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# Environmental Engineering Dictionary and Directory

**Thomas M. Pankratz**



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# Preface

This book has been written to help professionals, students, and lay people identify the increasing number of terms in the fields of environmental engineering and science.

More than 8000 terms, acronyms, and abbreviations applying to wastewater, potable water, industrial water treatment, seawater desalination, air pollution, incineration, and hazardous waste remediation have been defined.

The most unique feature of this book is the inclusion of more than 3000 trademarks and brand names. Many of these commercial terms for proprietary products or processes are so common or descriptive that they have fallen into general use. This confusion is compounded by the fact that many terms contain similar prefixes (e.g., bio-, enviro-, hydra-, hydro-, etc.) and it is often difficult to tell them apart.

This book originates from *Screening Equipment Handbook*, first published in 1988, whose glossary contains a list of screening-related trademarks and brand names along with their company affiliation. Even though that list was relatively short, a surprisingly large number of companies had come and gone or changed their names through mergers or acquisitions. This led to an expanded directory entitled, *The Dictionary of Water and Wastewater Treatment Trademarks and Brand Names*, published in 1991, and which contained 1200 commercial terms.

*The Concise Dictionary of Environmental Engineering* followed in 1996. In addition to the 2200 commercial terms, it was further expanded to include 3000 generic environmental engineering terms. Shortly after it was published, the environmental equipment manufacturing industry began a consolidation led by USFilter, Waterlink, Baker Hughes, ITT, F.B. Leopold, and others that has resulted in changes to 43% of the terms included in the 1996 edition.

During the research for this book, many other books, magazines, dictionaries, glossaries, buyer's guides, catalogs, brochures, and technical papers were reviewed to locate new terms and their definitions. Although there are too many references to list, I would like to acknowledge the help of these publications and their authors.

In addition to technically reviewing this book, John B. Tonner was especially helpful with his suggestions, advice, research assistance, and computer wizardry. Regardless of when I would call, John was always available to help. His [www.world-wide-water.com](http://www.world-wide-water.com) Web site also proved to be a valuable research tool.

I would like to acknowledge the libraries that were used in my research. They include the M.D. Anderson Library at the University of Houston, the Helen Hall Library in League City, Texas, the Houston Public Library Central Branch, and the library at King Fahd University of Petroleum and Mining in Dhahran, Saudi Arabia.

I also recognize USFilter and Alfa-Laval for their support.

I'm grateful for the assistance of the many friends and colleagues who suggested new terms and challenged old ones, helped with definitions, provided encouragement,

or assisted in the book's production. Some of these people include Robert W. Brown, Gordon Carter, Bill Copa, Chad Dannemann, Jim Force, Jack Gardiner, Duane Germentis, Stacie Jones, John Meidl, Mack Moore, Chad Pankratz, Bill Perpich, Barb Petroff, Jim Symons, Mark Wilson, and Joe Zuback.

Like the first edition, published in 1996, much of my work on this book took place while traveling; the rest was done in the evenings and weekends. I would never have been able to finish without the continued patience and support of my wife, Julie, and our children, Chad, Sarah, Mike, and Katie.

This book is dedicated to my wife, Julie Lynn Pankratz, and our grandson, Gabriel R. Suarez, who was born the same day this book was completed.

**Tom Pankratz**

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# Introduction

This dictionary contains terms used in the fields of environmental engineering and environmental science, and the definitions provided relate to their use in an environmental context only.

The commercial terms represent company brand names or trademarks, and have been italicized to differentiate them from the technical terms in general usage. Whenever appropriate, the use of <sup>TM</sup> or <sup>®</sup> has been included following the name of the entry, although terms may be registered trademarks even though they do not include either symbol. It is also possible that some of the entries listed as trademarks may not be registered or properly used by the manufacturers listed in connection with them.

Brand names and trademarks often evolve and take different forms. Variations in the use of capitalization, hyphens, or symbols often occur over time. The representation of the words included in this book reflects the latest version seen in use and are assumed to be the preferred form.

Commercial acronyms are included if they are registered trademarks or commonly used abbreviations of company names. Nonregistered product model numbers and trademarks that are the same as the name of a company are not always included. Many definitions were extrapolated from stories, advertisements, or product brochures and were not directly corroborated by the company listed as being responsible for the term.

The company name included in the definition of a commercial term usually represents the company that manufactures that particular product or process. In some cases, the listed company may only market, distribute, or license the product.

In several instances, the same brand name has been listed more than once to describe different products or processes from different companies. The author is unaware of any dispute involving these cases and is simply reporting that the companies identified have used the term for the product described. In some cases, the term may be dormant, obsolete, or no longer available from the company listed.

Company addresses, phone numbers, and e-mail addresses listed in the Manufacturer's Directory were confirmed over a period of several years. Some contact information may have changed, especially with the recent telephone area code changes in many parts of the U.S. Readers are cautioned that an incorrect phone number, address, or e-mail address does not mean that a company is no longer in business.

There are a few cases where a company whose name is listed in a definition is not included in the Manufacturer's Directory. If current contact information for a company could not be located, the out-of-date information was not included.

Terms have been arranged alphabetically using current word processing software.

In general, terms related to plumbing, household products, computer programs, or software have not been included.

All of the terms have been listed in good faith. A reasonable attempt has been made to confirm all definitions and, in the case of commercial terms, verify the companies responsible for the listings. The author apologizes for any omissions or errors.

If you are aware of any changes or additions that should be included in subsequent editions, please send them to Tom Pankratz, P.O. Box 75064, Houston, Texas USA, 77234-5064.

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# Foreword

The areas of environmental engineering and sciences and their related business activities have grown to the point that they overlap the professional and private lives of almost everyone. As environmental issues become more complicated, so does the vocabulary required to understand and discuss them. This *Environmental Engineering Dictionary and Directory* defines many terms that did not even exist a decade ago.

My own field of water reclamation and reuse is an example of a relatively new area of environmental engineering that has fostered the introduction of many new terms and technologies.

When considering advanced treatment of municipal and industrial wastewaters, a repeated thesis has been that such a high quality effluent should be put to beneficial use rather than simply wasted. Today, technically proven treatment and purification processes exist to provide treated water of almost any quality desired. This offers a realistic framework for considering water reclamation and reuse in many parts of the world that are experiencing water shortages. Nonpotable water reuse applications, such as agricultural and landscape irrigation, toilet flushing in large office buildings, and water for aesthetic and environmental purposes have become major options for planned water reuse.

Water reuse provides innovative and alternative options for agriculture, municipalities, and industries. However, water reuse is only one alternative in planning to meet future water resource needs. Conservation, efficient management and use of existing water supplies, and the development of new water resources based on watershed management or seawater desalination are examples of other alternatives.

As the field of environmental engineering continues to develop, so will the vocabulary required for its discussion and study. Our need to understand the environment and to better appreciate our relationship with nature is greater now than at any time in our history. Thus Tom's book is particularly timely and relevant.

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Department of Civil and Environmental Engineering

University of California at Davis



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# A

**Å** See “Angstrom (Å).”

**A&I** Alternative and Innovative.

**A/O**<sup>®</sup> Wastewater treatment process for biological removal of nitrogen by USFilter/Krüger.

**A<sup>2</sup>O**<sup>®</sup> Biological treatment process for phosphorus and nitrogen removal by USFilter/Krüger.

**A<sup>2</sup>C**<sup>TM</sup> Biological wastewater treatment system by Baker Process — Municipal Division.

**A·I·R** Photocatalytic process to destroy VOCs by Trojan Technologies, Inc.

**AA** See “atomic absorption spectrophotometry (AA).”

**AAEE** American Academy of Environmental Engineers.

**AAP** Asbestos Action Program.

**AAPCO** American Association of Pesticide Control Officials.

**AAQS** Ambient air quality standards.

**AARC** Alliance for Acid Rain Control.

**AAS** American Association for the Advancement of Science.

**ABA1000**<sup>®</sup> Alumina oxide for phosphate reduction by Selecto, Inc.

**ABA2000**<sup>®</sup> Alumina oxide for lead and heavy metals removal by Selecto, Inc.

**ABA8000**<sup>®</sup> Alumina oxide for fluoride removal by Selecto, Inc.

**abandoned well** A well whose use has been permanently discontinued or which is in a state of such disrepair that it cannot be used for its intended purpose.

**abatement** Reducing the degree or intensity of, or eliminating, pollution.

**abattoir** A place where animals are slaughtered for their meat and meat byproducts.

**ABC Filter**<sup>TM</sup> Automatic backwashable cartridge filter by USFilter/Rockford.

**Abcor**<sup>®</sup> Ultrafiltration membrane product by Koch Membrane Systems, Inc.

**ABF** Activated bio-filtration wastewater treatment system by Infilco Degremont, Inc.

**ABF** Traveling bridge type automatic backwashing gravity sand filter by Aqua-Aerobic Systems, Inc.

**abiocoen** All of the geologic, climatic, and other nonliving elements of an ecosystem.

**abiotic** Nonliving elements in the environment.

**ABJ**<sup>TM</sup> ABJ product group of Sanitaire Corp.

**ablation** The combined processes of glacial melting and evaporation which results in a net loss of ice.

**ablation zone** The lower part of a glacier where the net loss of ice exceeds the net gain.

**ABS** (1) Acrylonitrile-butadiene-styrene. A black plastic material, used in the manufacture of pipes and other components. (2) Alkyl-benzene-sulfonate. A surfactant formerly used in synthetic detergents that resisted biological breakdown.

**absolute filter rating** A filter rating which indicates that 99.9% of the particles larger than a specified size will be removed by the filter.

**absolute humidity** The total amount of water vapor present in the air, measured in grams per cubic meter.

**absolute pressure** The total pressure in a system, equal to the sum of the gage pressure and atmospheric pressure.

**absolute purity water** Water with a specific resistance of 18.3 megohm-cm at 25°C.

**absolute zero** The lowest temperature possible; 0° on the Kelvin scale or approximately -273°C (-459.7°F).

**absorbate** A substance used to soak up another substance.

**absorbed dose** The amount of a chemical that enters the body of an exposed organism.

**absorbent** Any substance that exhibits the properties of absorption.

**absorption** The process of transferring molecules of gas, liquid, or a dissolved substance to the surface of a solid where it is bound by chemical or physical forces.

**absorption field** A trench or pit filled with gravel or loose rock designed to absorb septic tank effluent.

**ABW<sup>®</sup>** Traveling bridge type gravity sand filter by Infilco Degremont, Inc.

**abyssal zone** A zone of deep oceanic waters, generally deeper than 2000 meters and between the hadal and bathyal zones where light does not penetrate.

**AC** See “activated carbon.”

**AC<sup>®</sup>** Industrial wastewater treatment unit by Colloid Environmental Technologies Co.

**ACA** American Conservation Association.

**acaricide** A pesticide used to kill spiders, ticks, or mites.

**ACBM** Asbestos-containing building material.

**Accelapak<sup>®</sup>** Modular water treatment plant by Infilco Degremont, Inc.

**Accelator<sup>®</sup>** Solids contact clarifier with primary and secondary mixing zones by Infilco Degremont, Inc.

**Accelo Hi-Cap** Filter underdrain block formerly offered by Infilco Degremont, Inc.

**Accelo-Biox<sup>®</sup>** Modular wastewater treatment plant by Infilco Degremont, Inc.

**Accel-o-Fac<sup>™</sup>** Sewage treatment plant design by Lake Aid Systems.

**acceptable risk** The level of risk associated with minimal adverse effects, usually determined by a risk analysis.

**Access Analytical** Former name of IDEXX Laboratories, Inc.

**accessory species** Species found in less than half but more than one quarter of the area covered by a plant community.

