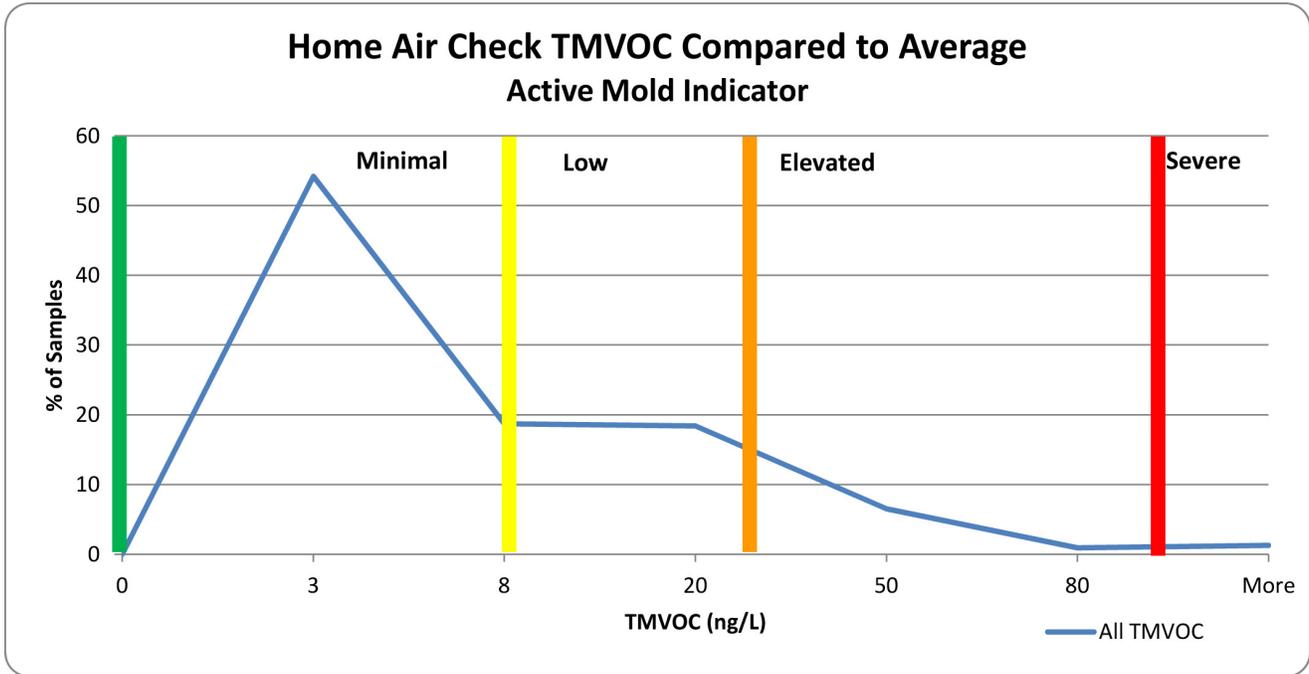
Lawrence Berkeley National Laboratory: <http://www.iaqscience.lbl.gov/voc-introduction.html>

The Contamination Index (CI) in the next pages of this report will help guide you through determining what types of products or materials in the home could be problematic for your IAQ, and will provide some recommendations to help reduce or eliminate them.

Total Mold Volatile Organic Compound (TMVOC) Summary

Your TMVOC Level is (ng/L): 19

Active Mold Level: Low



The chart above shows the TMVOC level for all homes tested using Home Air Check. The line represents the relationship between the percentage of homes (indicated on the vertical y-axis) and the TMVOC level (indicated on the horizontal x-axis). The green, yellow, orange, and red vertical bars represent divisions between Minimal, Low, Elevated, and Severe TMVOC levels.

The TMVOC value is an assessment of the quantity of actively growing mold in your home. Like TVOC, the U.S. federal government has not specified limits for TMVOC. Typically, if there is no plumbing leak, condensation, or water intrusion into the home, there will not be a mold problem. If active mold growth is indicated, the first step in fixing the problem is to find and repair the water leak, which is typically from the roof plumbing, windows, or condensation.

