



# gardenroots

*The Superior, AZ Garden Project*

# IMPORTANT TERMS AND REFERENCES



THE UNIVERSITY OF ARIZONA  
COLLEGE OF AGRICULTURE & LIFE SCIENCES  
Environmental Science



**Ramirez-Andreotta**  
Integrated Environmental Science  
& Health Risk Laboratory



COLLEGE OF ENGINEERING  
Chemical & Environmental  
Engineering



# Important Terms

**Drinking Water Equivalent Level** – A type of health advisory (see definition below) that assumes 100% exposure from drinking water. These advisories are established to inform a consumer about the lifetime exposure concentration at which no negative, non-cancer health effects are expected to occur.

**Guideline** – A non-enforceable, but recommended maximum concentration of a chemical.

**Inorganic Compounds** – Metals, minerals, or compounds that contain little or no carbon and are generally geologically derived (come from the Earth, like the rocks, minerals, fossils, landforms, and the layers of the Earth’s surface).

**Limit of Detection** – The lowest concentration that our laboratory can measure (or detect) a contaminant. Samples that are below the Limit of Detection are represented as half of the detection limit (Limit of Detection/ $\sqrt{2}$ ).

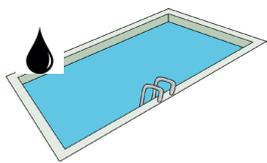
**Microorganism/Microbes/Microbial** – An organism that is microscopic, which means it is too small to be seen by the unaided human eye. Microbes refers to any of the microorganisms, including bacteria, fungi, protozoa, and viruses. In this study, we measured bacteria that can indicate the presence of fecal contamination and/or pathogens.

**ml (Milliliters)** – A unit of measure that is equal to one-thousandth of a liter, equal to a drop of water approximately as large as your thumbnail. One liter contains 1,000 milliliters.

**Organic Chemicals/Compounds** – A chemical (or compound) is a substance consisting of two or more elements (from the periodic table) associated by chemical bonds. An “organic” compound contains the element carbon.

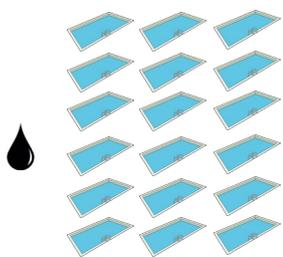
**Standards** – The standards reported in this booklet are enforceable and regulatory values, developed either by federal agencies or by the state of Arizona for water providers/utilities. They are different from advisories (see definition on previous page) and guidelines.

**µg/L (Micrograms per Liter)** – A measure of how many micrograms of a substance (such as a metal, chemical) are in a liter of liquid (such as water). This measure can also be called parts per billion (ppb) or 0.0000001%. For comparison, 1 µg/L or ppb is the equivalent to a drop of ink in a 15,000 gallon backyard swimming pool.



Micrograms per liter (µg/L)	Parts per billion (ppb)	1/1,000,000,000
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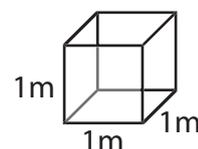
**ng/L (Nanograms per Liter)** – A measure of how many nanograms of a substance (such as a metal, chemical) are in a liter of liquid (such as water). This measure can also be called parts per trillion (ppt) or 0.0000000001%. For comparison, 1 ng/L or ppt is the equivalent to a drop of ink in 12-million gallons, this is equal to 18 Olympic size swimming pools.



Nanograms per liter (ng/L)	Parts per trillion (ppt)	1/1,000,000,000,000
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**µg/m<sup>3</sup>**

A measure of how many micrograms of a substance (such as a metal, chemical) are in a volume of air (one cubic meter).



# Government Agency References

## Agency for Toxic Substances and Disease Registry Toxicological Profiles

The Agency for Toxic Substances and Disease Registry produces toxicological profiles, which summarize important studies on a wide range of contaminants, including metals.

 <https://www.atsdr.cdc.gov/substances/index.asp>

## Arizona Department of Environmental Quality

The Arizona Department of Environmental Quality's (ADEQ) mission is to protect and enhance public health and the environment. ADEQ core responsibilities include pollution control, environmental monitoring and assessment, compliance management, cleanups, outreach and assistance, and policy development.

 [www.azdeq.gov](http://www.azdeq.gov)

## Arizona Department of Health Services

The Arizona Department of Health Services (ADHS) promotes and protects the health of Arizona's children and adults. ADHS operates programs in behavioral health, disease prevention and control, health promotion, community public health, environmental health, maternal and child health, emergency preparedness and regulation of childcare and assisted living centers, nursing homes, hospitals, other health care providers and emergency services.

 [www.azdhs.gov](http://www.azdhs.gov)

## Arizona Department of Environmental Quality

Arizona Department of Environmental Quality (ADEQ) mission is to protect and enhance public health and the environment in Arizona. To achieve this, we administer the state's environmental laws and delegated federal programs to prevent air, water and land pollution and ensure cleanup.

 <http://www.azdeq.gov/>

## University of Arizona Superfund Research Program - Community Information Sheets

The University of Arizona Superfund Research Program (UASRP) uses an interdisciplinary approach to study hazardous waste issues in the U.S. Southwest (including Arizona-Sonora border and Native Nations). Their mission is to advance science and to use the research conducted by our program for the improvement of human health and the environment. The information sheets are designed to provide a basic introduction to environmental issues for community members neighboring contaminated sites as well the general public.

 <http://superfund.arizona.edu/info-material>

## **US Environmental Protection Agency**

The US Environmental Protection Agency (EPA)'s mission is to protect human health and the environment by developing and enforcing regulations, giving grants, studying environmental issues, and educating people about the environment.

 [www.epa.gov](http://www.epa.gov)

## **United States Food and Drug Administration**

The United States Food and Drug Administration (FDA) is responsible for protecting the public health by ensuring the safety, efficacy, and security of human and veterinary drugs, biological products, and medical devices; and by ensuring the safety of our nation's food supply, cosmetics, and products that emit radiation.

 <https://www.fda.gov>