**accident site** The location of an unexpected occurrence, failure or loss, either at a plant or along a transportation route, resulting in a release of hazardous materials.

**acclimatization** The physiological and behavioral adjustments of an organism to changes in its environment.

**Accofloc<sup>®</sup>** Ion exchange media by Colloid Environmental Technologies Co.

**accretion** The increase in size of an inorganic body by the addition or accumulation of particles.

**ACCU<sup>®</sup>** Air sampler by Rupprecht & Patashnick.

**Accuguard<sup>™</sup>** Automated pH electrode cleaning and calibration module by BIF.

**Accu-Mag** Electromagnetic flow meter by USFilter/Wallace & Tiernan.

**accumulation zone** The upper part of a glacier where net gain in ice exceeds the net loss.

**accumulator** A tank installed in a circulating water system to allow for fluctuations in flow, temperature, pressure, or other variations in operation.

**AccuPac<sup>®</sup>** Cross-corrugated surface media for biological wastewater treatment by Brentwood Industries, Inc.

**Accura-flo<sup>®</sup>** Flumes for measuring flows by Composite Structures.

**Accu-Tab<sup>™</sup>** Tablet chlorination system by Hammonds and PPG Industries, Inc..

**Accuvac** Chemical reagents in vacuum vials for chemical analysis of fluids by Hach Co.

**ACE rule** See “Any Credible Evidence rule (ACE rule).”

**acetaldehyde** An organic chemical formed during the disinfection of water, most commonly associated with the use of ozone as disinfectant. Chemical formula is  $\text{CH}_3\text{CHO}$ .

**acetic acid** A weak, organic acid contained in vinegar and used in the manufacture of organic chemicals and plastics. Also called “ethanoic acid.” Chemical formula is  $\text{CH}_3\text{COOH}$ .

**acetone** A colorless, volatile liquid used in organic synthesis and as a commercial solvent. Chemical formula is  $\text{CH}_3\text{COCH}_3$ .

**ACFM** Actual cubic feet per minute.

**ACFTD** Air cleaner fine test dust. Dust used to calibrate particle counters.

**ACGIH** American Conference of Governmental Industrial Hygienists.

**ACH** (1) See “air changes per hour (ACH).” (2) See “aluminum chlorohydrate (ACH).”

**ACI** American Concrete Institute.

**acid** (1) A substance that can react with a base to form a salt. (2) A substance that can donate a hydrogen ion or proton.

**acid deposition** See “acid rain.”

**acid mine drainage** Drainage of water from areas that have been mined for coal or other mineral ores, usually having a low pH due to contact with sulfur-bearing material.

**acid neutralizing capacity (ANC)** Measure of the ability of water or soil to resist changes in pH.

**acid rain** Precipitation having an unusually low pH, generally attributed to the absorption of sulfur dioxide pollution in air. Also known as “acid deposition.”

**acid shock** The biological disruption of an aquatic system that results from rapid acidification.

**acid-forming bacteria** Microbes that can metabolize complex organic compounds under anaerobic conditions, leading to the production of methane.

**acidic** The condition of water or soil that contains a sufficient amount of acid substances to lower the pH below 7.0.

**acidity** The capacity of an aqueous solution to neutralize a base.

**acidophil** (1) A cell or substance easily stained by acid dyes. (2) An organism that has an affinity for, and grows in, an acidic environment. Also spelled “acidophile.”

**ACL** Alternate concentration limit.

**ACM** Asbestos-containing material.

**ACM<sup>®</sup>** Thin film composite reverse osmosis membrane by TriSep Corp.

**Acme** Former screening equipment manufacturer.

**ACM-LP<sup>™</sup>** Low pressure thin film composite reverse osmosis membrane by TriSep Corp.

**ACMS<sup>™</sup>** Seawater reverse osmosis membrane by TriSep Corp.

**ACoE** U.S. Army Corps of Engineers.

**Acoustical<sup>®</sup>** Low noise blowers by Tuthill Pneumatics Group.

**ACP** Air Carcinogen Policy.

**acre-foot** The volume of water that would cover a one acre area one foot deep. Equivalent to approximately 1233.6 cubic meters or 325,900 gallons.

**acrolein** An aldehyde compound used as a microbiocide in the manufacture of organic chemicals.

**Acro-Pac<sup>®</sup>** Packaged seawater reverse osmosis system by Aqua-Chem, Inc.

**ACS-Plus** High purity chemicals for laboratory use by Hach Co.

**ACT-100<sup>®</sup>** Double wall fiberglass laminated steel underground tank by Steel Tank Institute.

**ACT<sup>™</sup>** Combined aeration technologies by Aeration Industries, Inc.

**Acticarb<sup>®</sup>** Activated carbon by Elf Atochem North America, Inc.

**Actifil<sup>®</sup>** Packing media for biological reactors by Sanitaire Corp.

**Actiflo<sup>®</sup>** High rate sedimentation process for water and wastewater treatment by USFilter/Krüger.

**Actifloc<sup>™</sup>** Modular, high-rate water treatment plant by USFilter/General Filter.

**Actinomycetes** A group of bacteria that share some features with fungi, and recognized as a source of musty or earthy odors in drinking water.

**activated alumina** A partially dehydrated form of aluminum oxide frequently used as an adsorbent. Chemical formula is  $Al_2O_3$ .

**Activated Biofilm Method** Fixed film wastewater treatment system by JDV Equipment Corp.

**activated biofilter** A fixed film biological wastewater treatment process where a portion of the secondary sludge is returned to the reactor influent.

**activated carbon (AC)** A highly adsorbent form of carbon used to remove dissolved organic matter from water and wastewater or odors and toxic substances from gaseous emissions.

**activated charcoal** See “activated carbon.”

**activated sludge** The biologically active solids in an activated sludge process wastewater treatment plant.

**activated sludge process** A biological wastewater treatment process where a mixture of wastewater and biologically enriched sludge is mixed and aerated to facilitate aerobic decomposition by microbes.

**activation energy** The energy required to initiate a process or reaction.

**Activator** Package wastewater treatment plant by Pollution Control, Inc.

**activator** A chemical added to a pesticide to increase its activity.

**Activator III** Oil recovery product by Sybron Chemicals, Inc.

**active ingredient** In any pesticide product, the component that kills, or otherwise controls, target pests.

**active life** The period of operation of a facility that begins with initial receipt of a solid waste and ends at completion of closure activities.

**active portion** Any area of a facility where treatment, storage, or disposal operations continue to be conducted.

**active solar heating** A heating system that derives heat from the sun's rays and incorporates active devices such as pumps or blowers to move heat from the point of collection to the point of storage or use.

**Activol™** Wastewater grease emulsifier by Probiotic Solutions.

**Acumem** Reverse osmosis product formerly offered by USFilter.

**Acumer®** Water treatment polymers by Rohm and Haas, Co.

**acute exposure** A single exposure to a toxic substance, usually lasting no longer than a day, which results in severe biological harm or death.

**acute toxicity** A poisonous effect produced by a single short-term exposure which results in severe biological harm or death.

**Acutec** Gas detection system by USFilter/Wallace & Tiernan.

**ACWA** American Clean Water Association.

**ACWM** (1) Asbestos-containing waste material. (2) See "asbestos-containing waste materials (ACUM)."

**AD** Dry blending and dilution system by Komax Systems, Inc.

**ADA** American Desalting Association. Formerly "NWSIA."

**ADAM** Acryloyl ethyl dimethyl amine.

**adaptation** Changes in an organism's structure or habits which help it adjust to its surroundings.

**Adcat™** Oxidation catalyst systems for air pollution control by Goal Line Environmental Technologies.

**Addigest®** Package extended aeration wastewater treatment plant by Smith & Loveless, Inc.

**additive** A chemical substance incorporated into another substance to improve or preserve its quality.

**additive mortality** The total mortality caused by different factors affecting a population for a given period of time including predation, fire, or catastrophes.

**add-on control device** An air pollution control device such as carbon absorber or incinerator that reduces the pollution in an exhaust gas.

**adenosine diphosphate (ADP)** A compound involved in the mobilization of energy in cellular metabolism. Energy is stored by adding a phosphate group to ADP to produce ATP.

**adenosine triphosphate (ATP)** A high-energy phosphate compound that serves as the prime energy carrier in living organisms. Energy is released when ATP is converted to ADP and phosphate.

**adenovirus** A waterborne pathogen that causes upper respiratory infections and gastroenteritis.

**ADF** See "average daily flow (ADF)."

**adhesion** The force of molecular attraction between unlike molecules.

**ADI** Acceptable daily intake.

**adiabatic lapse rate** The constant rate at which temperatures decrease as altitude increases. In a dry atmosphere the dry adiabatic lapse rate (DALR) is approximately  $-1.00^{\circ}\text{C}/100$  m rise.

**adit** A horizontal passageway into a mine to provide access or drainage.

**AdjustAir<sup>®</sup>** Adjustable coarse bubble air diffuser by USFilter/Diffused Air Products Group.

**Adjust-O-Pitch** Mixing propellers with adjustable pitch blades by Walker Process Equipment.

**administrative order** An EPA-issued order directing an individual, business, or other entity to take corrective action or refrain from an activity.

**admixture** (1) A material or substance added in mixing. (2) A substance other than cement, aggregate, or water that is mixed with concrete.

**Ad-Ox** Polishing scrubber for odor abatement by Purafil, Inc.

**ADP** See “adenosine diphosphate (ADP).”

**Adpec** Horizontal vacuum filter by Komline-Sanderson Engineering Corp.

**ADR** (1) Accidental rectal discharge. (2) Alternative dispute resolution.

**ADROWPU<sup>®</sup>** Water purification unit by Zenon Environmental, Inc.

**Adsep<sup>™</sup>** Chromatographic process for separating organic and inorganic compounds by USFilter/Rockford.

**Adsolv** Activated carbon VOC control system by CSM Worldwide/RaySolv.

**adsorbable organic halides (AOX)** The gross measurement of all chlorinated organic compounds in an effluent.

**adsorbate** A material adsorbed on the surface of another.

**adsorbent** A material used to adsorb substances to its surface.

**adsorption** The process of transferring a substance from a liquid to the surface of a solid where it is bound by chemical or physical forces.

**Adsorption Clarifier<sup>™</sup>** Upflow buoyant media flocculator/clarifier by USFilter/Microfloc.

**adulterants** Chemical impurities or substances that by law do not belong in a food or pesticide.

**adulterated** (1) Any pesticide whose strength or purity falls below the quality stated on its label. (2) A food, feed, or product that contains illegal pesticide residues.

**Advance<sup>®</sup>** Chlorine gas feeder systems by Capital Controls Co.

**Advanced Fluidized Composting<sup>™</sup>** A combined biological and chemical sludge treatment process by USFilter/Industrial Wastewater Systems.