Levels below 8 ng/L are typical for most homes and should not cause great concern for healthy individuals. Levels between 8 and 30 ng/L indicate a low level of mold which, generally, affects people who are sensitive to molds.

Levels above 150 ng/L indicate that a high level of active mold growth is present and it is likely that nearly all occupants of the home will be affected.

For sensitive individuals, these cutoff levels may need to be reduced by up to a factor of four, depending on the degree of sensitivity. Always consult a mold remediation specialist before attempting to remove mold.

Contamination Index

Use the Contamination Index (CI) below to help you find products in your home that may be affecting your indoor air quality. Removing or reducing these products will improve your air quality. The concentrations reported here are approximate and may not add up to the TVOC value on page 2 of this report.

	Contamination Index Category	Estimated VOC Level (ng/L)	Severity	Description and Suggestions for VOC Reduction
Building Related Sources	Paints, Varnishes, and Coatings	270	Moderate	Typically, VOCs from paints and coatings can linger for several months, sometimes longer. Ventilate as much as possible after painting and dispose of paint cans and related supplies if possible. Consider using low-VOC paints/coatings in the future.
	PVC Cement	7	Moderate	PVC cement is used to join pieces of PVC pipe together, usually for plumbing. Chemical compounds in these products can cause respiratory irritation and headaches. Ventilate the area during and after use.
	HFCs and CFCs (Freons™)	5	Normal	Most often used as refrigerants for air conditioners and refrigerator/freezers and propellants for blown-in insulation, cushions, aerosol cans, etc. Many of these chemical compounds are being phased out because of the Montreal Protocol.
Lifestyle Related Sources	Personal Care Products	210	Moderate	Personal care products include soap, deodorant, lotions, perfumes, hair coloring supplies, nail care supplies, oral hygiene products, etc. They contain many VOCs that will dissipate if use is discontinued or reduced. Consider storing these products in a closed container when not in use, and dispose of unused products. Also, run an exhaust fan or open a window when dispensing these products.
	Alcohol Products	500	Severe	VOCs from alcohol can come from household cleaning products, antiseptic wipes, hand sanitizers, some solvents, reed diffusers, consumable alcohol, and some pharmaceuticals. These concentrations will be reduced by removing unnecessary products or proper storage of those materials in closed airtight containers. Consolidate cleaning products to the essentials. Consider switching to alternative methods of cleaning and sanitizing, e.g., baking soda, vinegar, borax, steam, etc., and ventilate the area during and after cleaning. We also recommend that you contact your home inspector or air quality professional for further discussion and recommendations.
	Odorants and Fragrances	150	Moderate	VOCs in this category can come from scented candles, potpourri, air fresheners, scented cleaning products, and scented personal care products. Reduce use of scented products and store unused products in a tight fitting container.
	Dry Cleaning Solvents	0	Normal	Typical dry-cleaning methods employ the use of carcinogenic chemicals. Dry-cleaning should be allowed to vent outside, without plastics bags, before being placed inside. Consider switching to a dry-cleaner that uses environmentally friendly methods.
	Medicinals	1	Normal	Ointments and creams, topical first aid/pain relievers.