**advanced oxidation process (AOP)** A process using a combination of disinfectants such as ozone and hydrogen peroxide to oxidize toxic organic compounds to nontoxic form.

**advanced secondary treatment** Secondary wastewater treatment with enhanced solids separation.

**advanced treatment plant (ATP)** A treatment facility using processes that provide treatment to levels greater than that of a conventional plant.

**advanced wastewater treatment (AWT)** Treatment processes designed to remove pollutants such as phosphorus, nitrogen, and a high percentage of suspended

solids which are not adequately removed by conventional secondary treatment processes.

**advective** The transfer of heat by horizontal currents of air.

**Adventi<sup>®</sup>** Package water treatment plant by Infilco Degremont, Inc.

**advisory** A nonregulatory document that communicates risk information to those who may have to make risk management decisions.

**AEM** Acoustic emission monitoring.

**aeolian deposit** Soil deposited by the wind.

**Aeralater<sup>®</sup>** Packaged iron and manganese removal system by USFilter/General Filter.

**aerated pile composting** A composting method where municipal wastewater solids are mixed with a bulking material and the mixture placed over a forced air ventilation system.

**aeration** The addition of air or oxygen to water or wastewater, usually by mechanical means, to increase dissolved oxygen levels and maintain aerobic conditions.

**Aeration Engineering Resources Corp.** Former name of Aercor product group of Sanitaire Corp.

**Aeration Panel<sup>™</sup>** Fine bubble membrane diffuser panel by Parkson Corp.

**aerator** A device used to introduce air or oxygen into water or wastewater.

**Aerators, Inc.** Former name of USFilter/Aerator Products.

**Aercor** Aeration and packing products by Sanitaire Corp.

**Aer-Degritter** Aerated grit removal system by USFilter/Headworks Products.

**AerFlare** Air diffuser by Walker Process Equipment.

**Aergrid<sup>™</sup>** Floor grid aeration system by Aeration Technologies, Inc.

**Aermax<sup>®</sup>** Fine pore aeration diffuser by Aeration Technologies, Inc.

**Aero-Accelator<sup>®</sup>** Circular, packaged activated sludge treatment plant by Infilco Degremont, Inc.

**aeroallergen** An allergen transported by air.

**aerobe** An organism that requires free oxygen for respiration.

**aerobic** Condition characterized by the presence of free oxygen.

**aerobic digestion** Sludge stabilization process involving direct oxidation of biodegradable matter and oxidation of microbial cellular material.

**aerobic treatment** Process by which microbes decompose complex organic compounds in the presence of oxygen and use the liberated energy for reproduction and growth.

**Aeroburn** Wastewater treatment plant by Walker Process Equipment.

**Aerocleve** Former manufacturer whose product line is now offered by Chemineer, Inc.

**Aeroductor** Aerated grit removal system by Lakeside Equipment Corp.

**Aero-Filter** Rotary distributor by Lakeside Equipment Corp.

**Aer-O-Flo** Wastewater treatment equipment product line by Purestream, Inc.

**aerogel** A substance formed by the suspension of small bubbles of gas in a liquid or solid.

**Aero-Max** Tubular membrane diffuser by Aeration Research Company.

**Aero-Mod<sup>®</sup>** Wastewater treatment product line by Waterlink/Aero-Mod Systems.

**Aeropure** Activated carbon vapor filtration system by American Norit Company, Inc.

**AeroScrub** Flue gas scrubber by Aeropulse, Inc.

**Aerosep**<sup>®</sup> Multi-stage aerosol separation system by Kimre, Inc.

**aerosols** A suspension of colloidal particles in air or another gas.

**Aero-Surf** Air driven rotating biological contactor by USFilter/Envirex.

**Aero-Terra-Aqua** ATA Technologies, Inc.

**Aerotherm** In-vessel composting system by Fairfield Service Co.

**AerResearch** Aeration diffuser product line by Aeration Research Company.

**Aershear**<sup>™</sup> Coarse bubble diffuser by Aeration Technologies, Inc.

**Aertec**<sup>™</sup> Air diffuser product line by Aeration Technologies, Inc.

**Aertube**<sup>™</sup> Static tube aerators by Aeration Technologies, Inc.

**Aethalometer**<sup>™</sup> An aerosol black carbon monitor for measuring agricultural burning, diesel emissions and speciation of fine particles by Andersen Instruments, Inc.

**AF Series**<sup>™</sup> Backwashable filter and carbon treatment units by Asahi America.

**AFCT**<sup>™</sup> Advanced fluidized composting process by USFilter/Industrial Wastewater Systems.

**AFD** Adjustable frequency drive.

**affected public** The people who live and/or work near a hazardous waste site.

**affluent stream** A stream or river flowing into a larger river or lake.

**afforestation** The process of establishing a forest where one did not previously exist.

**AFO** Air fail open.

**AFOs** Animal feeding operations.

**AFPA** American Forest and Paper Association. Also called "AF&PA."

**AfterBlend** Output booster for chemical feed system by USFilter/Stranco.

**afterburner** A device used to reduce air emissions by incinerating organic matter in a gas stream.

**aftercondenser** A condenser installed as the last stage of an evaporator venting system to minimize atmospheric steam discharge.

**aftergrowth** The increase of bacterial density in treated distribution water caused by growth of bacteria released from pipewall biofilm and sediments.

**aftershock** Any seismic tremor following a main earthquake event and originating at or near the same place.

**AFX**<sup>™</sup> Ozone instrumentation products by IN USA, Inc.

**agar** A gelatinous substance extracted from a red algae, commonly used as a medium for laboratory cultivation of bacteria.

**agar plate** A circular glass plate, containing agar or another nutrient-medium, used to culture microorganisms.

**AGC** Association of General Contractors of America.

**age tank** A tank used to store a chemical solution of known concentration for feed to a chemical feeder. Also called a day tank.

**agent** Any substance, organism, or active force that produces an effect or change.

**Agent Orange** A dioxin-containing toxic herbicide used as a defoliant during the Vietnam War.

**aggressive water** Water having corrosive qualities.

**agglomerate** To gather fine particles into a larger mass.



**aggrade** To build up the level or slope of a river bed or valley by the deposit of sediment.

**AGI** Acute gastrointestinal illnesses.

**Agidisc®** Disc filter with integrated agitation system by Baker Process.

**Agisac** Sock-type screening sack by Copa Group.

**AGMA** American Gear Manufacturers Association.

**agricultural chemical** Any inorganic, artificial, or manufactured chemical substances used in agricultural processes, usually in the form of fertilizers, herbicides, and pesticides.

**agricultural pollution** Farming wastes, including runoff and leaching of pesticides and fertilizers; erosion and dust from plowing; improper disposal of animal manure and carcasses; crop residues; and debris.

**agrochemical** A substance such as a fertilizer or insecticide used in agriculture.

**agro-ecosystem** Land used for crops, pasture, and livestock; the adjacent uncultivated land that supports other vegetation and wildlife; the associated atmosphere; and the underlying soils, groundwater, and drainage networks.

**agronomy** Branch of agriculture that deals with the raising of crops and the care of the soil.

**AHERA** Asbestos Hazard Emergency Response Act.

**AhlFloat™** Dissolved air flotation by USFilter/Industrial Wastewater Systems.

**Ahlstrom Aquaflow** Former name of wastewater equipment product group acquired by USFilter/Industrial Wastewater Systems.

**AhlSurf™** Surface aerator by USFilter/Industrial Wastewater Systems.

**A-horizon** Topsoil, or the uppermost layer of soil, containing the highest accumulation of mineral and organic matter.

**AHS** See “aquatic humic substances (AHS).”

**AICHE** American Institute of Chemical Engineers.

**AIDS (Acquired Immune Deficiency Syndrome)** A usually fatal disease in which the human body can no longer defend itself against infections. AIDS is caused by the HIV retrovirus which is transmitted by the exchange of body fluids.

**AIHA** American Industrial Hygiene Association.

**air** The mixture of gases, primarily oxygen and nitrogen, that surrounds the earth and forms its atmosphere.

**air binding** (1) A condition where air enters filter media and harms both the filtration and backwash processes. (2) The obstruction of water flow in a pipeline or pump due to the entrapment of air.

**air bound** See “air binding.”

**air changes per hour (ACH)** The movement of a volume of air in a given period of time; if a building has one air change per hour, it means that all of the air in the building will be replaced in a one-hour period.

**Air Comb®** Coarse bubble diffuser by Amwell, Inc.

**air contaminant** Smoke, dust, fume, gas, odor, mist, radioactive substance vapor, pollen, or any combination thereof.

**air curtain** A vertical barrier of air bubbled upward through water to contain oil spills or discourage fish from entering polluted water.

**air diffuser** A device designed to transfer atmospheric oxygen into a liquid.

**air gap** An open vertical gap or empty space that separates drinking water supply from another water system in a treatment plant or other location to protect it from contamination by backflow or backsiphonage.

**Air Grid™** Sand filter air scour system by Roberts Filter Group.

**air lock** The condition that occurs when air accumulates in a high point of a pipeline, reducing or blocking the flow of water.

**air mass** A large body of air that has uniform properties such as temperature and humidity.

**air padding** Pumping dry air into a container to assist with the withdrawal of liquid or to force a liquified gas such as chlorine out of the container.

**air pollutant** Airborne gases, liquids, or solids that may be hazardous to animal or plant life.

**air pollution** The presence in the atmosphere of any airborne gases, liquids, or solids that may be hazardous to animal or plant life.

**air pollution episode** A period of abnormally high concentration of air pollutants, often due to low winds and temperature inversion, that can cause illness and death.

**air purifying respirator (APR)** A respirator that uses physical and/or chemical means to filter air breathed by the user.

**Air Quality Control Region** Federally designated area that is required to meet and maintain federal ambient air quality standards.

**air quality criteria** The levels of pollution and lengths of exposure above which adverse health and welfare effects may occur.

**air quality related value (AQRV)** A value referring to the reduction in visibility that may be caused by a new air emission.

**Air Quality Standards** The level of pollutants prescribed by regulations that may not be exceeded during a given time in a defined area.

**air scour** The agitation of granular filter media with air during the filter backwash cycle.

**Air Seal** Coarse bubble diffuser by Jet, Inc.

**Air Shuttle** Wastewater aeration system by Meurer Industries, Inc.

**air stripping** The process of removing volatile and semivolatile contaminants from liquid by passing air and liquid countercurrently through a packed tower.

**air toxics** Any air pollutant for which a NAAQS does not exist that may reasonably be anticipated to cause cancer, developmental effects, reproductive dysfunctions, neurological disorders, heritable gene mutations, or other serious or irreversible chronic or acute health effects in humans.

**Airamic®** Air/gas diffuser by Ferro Corp.

**AiRanger** Tank level measurement system by Milltronics, Inc.

**Airbeam™** Aluminum aeration basin cover by Enviroquip, Inc.

**Airbrush™** Rotor aerator by United Industries, Inc.

**AirCirc™** Assembly used to maintain the vortex within a wastewater degritter by Fluidyne Corp.

**Airco** Former name of BOC Gases.

**Aircushion** Flotation clarifier by Wilfley Weber, Inc.

**Aire-O<sub>2</sub>**<sup>®</sup> Propeller aspirator aerator by Aeration Industries, Inc.

**Air-Grit** Aerated grit removal system by Walker Process Equipment.

**AirJection**<sup>™</sup> Aeration system by Mazzei Injector Corp.

**AirLance**<sup>™</sup> In-vessel composting technology by CBI Walker, Inc. (licensee) and American Bio Tech, Inc. (licensor).

**airlift** A device for pumping liquid by injecting air near the bottom of a riser pipe submerged in the liquid to be pumped, lowering the specific gravity of the fluid mixture, and allowing it to rise up the riser pump.

**Airmaster** Floating aerator by Airmaster Aerator.

**AirMASTER** Wet particulate scrubber by Fen-Tech Environmental, Inc.

**Air-Mix**<sup>®</sup> Pulsed bed filter surface cleaning process by USFilter/Zimpro.

**Airmizer** Air diffuser by USFilter/Diffused Air Products Group.

**Airoflo**<sup>™</sup> Rotor aerator by S&N Airoflo, Inc.

**Air-O-Lator**<sup>®</sup> Floating aerator by Air-O-Lator Corp.

**AiroPump** Air lift pump by Walker Process Equipment.

**AirOXAL**<sup>®</sup> Pure oxygen process by Air Liquide America.

**AirRaider**<sup>™</sup> MTBE pump and treat system by Product Level Control, Inc.

**AirRide** Density controlling system for compost in-feed by the former Waste Solutions.

**Airsep** Aerated grit collector system by USFilter/Aerator Products.

**AirSep**<sup>®</sup> Pressure swing adsorption oxygen systems by AirSep Corp.

**AirTainer**<sup>™</sup> Tank cover by NuTech Environmental Corp.

**air-to-cloth ratio** Bag house application criteria which is the ratio of the air flow line to net cloth area.

**air-to-water ratio** Air stripping application criteria indicating the volume of air required per volume of water to remove volatile contaminants.

**Airvac**<sup>®</sup> Vacuum sewage collection system by Airvac, Inc.

**AISC** American Institute of Steel Construction.

**AISI** American Iron and Steel Institute.

**AIWPS** Advanced Integrated Wastewater Pond System.

**Akta Klor** Sodium chlorite solution by Vulcan Performance Chemicals.

**Aktivox** Selective oxidant with specificity for sulfides by Vulcan Performance Chemicals.

**AL** Acceptable level.

**alabaster** A compact, fine-grained gypsum material.

**alachlor** A herbicide used mainly to control weeds in corn and soybean fields and marketed under the trade name Lasso.

**ALAPCO** Association of Local Air Pollution Control Officers.

**Alar** Trade name for a pesticide used primarily to make apples redder, firmer, and less likely to fall off trees prematurely.

**ALARA** As low as reasonably achievable.

**Albrivap** High temperature additive for evaporators by Albright & Wilson Americas.

**Alcofix**<sup>®</sup> Inorganic coagulant by Ciba Specialty Chemicals.

**alcohol** A class of compounds containing the hydroxyl group OH.

**aldehyde** A class of organic compounds produced by the oxidation of alcohols containing a CHO group including formaldehyde and acetaldehyde.

**aldicarb** An insecticide made from ethyl isocyanate and sold under the trade name Temik.

**aldrin** An insecticide and suspected carcinogen which has been banned for agricultural use by the U.S. Environmental Protection Agency (EPA).

**alga** The singular form of “algae.”

**algae** Primitive, free-floating, plant-like aquatic organisms whose biological activity affect the pH and dissolved oxygen content in a water body.

**Algae Sweep Automation** Automated clarifier algae sweep system by Ford Hall Co., Inc.

**AlgaeMonitor** On-line fluorometer to monitor relative algae levels in a water system by Turner Designs.

**algal bloom** A rapidly reproducing floating colony of algae that may cover a stream, lake, or reservoir, creating a nuisance condition.

**AlgaSORB®** Ion exchange medium for heavy metal removal by Bio-Recovery Systems, Inc.

**algicide** Any substance used to kill algae. Also “algaecide.”

**aliphatic compounds** Organic compounds with carbon atoms arranged in a straight or branched chain, rather than a ring.

**aliquot** The amount of a sample used for analysis.

**Alizair®** Fixed growth biotreat system for removal of odorous compounds from wastewater by USFilter/Krüger and OTV.

**alkali** A substance with highly basic properties.

**alkali metals** The elements lithium, sodium, potassium, rubidium, and cesium.

**alkaline** Water containing sufficient amounts of alkalinity to raise the pH above 7.0.

**alkaline soil** Soil with a pH greater than 7.0.

**alkalinity** The ability of a water to neutralize an acid due to the presence of carbonate, bicarbonate, and hydroxide ions.

**Alkalinity First™** Sodium bicarbonate by Church & Dwight Co. Inc.

**alkaloid** Any of a group of organic compounds containing nitrogen and having alkaline properties including caffeine, cocaine, morphine, nicotine, and strychnine.

**alkalosis** Abnormal condition in the body resulting from an excess alkalinity and an increased blood and tissue pH, often caused by exposure to low-oxygen air found at high altitudes.

**Alka-Pro®** Process control system for biological wastewater treatment systems by USFilter/Davco.

**All Climate™** Field-erected package wastewater plant by USFilter/Davco.

**allergen** A substance inducing an allergic state or reaction.

**allergy** A hypersensitivity to a particular substance such as food, pollen, or dust that causes the immune system to overreact to the substance.

**Allied Colloids** Former name of Ciba Specialty Chemicals.

**Allis-Chalmers** Former name of A-C Compressor Corp.

**Allison** Internally fed rotating drum screen by KRC (Hewitt) Inc.

**allotropy** The ability of an element to exist naturally in different forms in the same solid, liquid, or gaseous state.

**alluvial soil** Soil formed of material that was carried by flowing water before being deposited.

**alpha factor** The ratio of oxygen transfer coefficients for water and wastewater at the same temperature and pressure; used in the sizing of aeration equipment.

**alpha particle** A positively charged atomic particle composed of two neutrons and two protons released by some atoms undergoing radioactive decay.

**alpha radiation** A stream of positively charged particles released from radioactive isotopes.

**alpha ray** A stream of particles emitting from the nucleus of a helium atom undergoing disintegration.

**alpine tundra** An ecosystem found at high altitudes, above the timberline, characterized by mosses, lichens, and low-growing herbaceous plants.

**ALR** Action leakage rate.

**alternative energy** Energy obtained from sources other than traditional fossil fuels or nuclear energy, and which are usually renewable and nonpolluting. Alternative energy sources include solar energy, wave power, wind power, geothermal power, and biomass fuels.

**alum** Common name for aluminum sulfate, frequently used as a coagulant in water and wastewater treatment. Chemical formula is  $\text{Al}_2(\text{SO}_4)_3$ .

**alum sludge** Sludge resulting from treatment process where alum is used as a coagulant.

**Alumadome** Self supporting aluminum covers for circular tanks by Conservatek Industries, Inc.

**Alumavault** Self supporting aluminum covers for rectangular tanks by Conservatek Industries, Inc.

**alumina** A form of aluminum oxide, also called “corundum” or “emery.” Chemical formula is  $\text{Al}_2\text{O}_3$ .

**aluminum** A lightweight, nonferrous metal with good corrosion resistance and electrical and thermal conductivity. Chemical symbol is Al.

**aluminum chlorohydrate (ACH)** Water treatment coagulant.

**aluminum sulfate** See “alum.”

**AlumStor** Modular liquid storage tank and feed system by ModuTank, Inc.

**Alundum** Porous diffuser dome by Sanitaire Corp.

**Alusil 70™** Custom-activated zeolites by Selecto, Inc.

**amalgam** An alloy of mercury with one or more other metals. Silver amalgam is used as a dental filling.

**Amazon™** Pulse jet baghouse filter bags by W.L. Gore & Associates, Inc.

**Amberjet®** Ion exchange resins by Rohm & Haas, Co.

**Amberlite®** Ion exchange resins by Rohm & Haas, Co.

**Amberpack™** Ion exchange resins by Rohm & Haas, Co.

**Ambersomb®** Carbonaceous adsorbent for VOC removal by Rohm & Haas Co.

**ambient air quality** A general term used to describe the condition of the outdoor air.

**amendment** Organic material or bulking agent such as wood chips or sawdust added to municipal solids in a composting operation to promote uniform air flow.

**Amerfloc®** Polyelectrolyte used to enhance liquid/solid separation by Ashland Chemical, Drew Industrial.

**America Norit** Former name of Norit Americas Inc.

**American Well Works** Former name of Amwell Inc.

**Ameroid** Polyelectrolyte used to enhance liquid/solid separation by Ashland Chemical, Drew Division.

**Amersep®** Coagulants and metal precipitants used in water and wastewater treatment by Ashland Chemical, Drew Industrial.

**amines** A group of compounds that are derivatives of ammonia with a hydrocarbon group replacing one or more of the hydrogen atoms.

**amino acid** A group of organic acids containing an amino group (NH<sub>2</sub>) and a carboxyl group (COOH) that link together to form the proteins necessary for all life.

**Aminodan™ Process** Process water treatment and recovery process by Biothane Corp.

**AmmonAsorb™** Activated carbon product by Waterlink/Barnebey Sutcliffe.

**ammonia** A compound of hydrogen and nitrogen that occurs extensively in nature. Chemical formula is NH<sub>3</sub>.

**ammonia nitrogen** The quantity of elemental nitrogen present in the form of ammonia and the ammonium ion.

**ammoniator** A device used to feed gaseous ammonia.

**ammonification** Bacterial decomposition of organic nitrogen to ammonia.

**ammonium ion** A form of ammonia found in solution, the ion NH<sub>4</sub><sup>+</sup>.

**ammonium nitrate** A crystalline salt used as a source of nitrogen in the manufacture of some fertilizers and explosives. Chemical formula is NH<sub>4</sub>NO<sub>3</sub>.

**amoeba** A single-celled protozoan microbe. Also spelled “ameba.”

**amoebiasis** See “amoebic dysentery.” Also spelled “amebiases.”

**amoebic dysentery** A form of dysentery caused by a protozoan parasite, usually resulting from poor sanitary conditions and transmitted by contaminated food or water. Also spelled “amebic dysentery.”

**amoebicide** Any substance used to kill amoebas, either medicinally for treatment of amoebic dysentery or to sterilize water. Also spelled “amebicide.”

**amorphous** Non-crystalline, having no definite shape or form.

**AMOS** Air Management Oversight System.

**amperometric titrator** Titration device containing an internal indicator or electrometric device to show when the reactions are complete.

**amphibian** (1) A member of the Amphibia class of cold blooded, scaleless vertebrates which includes frogs and salamanders. (2) A plant or animal that can live both on land or in water.

**Amphidrome™** Fixed-film sequencing batch biological filter by Tetra Process Technologies.

**Ampho-Mag™** Magnesia compound to absorb and buffer chemical spills by Premier Chemicals.

**amphoterics** Capable of reacting in water either as a weak acid or weak base.

**AMSA** Association of Metropolitan Sewer(age) Agencies.

**anabatic wind** A localized wind that flows up valley or mountainous slopes, usually in the afternoon, caused by the replacement of cool valley air with the warmer, heated air above it.