Mixed Building and Lifestyle Sources

Contamination Index Category	Estimated VOC Level (ng/L)	Severity	Description and Suggestions for VOC Reduction
Adhesives-Toluene Based	0	Normal	Adhesives are used in many locations in the construction and maintenance of the home, and normally these VOCs will dissipate over time. Additionally, toluene-based adhesives can be found in arts and crafts supplies and automotive products and should be located and removed or properly stored in an closed airtight container.
Gasoline	110	Normal	VOCs from gasoline are typically a result of off-gassing from gas containers and gas-powered equipment such as lawnmowers, snow blowers, mini-bikes, etc. that are stored in attached garages or basements. These items should be stored externally to the home. Additionally, gasoline VOCs can linger on clothing after refueling an automobile at a gas station.
Fuel Oil, Diesel Fuel, Kerosene	0	Normal	Often found in garages and basements. These fuels are not very volatile so will not readily get into the air, but they can linger for a long time and produce a strong, unpleasant odor.
Moth Balls (Naphthalene Based)	0	Normal	Naphthalene based moth balls, attempt to locate these materials and remove them from the home. May be present with p-Dichlorobenzene-based moth crystals.
Moth Crystals (p-Dichlorobenzene Based)	0	Normal	p-Dichlorobenzene based moth crystals, attempt to locate these materials and remove them from the home. May be present with Naphthalene-based moth balls.
Light Hydrocarbons	170	Normal	Building materials; aerosol cans; fuel for cooking/camping/lighters; LPG; refrigerant; natural gas; propellant; blowing agent.
Light Solvents	570	Elevated	Stoddard solvent; mineral spirits; some paints, varnish, enamels; wax remover; adhesives; automotive products; penetrating oils. Many of these are present in common household products; however, recent renovation or construction will increase these levels. Increase ventilation during and after use of these products. High levels of Gasoline can contribute to the Light Solvents.
Methylene Chloride	1	Normal	Automotive products; degreasing solvent; paint stripper; adhesive remover; aerosol propellant; insecticide.

Significant VOCs

Based upon your specific home air analysis, the chemical compounds listed below are the significant contributors to the TVOC level reported on page 2 of your IAQ Report. These chemical compounds may come from a variety of sources as shown in the Contamination Index section of this report. Many of these chemical compounds are commonly found in homes. However, locating and removing the source of the chemical compound is the most effective way to reduce the contribution of that chemical compound to the TVOC, which ultimately leads to improved IAQ. If removing the source is not possible, try to contain it in some way (e.g., placing the source in an air-tight container when not in use). In addition, most homes have inadequate ventilation so increasing the amount of outside air or filtering or purifying re-circulated inside air will almost always reduce the TVOC. However, since VOCs continue to off-gas even when the sources are stored, ventilation and air-purification methods will need to be employed continuously in order to keep the VOC levels low.

Compound	Estimated VOC Level (ng/L)	Description
Ethanol	140	Cleaners, especially antiseptic wipes; personal care; consumable alcohol; some solvents; renewable gasoline component; pharmaceuticals
C 4	100	Aerosol propellant; cooking/camping/lighters fluids; liquefied petroleum gas (LPG); refrigerant; food additive
C 5	86	Aerosol propellant; blowing agent; gasoline fuel component
Isobutane	66	Gasoline and fuel additive; aerosol propellant; refrigerant; cooking/camping/lighter fluids
Acetone	57	Personal care, especially nail care; cleaners; paints and coatings; strippers and thinners; PVC cleaner; caulks and adhesives; wood filler; solvent
Cyclohexane	49	Solvent; glues and adhesives; some paints and coatings, petroleum fuel component
a-Pinene	49	Pine lumber; fragrances and essential oils; solvents; insecticides
Limonene	40	Fragrances; paints and coatings; cleaners; solvent; preservative
3-Methylhexane	14	Adhesive; paints and coatings, petroleum fuel component
C 6	13	Solvent; adhesive; grease; lubricant; paints and coatings; petroleum fuel component

Notes

This analysis was performed by Prism Analytical Technologies, Inc. (Prism), the developer of Home Air Check Professional. The results contained in this report are dependent upon a number of factors over which Prism has no control, which may include, but are not limited to, the sampling technique utilized, the size or source of sample, the ability of the sampler to collect a proper or suitable sample, the compounds which make up the TVOC, and/or the type of mold(s) present. Therefore, the opinions contained in this report may be invalid and cannot be considered or construed as definitive and neither Prism, nor its agents, officers, directors, employees, or successors shall be liable for any claims, actions, causes of action, costs, loss of service, medical or other expenses or any compensation whatsoever which may now or hereafter occur or accrue based upon the information or opinions contained herein.