**anabiosis** A temporary state of suspended animation undergone by some aquatic organisms to survive periods of drought.

**anabolism** The process in a plant or animal in which food is metabolized into complex compounds such as protein and living tissue.

**anaerobe** An organism that can thrive in the absence of free oxygen.

**anaerobic** Condition characterized by the absence of free oxygen.

**anaerobic digestion** Sludge stabilization process where the organic material in biological sludges are converted to methane and carbon dioxide in an airtight reactor.

**Anaerobic Selector Process** Biological system for phosphorus and BOD removal by USFilter/Davco.

**Analite** Portable turbidimeters by Advanced Polymer Systems.

**analyte** The chemical for which a sample is analyzed.

**ANC** See "acid neutralizing capacity (ANC)."

**An-CAT<sup>®</sup>** Polymer processing control unit by Norchem Industries.

**ancillary equipment** Devices such as piping, flanges, valves, and pumps which are used in conjunction with treatment process or system.

**Anco** Batch mixers by Enviropax, Inc.

**anemometer** An instrument used to measure the force or velocity of wind.

**aneroid barometer** An instrument used to measure atmospheric pressure which operates on the movement of a thin metal plate rather than the rise and fall of mercury.

**angle of repose** The maximum angle the inclined surface of a loosely divided material can make with the horizontal.

**Angstrom (Å)** A unit of measure equivalent to one ten-thousandth of a micron.

**anhydride** A chemical compound derived by the elimination of water.

**anhydrite** See "calcium sulfate."

**anhydrous** A compound or substance that does not contain water.

**animal unit (AU)** A unit for establishing grazing pressures from different kinds of grazing animals which consume similar kinds of forage, where 1AU is equivalent to the weight of 1 cow and 1 calf set at 454 kg.

**anion** A negatively charged ion that migrates to the anode when an electrical potential is applied to a solution.

**anion exchange** An ion exchange process in which anions in solution are exchanged for other anions bound to an ion exchange resin or medium.

**anionic polymer** A polyelectrolyte with a net negative electrical charge.

**Anitron** Biological fluidized bed wastewater treatment system by USFilter/Krüger.

**ANM<sup>™</sup>** Nanofiltration softening membrane by TriSep Corp.

**annelid** A wormlike organism, including earthworms and leeches, which have long, segmented bodies.

**Annubar<sup>®</sup>** Mass flow monitoring system by Dieterich Standard.

**anode** The positive electrode where current leaves an electrolytic solution.

**anodic protection** Electrochemical corrosion protection achieved through the use of an anode having a higher electrode potential than the metal to be protected.

**anoxia** A condition in which the blood oxygen level is less than normal.

**anoxic** Condition characterized by the absence of free oxygen.

**ANOX-R** Advanced treatment industrial wastewater treatment system by USFilter/Davco.

**ANPRM** Advance Notice for Public Rulemaking. An EPA program for holding public forums for potential changes to the federal Water Quality Standard regulations.

**ANSI** American National Standards Institute.

**antagonism** Interference or inhibition of the effect of one chemical by the action of another.

**antarctic** Characteristic of the region, climate, or vegetation south of the Antarctic Circle.

**Antarctic Circle** An imaginary circle parallel to the equator at latitude 66°34' south.

**Anthozoa** A class of saltwater polyps including corals and sea anemones.

**anthracite** A hard, black coal containing a high percentage of fixed carbon, a low percentage of volatile matter, and burns with little or no smoke.

**anthracosis** A lung disease more commonly known as "black lung disease."

**Anthrafil®** Filter anthracite by Unifilt Corp.

**anthropodust** Fugitive dust generated from human activities.

**anthropogenic climate change** Human-induced global warming caused primarily by carbon dioxide, methane, and nitrous oxide emissions from engine exhausts, as well as respiration of humans and animals.

**anthropogenic compounds** Compounds created by human beings, often relatively resistant to biodegradation.

**antichlors** Reagents such as sulfur dioxide, sodium bisulfite, and sodium thiosulfate which can be used to remove excess chlorine residuals from water by conversion to an inert salt.

**anti-degradation clause** See "prevention of significant deterioration (PSD)."

**antifoam agent** A surface active agent used to reduce or prevent foaming.

**antifoulant** An additive or dispersant that prevents fouling and/or the formation of scale.

**antigen** A substance capable of stimulating an immune response.

**antiknock additive** A compound, usually tetraethyl lead, added to gasoline to minimize engine pre-ignition and its' accompanying knocking or pinging. Pollution from the release of these compounds in auto emissions led to the introduction of unleaded gasoline.

**antioxidant** A substance that slows down or prevents oxidation of another substance.

**antiscaant** An additive that prevents the formation of inorganic scale.

**Any Credible Evidence rule (ACE rule)** Another name for EPA Clean Air Act "Credible Evidence rule."

**AOB** Ammonia-oxidizing bacteria.

**AOC** See "assimilable organic carbon (AOC)."



**AOPs** See “advanced oxidation processes (AOP).”

**AOT** Advanced oxidation technologies.

**AOX** See “adsorbable organic halides (AOX).”

**APCA** Air Pollution Control Association.

**APER** Air pollution emissions report.

**APF** See “assigned protective factor (APF).”

**APHA** American Public Health Association.

**API** American Petroleum Institute.

**API gravity** An index inversely related to specific gravity used to identify liquid hydrocarbons.

**API separator** Rectangular basin in which wastewater flows horizontally while free oil rises and is skimmed from the surface.

**APOVAC®** Anti-pollution vacuum system for solvent recovery by Rosenmund, Inc.

**apparent color** The color in water caused by the presence of suspended solids.

**approach velocity** The average water velocity of fluid in a channel upstream of a screen or other obstruction.

**APR** See “air purifying respirator (APR).”

**APTI** Air Pollution Training Institute.

**APWA** American Public Works Association.

**AQCCT** Air-quality criteria and control techniques.

**AQCP** Air Quality Control Program.

**AQCR** Air Quality Control Region.

**AQRV** See “air quality related value (AQRV).”

**AQTX** Aquatic toxicity.

**Aqua Bear** Medium density foam pipeline cleaners by Girard Industries, Inc.

**Aqua Criss Cross** Medium density coated foam pipeline cleaners by Girard Industries, Inc.

**Aqua Guard®** Self cleaning bar screen by Parkson Corp.

**Aqua Pigs™** Polyurethane foam pipeline cleaners by Girard Industries, Inc.

**Aqua Swab** Soft polyurethane pipeline cleaners by Girard Industries, Inc.

**Aqua UV™** Ultraviolet water disinfection systems by Trojan Technologies, Inc.

**Aqua-4™** Surface water treatment plant by Smith & Loveless, Inc.

**AquaABF™** Traveling bridge type automatic backwash package filter by Aqua-Aerobic Systems, Inc.

**Aquabelt®** Gravity belt thickener by Ashbrook Corp. (U.S.) Simon-Hartley, Ltd. (U.K.).

**AquaCalc** Open channel flow computer by JBS Instruments.

**AquaCAM-D** Aerator/mixer/decanter for use in sequencing batch reactor by Aqua-Aerobic Systems, Inc.

**Aqua-Carb** Activated carbon by USFilter/Westates.

**Aqua-Cat®** Sulfide conversion process to control odors by USFilter/Gas Technologies.

**Aqua-Cell™** Package water treatment plant by WesTech Engineering Inc.

**Aquaclaire™** Wastewater treatment systems by DAS International, Inc.

**Aquacode** Membrane vessels by Spaulding Composites Co.

**aquaculture** The managed production of fish or shellfish in a pond or lagoon.

**AquaDDM<sup>®</sup>** Direct drive mixers by Aqua-Aerobics Systems, Inc.

**AquaDecant<sup>®</sup>** Floating decanter by AquaTurbo Systems.

**Aquadene<sup>™</sup>** Corrosion and scale control products by Stiles-Kem Division, Met Pro Corp.

**AquaDisk<sup>™</sup>** Woven cloth tertiary filter by Aqua-Aerobic Systems, Inc.

**Aquafeed<sup>®</sup>** Reverse osmosis antiscalants by B.F. Goodrich Co.

**Aqua-Fer<sup>™</sup>** Well water treatment plant designed for iron removal by Smith & Loveless, Inc.

**Aqua-Fix<sup>™</sup>** Dissolved ionic contaminant removal system by ATA Technologies Corp.

**Aquaflow** Former name of product group acquired by USFilter/Industrial Wastewater Systems.

**Aqua-Jet<sup>®</sup>** Direct drive aerators by Aqua-Aerobics Systems, Inc.

**Aqua-Lator<sup>®</sup>** High speed floating aerator by USFilter/Aerator Products.

**AquaLift<sup>®</sup>** Screw pump by Parkson Corp.

**Aquamag<sup>®</sup>** Magnesium hydroxide by Premier Chemicals.

**AquaMax<sup>™</sup>** Desalination evaporator antiscalant by BetzDearborn, Inc.

**Aquamite<sup>®</sup>** Electrodialysis water treatment systems by Ionics, Inc.

**AquaMJA<sup>™</sup>** Manifold jet aerator by Aqua-Aerobic Systems, Inc.

**Aquaport<sup>®</sup>** Seawater desalination system by Ambient Technologies, Inc.

**Aquaray<sup>®</sup>** Ultraviolet disinfection system by Infilco Degremont, Inc.

**Aquaritrol<sup>®</sup>** Coagulant control system using a programmable controller by USFilter/Microfloc.

**Aquarius<sup>®</sup>** Modular water treatment plant by USFilter/Microfloc.

**AquaSBR<sup>®</sup>** Sequencing batch reactor by Aqua-Aerobics Systems, Inc.

**Aquascan** On-line VOC monitor by Sentex Systems, Inc.

**Aqua-Scrub<sup>™</sup>** Powdered activated carbon adsorption system by USFilter/Westates.

**AquaSEAL<sup>™</sup>** Sequencing extended aeration lagoon system by Aqua-Aerobics Systems, Inc.

**Aqua-Sensor** Control system for water softener regeneration by Culligan International Corp.

**Aquashade<sup>®</sup>** Aquatic plant growth control by Applied Biochemists, Inc.

**Aqua-Shear** Mixer by Flow Process Technologies, Inc.

**Aquasorb<sup>®</sup>** Carbon adsorption treatment systems by Hadley Industries.

**Aquasource<sup>®</sup>** Membrane system by Infilco Degremont, Inc.

**Aquaspir<sup>®</sup>** Shaftless dewatering screw by Andritz-Ruthner, Inc.

**Aquastore<sup>®</sup>** Storage tanks by A.O. Smith Engineered Storage Products.

**Aquatair** Packaged biological wastewater treatment plant by BCA Industrial Controls, Ltd.

**Aquatec<sup>®</sup>** Solid media contact filter vessels by Colloid Environmental Technologies Co.

**Aquatech Systems** Former name of Aqualytics, Inc.

**aquatic humic substances (AHS)** Humic substances in true solution that exhibit colloidal properties.

**Aquatreat<sup>™</sup>** Sequencing batch reactor by EnviroSystems Supply.

**Aqua-Trim™** Tray-type air stripper by Delta Cooling Towers, Inc.

**AquaTurbo®** Surface aerator and mixer products by AquaTurbo Systems.

**Aquavap** Vapor compression type evaporator by Licon, Inc.

**Aqua-View** Particle measuring system by Particle Measuring Systems, Inc.

**Aquaward®** Tablet feeder disinfection system by Exceltec International Corp.

**Aquazur V®** Rapid sand gravity filter by Infilco Degremont, Inc.

**aqueduct** A conduit for carrying running water.

**aqueous** Something made up of, similar to, or containing water.

**aqueous chlorine** Term used to describe chlorine or chlorine compounds dissolved in water, often mistakenly called “liquid chlorine.”

**aqueous solution** A solution in which water is the solvent.

**aquiclude** A low-permeability underground rock formation that absorbs water slowly but will not allow its free passage.

**aquifer** A subsurface geological formation containing a large quantity of water.

**aquifuge** An underground layer of impermeable rock that will not allow the free passage of groundwater.

**Aquilair®** Oxidation process for removal of VOC compounds from wastewater by USFilter/Krüger (North America) and OTV.

**AQuit™** Sulfide control product by USFilter/Davis Process.

**Aquox™** Potassium permanganate by Nalon Chemical, distributed by American International Chemical, Inc.

**arable** Land capable of being farmed.

**ARAR** Applicable or relevant and appropriate requirements. Cleanup standards, control standards and other substantive environmental protection requirements, criteria, and limitations promulgated under federal, state, and local laws.

**Arc Screen™** Self cleaning curved bar screen by Infilco Degremont, Inc.

**ARCC** American Rivers Conservation Council.

**Archimedes’ principle** The principle of buoyancy which states that the force on a submerged body acts vertically upward through the center of gravity of the displaced fluid and is equal to the weight of the fluid displaced.

**Archimedes’ screw pump** See “screw pump.”

**archipelago** A group or chain of many islands.

**arctic** Characteristic of the region, climate, or vegetation north of the Arctic Circle.

**Arctic Circle** An imaginary circle parallel to the equator at latitude 66°34’ north.

**Arcticaer** High speed surface aerator with submersible motor by USFilter/Aerator Products.

**area source** Any small source of non-natural air pollution that is released over a relatively small area but which cannot be classified as a point source, including vehicles and other small engines, small businesses and household activities.

**Argo Scientific** Former name of BetzDearborn-Argo District.

**ARI** Sulfur recovery and odor control product line by USFilter/Gas Technologies.

**ARI** See “average rainfall intensity (ARI).”

**Aria™** Water treatment system by Pall Corp.

**Aries™** Filtration air scour technology by Roberts Filter Group.

**arithmetic mean** The sum of a set of observations divided by the number of observations.

**Arm & Hammer®** Sodium bicarbonate by Church & Dwight Co. Inc.

**Armco** Former sluice gate manufacturer acquired by Hydro Gate Corp.

**Arna®** Ultraviolet disinfection system by Arlat, Inc.

**aromatics** A group of hydrocarbon compounds, including benzene, containing a closed ring structure.

**array** (1) A staged arrangement of membrane elements in a system. (2) A group of solar collection devices arranged in a suitable pattern to efficiently collect solar energy.

**Arro-Care®** Reverse osmosis maintenance and support services by USFilter/Rockford.

**Arro-Cleaning®** Membrane care services by USFilter/Rockford.

**Arrowhead®** Water treatment product line by USFilter/Rockford.

**arroyo** A stream or watercourse that is often dry.

**ARST™** Air regulated siphon by John Meunier, Inc.

**arsenic** A naturally occurring element that is toxic to humans at very low levels. Chemical formula is As.

**arsenicals** Pesticides containing arsenic.

**Artco** Applied Regenerative Technologies Co.

**artesian water** Bottled water from a well that taps a confined aquifer which is located above the normal water table.

**artesian well** A well with sufficient pressure to produce water without pumping.

**arthropod** Any of the largest phylum of invertebrate animals including insects and crustaceans having segmented bodies, exoskeletons, and jointed legs occurring in pairs.

**Arus Andritz** Former name of Andritz-Ruthner, Inc.

**ASA** Algae sweep automation system by Ford Hall Co., Inc.

**ASB** Aerated stabilization basin.

**asbestos** A mineral fiber, positively identified as a carcinogen, that does not conduct heat or electricity and formerly in wide use in the building industry for thermal insulation, soundproofing, roofing, and electrical insulation.

**asbestos cement pipe** Pipe manufactured of a mixture of asbestos fiber and Portland cement.

**asbestos-containing material** Construction materials that contain more than one percent asbestos.

**asbestos-containing waste materials (ACWM)** Mill tailings or any waste that contains commercial asbestos and is generated by a source covered by the Clean Air Act Asbestos NESHAPS.

**asbestosis** A chronic lung disease caused by exposure or inhalation of asbestos fibers.

**as-built drawings** The original plans and specifications prepared for construction and corrected to reflect how a facility was actually built or installed.

**A-scale sound level (dBA)** A modification of the decibel scale that approximates the sensitivity of the human ear used to note the intensity or annoyance of noise pollution.

**ASCE** American Society of Civil Engineers.

**Asdor** Former name of USFilter/Asdor.

**ASDWA** Association of State Drinking Water Administrators.

**aseptic** The state of being free of pathogenic organisms.

**ash** The nonvolatile inorganic solids that remain after incineration.

**Ashaire** Aerator product line by USFilter/Aerator Products.

**Ashbrook-Simon-Hartley** Former name of Ashbrook Corp.

**Ashfix™** A process to stabilize heavy metals in sludge and ash by Ashland Chemical, Drew Industrial.

**ASHRAE** American Society of Heating, Refrigeration, and Air Conditioning Engineers.

**Asiatic clam** A fresh water clam originally found in Southeast Asia and introduced in the U.S. in 1938.

**ASME** American Society of Mechanical Engineers.

**Aspergillus fumigatus** Airborne fungi that may result from composting operations which may cause human ear, lung, and sinus infections.

**asphalt-rubber** A mixture of ground rubber and bituminous concrete used as a pavement interlayer to reduce stress and prevent cracking.

**asphyxiant** A vapor or gas such as carbon monoxide that can cause unconsciousness or death by suffocation.

**Aspi-Jet™** Aspirating aerator by Aqua-Aerobic Systems, Inc.

**aspirating aerator** Aeration device using a motor driven propeller to draw atmospheric air into the turbulence caused by the propeller to cause the formation of small bubbles.

**aspirator** A hydraulic device that creates a negative pressure by forcing liquid through a restriction and increasing the velocity head.

**ASQC** American Society for Quality Control.

**ASR** See “atmosphere supplying respirator (ASR).”

**assay** A test for a particular chemical or effect.

**assigned protective factor (APF)** Respirator designation indicating how much contaminant will be reduced with proper respiratory fit and wear. An APF of 5 indicates that if a cubic meter of air contains 10 mg of contaminant, the effective exposure would be 10/5 or 2 mg/cu m.

**assimilable organic carbon (AOC)** The portion of dissolved organic carbon that is easily used by microbes as a carbon source.

**assimilation** The ability of a body of water to purify itself of pollutants.

**assimilative capacity** The ability of a water body to receive wastewater and toxic materials without deleterious effects on aquatic life or the humans who consume the water.

**AST** Aboveground storage tanks.

**ASTM** American Society for Testing and Materials.

**Astrasand®** Continuously cleaned sand filter by Astraco Water Engineering.

**Astraseparator®** Inclined plate settler by Astraco Water Engineering.

**asymmetric membrane** Membranes that are not reversible and can only desalinate efficiently in one direction.

**Asymmetrix™** Membrane cartridge filter by USFilter/Filtration & Separation.

**AT®** Ozone generator by Ozonia North America.

**ATAD** See “autothermal thermophilic aerobic digestion (ATAD).”

**Atara** Former manufacturer of digester gas mixing equipment whose product line was acquired by Infilco Degremont, Inc.

**ATD™** Autotherm aerobic sludge digestion system by CBI Walker, Inc.

**Athos** Wet air oxidation process by USFilter/Krüger (North America) and OTV.

**ATI** Analytical Technology, Inc.

**ATL®** Aero Tec Laboratories, Inc.

**Atlantes Chemical Systems** Former name of Hoffland Environmental, Inc.

**ATLAS™** Advanced technology lagoon aeration system by Environmental Dynamics Inc.

**atm** See “atmosphere.”

**atmometer** An instrument used to measure the evaporative capacity of the air.

**atmosphere** (1) The gaseous region that surrounds the earth. (2) A unit of pressure equal to 1.0333 kg/sq cm or 14.7 psi. Abbreviated “atm.”

**atmosphere supplying respirator (ASR)** A respirator which supplies air or oxygen to the user.

**atmospheric corrosion** Corrosion resulting from exposure to the atmosphere.

**atmospheric pressure** The force exerted by the weight of the atmosphere above the point of measurement. At sea level, this pressure equals 101.3 kPa (14.7 psi), 760 mm (29.9 inches) of mercury column, or 10.3 m (33.9 feet) of water column.

**Atochem** Former name of Elf Atochem North America, Inc.

**atoll** A circular reef enclosing a shallow lagoon.

**atom** The smallest unit of an element that retains the characteristics of that element.

**Atomerator®** Pressure aerator for iron oxidation by USFilter/General Filter.

**atomic absorption spectrophotometry (AA)** A highly sensitive instrumental technique for measuring trace quantities of elements in water.

**atomize** To divide a liquid into extremely fine particles.

**atomizer** An instrument through which a liquid is sprayed to produce a fine mist.

**ATP** (1) Average transmembrane pressure. (2) See “adenosine triphosphate (ATP).” (3) See “advanced treatment plant (ATP).”

**ATP™** Aerobic thermophilic process sludge treatment system by CBI Walker, Inc.

**ATS™** Sorbent media product line by Engelhard Corp.

**ATSDR** Agency for Toxic Substances and Disease Registry.

**attached growth process** See “fixed film process.”

**attainment area** A geographic area in which the levels of a criteria air pollutant meet the health-based National Ambient Air Quality Standard for that pollutant.

**attenuation** The process by which a compound is reduced in concentration over time, through absorption, adsorption, degradation, dilution, and/or transformation.

**attractant** A chemical or agent that lures insects or other pests by stimulating their sense of smell.

**AU** See “animal unit (AU).”

**Auger Monster®** Modular screen/grinder/solids removal unit for wastewater headworks system by JWC Environmental.

**Aurora UV™** Ultraviolet disinfection system by Calgon Carbon Corp.

**Austgen-Biojet** Former name of ABJ product group of Sanitaire Corp.

**Auto5™** Stack sampling system by Andersen Instruments, Inc.

**AutoBelt** Rotary vacuum filter formerly offered by Walker Process Equipment.

**autochthonous** A rock formation, organic matter, or substance that is produced or originates in the place where it is found.

**autoclave** A device that sterilizes materials by exposure to pressurized steam.

**Auto-Clean** Dissolved oxygen sensor by Analytical Technology, Inc.

**Auto-Cleanse** Self-cleaning pump station with differential pressure activated flush valve by ITT Flygt Corp.

**Autocon** Product group integrated within USFilter/Control Systems.

**Auto-Dox** Controlled aeration weir by Purestream, Inc.

**autogenous combustion** Burning that occurs when the heat of combustion of a wet organic material or sludge is sufficient to vaporize the water and maintain combustion without auxiliary fuel.

**autogenous temperature** Equilibrium temperature in sludge combustion where the heat input from the fuel equals the heat losses, and combustion is self-supporting.

**autoignition temperature** The minimum temperature at which a substance ignites without application of a flame or spark.

**Auto-Jet<sup>®</sup>** Pressure leaf filter by USFilter/Whittier.

**Autojust** Automatic feedwell gate controller for circular sludge collectors by USFilter/Aerator Products.

**automatic sampling** Collecting samples of prescribed volume over a defined time period by an apparatus designed to operate remotely without direct manual control.

**auto-oxidation** A self-induced oxidation process.

**Autopress** High throughput automatic filter press by USFilter/Dewatering Systems.

**Auto-Pulse<sup>™</sup>** Tubular backpulse filter by USFilter/Whittier.

**Auto-Rake<sup>®</sup>** Reciprocating rake bar screen by Franklin Miller, Inc.

**autoreactive** A compound that is reactive under normal conditions and does not require heat, additional compounds, or a change in conditions.

**Auto-Retreat** Automatic bar screen control system by Infilco Degremont, Inc.

**AutoSDI<sup>™</sup>** Portable, computer-based silt density index instrument by King Lee Technologies.

**Auto-Shell<sup>™</sup>** Granular media filter by USFilter/Whittier.

**Auto-Shok<sup>™</sup>** Tube-type vertical pressure leaf filter by USFilter/Whittier.

**Auto-Skimmer<sup>™</sup>** Skimmer used to remove floating hydrocarbons from water wells by Science Application International Corp.

**AutoTherm<sup>™</sup>** Aerobic thermophilic digestion system by CBI Walker, Inc.

**autothermal thermophilic aerobic digestion (ATAD)** A biological digestion system that converts soluble organics to lower-energy forms through anaerobic, fermentative, and aerobic processes at thermophilic temperatures.

**autothermic combustion** See “autogenous combustion.”

**Autotrail** Traveling bridge sludge collectors by Simon-Hartley, Ltd.

**Autotrol** Rotating biological contactors product line by USFilter/Envirex.

**autotroph** Organism that derives its cell carbon from carbon dioxide.

**Auto-Vac<sup>®</sup>** Rotary drum filter by Alar Engineering Corp.

**autoxidation** A spontaneous process in which a compound is oxidized, usually in the presence of oxygen, but other compounds can act as electron acceptors.

**available chlorine** A measure of the amount of chlorine available in chlorinated lime, hypochlorite compounds, and other materials used as a source of chlorine when compared with that of liquid or gaseous chlorine.

**average daily flow (ADF)** The total flow past a point over a period of time divided by the number of days in that period.

**average flow** The arithmetic average of flows measured at a given point.

**average rainfall intensity (ARI)** A measurement of rainfall per unit of time.

**Avery Filter** Recessed chamber filter press by Komline-Sanderson, Engineering Corp.

**AVGF®** Automatic valveless gravity filter by USFilter/Warren.

**AWI** Anthratech Western, Inc.

**AWS** American Welding Society.

**AWT** See “advanced wastewater treatment (AWT).”

**AWWA** American Water Works Association.

**AWWARF** American Water Works Association Research Foundation.

**axial flow** The flow of fluid in the same direction as the axis of symmetry of a tank or basin.

**axial flow pump** A type of centrifugal pump in which fluid flow remains parallel to the flow path and develops most of its head by the lifting action of the vanes.

**Azenit** Biological wastewater treatment process technology by USFilter/Krüger (North America) and OTV.

**azeotropic** A liquid of two or more substances that behaves like a single substance in that the vapor produced by partial evaporation has the same composition as the liquid.

**Aztec®** Chlorine/oxidant residual analyzer by Capital Controls Co.

## B

**B-10 life** The rated life defining the number of revolutions that 90% of a group of identical bearings will complete before first evidence of failure develops. Also known as “L-10 life.”

**B2A™** Multi-media biological filter by USFilter/Krüger (North America) and OTV.

**Babcock Water Engineering** Former name of CASS Water Engineering, Inc.

**BAC** Biologically active carbon.

**bacilli** Rod-shaped bacteria.

**back pressure** Pressure due to a force operating in a direction opposite to that required.

**backfill** The material used to refill a ditch or excavation, or the process of refilling.

**backflow** Flow reversal in a water distribution system that may result in contamination due to a cross connection.

**backflow prevention device** Device used to prevent cross connection, or backflow of nonpotable water into potable water system.



**background concentration** The general level of air pollutants in a region with all local sources of pollution ignored.

**background contamination** Contamination introduced accidentally into dilution waters, reagents, rinse water, or solvents which can be confused with constituents in the sample being analyzed.

**background level** The concentration of pollutants in a definite area during a fixed period of time prior to starting up a source of emission under control.

**background organic matter (BOM)** Natural organic matter in a mixture with one or more specific organic chemicals.

**background radiation** Nuclear radiation arising from within the human body and normal surroundings.

**background soil pH** The pH of the soil prior to the addition of substances that alter the hydrogen ion concentration.

**backsiphonage** A backflow of water of questionable quality that results from a negative pressure within water distribution system.

**backwash** A high-rate reversal of flow for the purpose of cleaning or removing solids from a filter bed or screening medium.

**backwash rate** The flow rate used during filter backwash when the direction of flow through the filter is reversed for cleaning.

**BACM** Best available control measures.

**BACT** Best available control technology.

**bacteria** Microbes that decompose and stabilize organic matter in wastewater.

**BADT** Best available demonstrated technology.

**BAF** (1) See “biologically active filter.” (2) Biologically activated foam.

**baffle** An obstructing device or plate used to provide even distribution or to prevent short-circuiting or vortexing of flow entering a tank or vessel.

**baffle chamber** In incinerator design, a chamber designed to promote the settling of fly ash and coarse particulate matter by changing the direction and/or reducing the velocity of the gases produced by the combustion of the refuse or sludge.

**Baffleflow** Oil removal tank with permeable baffles to prevent short circuiting by Walker Process Equipment.

**bagasse** The fibrous residue from crushed sugar cane or sugar beet after the extraction of sugar juice.

**baghouse** An air emissions control device that uses a fabric or glass fiber filter to remove airborne particulates from a gas stream.

**bailer** A long pipe with a check valve at the lower end used to remove a slurry or oil from the bottom or side of a well.

**Bakflo** Barge mounted oil skimmer by Vikoma International Ltd.

**balefill** A land disposal site where solid waste material is compacted and baled prior to disposal.

**baler** A machine used to compress and bind solid recyclable materials such as cardboard or paper.

**ball valve** A valve utilizing a rotating ball with a hole through it that allows straight-through flow in the open position.

**ballast water** Water used in a ship's hold for stabilization often requiring treatment as an oily wastewater.

**Ballasted Floc Reactor™ (BFR)** Reactor-clarifier system by USFilter/General Filter.

**ballistic separator** A machine that sorts organic from inorganic matter for composting.

**Bamag** Former name of Lurgi Bamag GmbH.

**banana-blade mixer** High flow, low-shear mixer with rotating back-swept propeller.

**band application** The spreading of pesticides, fertilizer, or other chemicals over, or next to, each row of plants in a field.

**Bandit™** Raking machine by Brackett Geiger.

**bandscreen** See "traveling water screen (TWS)."

**bank sand** Sand excavated from a natural deposit, usually not suitable for use in a filter processing or grading.

**bar** A unit of pressure equal to 0.9869 atmospheres,  $10^6$  dynes per square centimeter, 100,000 pascals, and 14.5 pounds per square inch.

**bar screen** A screening device using a parallel set of stationary bars typically spaced at 25 mm (1 inch) to 50 mm (2 inches).

**Bardenpho™** Biological wastewater treatment process for removal of nitrogen and phosphorus by Baker Process.

**Barminutor®** Combination bar screen and comminuting device by Yeomans Chicago Corp.

**barnacles** A marine crustacean with a calcareous shell that attaches itself to submerged objects.

**Barnebey & Sutcliffe** Former name of Waterlink/Barnebey Sutcliffe.

**barometer** An instrument used to measure atmospheric pressure.

**barometric condenser** A condenser in which vapor is condensed by direct contact with water.

**barometric damper** A pivoting plate used to regulate the amount of air entering a duct or flue to maintain a constant draft within an incinerator.

**barometric leg** (1) A condensate discharge line submerged below the liquid level of an atmospheric tank. (2) A gravity tailpipe from a vacuum barometric condenser.

**barometric pressure** Ambient or local pressure surrounding a gauge, evaporator shell, vent pipe, etc.

**barrel (bbl)** 42 U.S. gallons.

**barriered landscape water renovation system (BLWRS)** A wastewater treatment and denitrification system where wastewater is applied to the top of a mound of soil overlaying a water barrier and microbes oxidize soluble organics as the water percolates through the soil.

**barrier reef** A long ridge of coral built up from the sea floor that runs parallel to the mainland but is separated from it by a deep lagoon.

**Barry Rake** Trash rake by Cross Machine, Inc.

**BART** Best available retrofit technology.

**Bartlett-Snow™** Rotary calciner for soil reclamation by ABB Raymond.

**basal application** The application of pesticides on plant stems or tree trunks just above the soil line.

**base** (1) A substance that can accept a proton. (2) A substance that can react with an acid to form a salt. (3) An alkaline substance.

**baseline** A sample used as a comparative reference point when conducting further tests or calculations.

**basic water requirement (BWR)** The amount of water required by humans for drinking, sanitation, bathing, and cooking needs to meet a minimum quality of life, and generally considered to be 50 liters per day per person.

**basicity factor** Factor used to determine neutralization capabilities of alkaline reagents used to treat acidic wastes.

**basket centrifuge** Batch-type centrifuge where sludge is introduced into a vertically mounted spinning basket and separation occurs as centrifugal force drives the solids to the wall of the basket.

**basophil** A cell or substance easily stained by basic dyes. Also spelled “basophile.”

**Basys Biofilter** Modular air pollution control filter by Basys Technologies.

**BAT** See “best available technology (BAT).”

**Batch Master** Package wastewater treatment system by USFilter/Industrial Wastewater Systems.

**batch process** A noncontinuous treatment process in which a discrete quantity or batch of liquid is treated or produced at one time.

**batch reactor** A reactor where the contents are completely mixed and flow is neither entering nor leaving the reactor vessel.

**Batch-Master** Bottom discharge basket centrifuge by Baker Process/Ketema.

**Batch-Miser** Horizontal plate filter by Baker Process/Ketema.

**Batch-O-Matic** Bottom discharge basket centrifuge by Baker Process/Ketema.

**BATEA** Best available technology economically achievable and available.

**bathyal zone** The ecological zone of the ocean above the abyssal zone, generally between 200 and 3500 meters.

**BATNEEC** Best available technology not entailing excessive cost.

**battery limit** The boundary limits of equipment or a process unit that defines interconnecting points for electrical piping or wiring.

**Bauer®** Screening equipment product line acquired by Andritz-Ruthner, Inc.

**Baumé** Designation of hydrometer scale used to indicate specific gravity.

**bauxite** Ore containing alumina monohydrate or alumina trihydrate which is the principal raw material for alumina production.

**bbf** See “barrel (bbf).”

**BCC** See “bioaccumulative chemicals of concern (BCC).”

**BCF** (1) See “bioconcentration factor (BCF).” (2) Bead and crevice free.

**BCL Screen** Back cleaned bar screen by Waste-Tech, Inc.

**BCPCT** Best conventional pollutant control technology.

**BCT** Best control technology.

**BDAT** See “best demonstrated available technology (BDAT).”

**BDCT** Best demonstrated control technology.

**BDOC** See “biodegradable dissolved organic carbon (BDOC).”

**BDT** Best demonstrated technology.

**beachwell** A shallow intake well making use of beach sand and structure as a filter medium.

**Bead Mover™** Ion exchange resin and filter media loading pump by IX Services Co.

**Bead Thief™** Ion exchange resin core sampler by IX Services Co.

**Beaufort scale** A numerical scale of wind force where a Beaufort force 0 wind is calm and a force 12 wind indicates hurricane force with winds in excess of 120 km/hr (75 mph).

**bed depth** The depth of filter media or ion exchange resin contained in a vessel.

**bed load** Sediment particles resting on or near the channel bottom that are pushed or rolled along by the flow of water.

**bed volume (BV)** The volume occupied by filter media in a filter, or resin in an ion exchange device.

**bedrock** Solid rock encountered below the mantle of loose rock and soil which occurs on the earth's surface.

**Beggiatoa** Filamentous microbe, commonly associated with sludge bulking, that results from low dissolved oxygen levels and/or high sulfide levels.

**BEI** See "biological exposure indexes (BEI)."

**BEJ** Best engineering judgement.

**Bekomat®** Micro-processor-driven condensate trap by BEKO Condensate Systems Corp.

**Bekosplit** Separation process for condensate emulsions by BEKO Condensate Systems Corp.

**Bekox** Former name of USFilter/Bekox.

**Belclene®** Scale control additive by BioLab, Inc.

**Belcor** Organic corrosion control by BioLab, Inc.

**Belgard®** Antiscalant for seawater evaporators by BioLab, Inc.

**Belite®** Antifoaming agent by BioLab, Inc.

**Bellacide** Algaecide by BioLab, Inc.

**BelloZon** Chlorine dioxide generator by ProMinent Fluid Controls, Inc.

**Beloit-Passavant** Company acquired by USFilter/Zimpro.

**Belspere®** Chemical dispersant by BioLab, Inc.

**belt conveyor** A device used to transport material, consisting of an endless belt that revolves around head and tail pulleys.

**belt filter press** See "belt press."

**belt press** A dewatering device utilizing two fabric belts revolving over a series of rollers to squeeze water from the sludge.

**belt thickener** Mechanical sludge processing device that uses a revolving horizontal filter belt to pre-thicken sludge prior to dewatering and/or disposal.

**bench test** A small scale test or study used to determine whether a technology is suitable for a particular application.

**beneficial organism** A pollinating insect, pest predator, parasite, pathogen, or other biological control agent which functions naturally or as part of an integrated pest management program to control another pest.

**benthic oxygen demand** The oxygen demand exerted by microbes and other organisms living on, or in close association with, the organic mud and sludge deposits on the bottom of a river or stream.

**benthic** Relating to the bottom environment of a water body.

**benthos** Microbes and other organisms living on or in close association with the bottom of a water body.

**BentoLiner™** Clay composite liner by SLT North America, Inc.

**Bentomat™** Geotextile-bentonite liner by Colloid Environmental Technologies Co.

**bentonite** Colloidal clay-like mineral that can be used as a coagulant aid in water treatment systems. Sometimes used as the earth component or soil amendment for construction of a pond or landfill liner because of its low permeability.

**benzene** A colorless, flammable liquid with carcinogenic properties produced from coal tar and used as a solvent. Benzene is an aromatic hydrocarbon characterized by its six-sided ring structure with the chemical formula  $C_6H_6$ .

**Bepex** Former name of Hosokawa Bepex Corp.

**berm** A horizontal, earthen ridge or bank.

**Bernoulli's Equation** Energy equation commonly used to calculate head pressure, and considers velocity head, static head, and elevation.

**beryllium** An airborne metal hazardous to human health when inhaled that may be discharged by machine shops, ceramic and propellant plants, and foundries.

**best available technology (BAT)** The best technology, treatment techniques, or other means available after considering field, rather than solely laboratory conditions.

**best demonstrated available technology (BDAT)** A technology demonstrated in full-scale commercial operation and shown to have statistically better performance than other technologies.

**best management practice (BMP)** The schedules of activities, methods, measures, and other accepted industry management practices to prevent pollution of waters and facilitate compliance with applicable regulations.

**Beta NOx 2000™** NOx oxidation/reduction unit by Dual Division, Met-Pro Corp.

**beta particles** Electrons emitted by a radioactive nucleus.

**beta radiation** A stream of beta particles released during radioactive decay.

**Betz Laboratories** Former name of BetzDearborn, Inc.

**BevMAX™** Reverse osmosis system for beverage industry applications by USFilter.

**BFI®** Trademark of Browning-Ferris Industries, Inc.

**BFR** See "Ballasted Flocc Reactor™ (BFR)."

**B-Gon™** Mist eliminator by Kimre Inc.

**BGS2** Sludge dryer/pelletizer formerly offered by Wheelabrator Water Technologies, Inc.

**BHN Probiotic** Lagoon sludge oxidation product line by Bio Huma Netics, Inc.

**B-horizon** The intermediate soil layer, usually having a high clay content, where minerals and other particles washed down from the A-horizon accumulate.

**bhp** Brake horsepower. The power developed by an engine as measured by a dynamometer applied to the shaft or flywheel.

**Bibbigard** Torque limiter by Brunel Corp.

**Bibo** Dewatering and drainage pumps by ITT Flygt Corp.

**bicarbonate** A chemical compound containing an  $\text{HCO}_3$  group.

**bicarbonate alkalinity** Water alkalinity caused by bicarbonate ions.

**bicarbonate hardness** Water hardness caused by calcium bicarbonate and magnesium bicarbonate.

**BI-CHEM** Surfactant degradation product by Sybron Chemicals, Biochemical Division.

**Bi-Chem**<sup>®</sup> Selectively adapted bacterial cultures for wastewater treatment by Sybron Chemicals, Inc.

**BIF** See “boilers and industrial furnaces (BIF).”

**BIF**<sup>®</sup> Product group of BIF.

**biflow filter** Granular media filter characterized by water flow from both top and bottom to a collector located in the center of the filter bed.

**Big Dipper**<sup>®</sup> Grease removal unit by Thermaco, Inc.

**bilharzia** Waterborne disease also known as “schistosomiasis.”

**binary fission** Asexual reproduction in some microbes where the parent organism splits into two independent organisms.

**Bio Disk-10** Biological deodorizer by Neutraman, Inc.

**Bio Dredge** A lagoon sludge oxidation process by Unisol.

**Bio Genesis**<sup>™</sup> Microbial formulation to reduce wastewater odors by Bio Humanetics, Inc.

**Bio Gro** Bio Gro Division of Wheelabrator Water Technologies, Inc.

**Bio Jet-7** Organic solution of seven strains of live, non-toxic bacteria by Jet, Inc.

**Bio Max**<sup>™</sup> Floating piping system by Environmental Dynamics Inc.

**Bio\*Fix**<sup>®</sup> Alkaline stabilization process for biosolids by Wheelabrator Water Technologies, Inc.

**Bio\*Lime**<sup>®</sup> Agricultural liming agent by Wheelabrator Water Technologies, Inc.

**Bio/Scent**<sup>™</sup> Liquid odor neutralizer by Hinsilblon Laboratories.

**BioAccelerator**<sup>™</sup> Groundwater treatment unit by Biotrol.

**bioaccumulants** Substances that increase in concentration in living organisms as they take in contaminated air, water, or food because the substances are very slowly metabolized or excreted. See also “biological magnification.”

**bioaccumulation** The process by which living organisms absorb and retain chemicals or elements from their environment, especially from their food.

**bioaccumulative** A characteristic of a chemical whose rate of intake into a living organism is greater than its rate of excretion or metabolism.

**bioaccumulative chemicals of concern (BCC)** Chemicals including mercury, dioxin, chlordane, DDT, and PCBs which accumulate in the environment and represent potential risks to human health, aquatic life, and wildlife.

**Bio-Activation** Combination activated sludge and trickling filter wastewater treatment system by Amwell, Inc.

**bioassay** An analytical method that uses living organisms to measure the effect of a substance, factor, or condition on the environment.

**bioaugmentation** A method of cleaning up pollution by inoculating a site with specific contaminant-targeted microbes in high density.

**Biobed** Wastewater treatment plant by Biothane Corp.

**biobrick** A kiln-dried building brick with an organic component provided by municipal wastewater solids.

**BioCam** Wastewater treatment system utilizing conditioned anaerobic methanogens by Parkson Corp.

**Biocarb™** Activated carbon by USFilter/Westates.

**Biocarbonate®** Biological wastewater treatment process using immersed fixed bed filter by USFilter/Krüger.

**Biocel** Modular biofiltration system for VOC reduction by Envirogen.

**biochemical oxidation** Oxidative reactions brought about by biological activity which result in chemical combination of oxygen with organic matter.

**biochemical oxygen demand (BOD)** A standard measure of wastewater strength that quantifies the oxygen consumed in a stated period of time; usually 5 days and at 20°C.

**Biocidal™** Sodium hypochlorite system by Scienco/FAST Systems.

**biocide** A chemical used to inhibit or control the population of troublesome microbes.

**Bio-Clarifier** Secondary clarifier with rotating sludge scoop for use with package rotating biological contactor by USFilter/Envirex.

**Bioclean** Reverse osmosis membrane cleaner by BetzDearborn-Argo District.

**Bioclere™** Packaged wastewater treatment plants by Ekofinn Bioclere.

**bioconcentration** The net increase in concentration of a substance in plants and animals above what is found in the natural surroundings.

**bioconcentration factor (BCF)** The accumulation of chemicals that live in contaminated environments equal to the quotient of the concentration of a substance in aquatic organisms divided by the concentration in the water during the same time period.

**Biocontact®** Biological aerated filter by Ekokan.

**biocontactor** A unit process such as an aeration basin, trickling filter, RBC, or digester where microbes degrade/transform organic matter.

**bioconversion** The conversion of organic waste products into an energy resource through the action of microbes.

**biocriteria** Quantitative and narrative goals for the aquatic community used within water programs.

**Biocube™** Aerobic biofilter for airborne odors and VOCs by AMETEK Rotron Biofiltration.

**Bio-D®** Bioremediation nutrients by Medina Products Bioremediation Division.

**biodegradable** Term used to describe organic matter which can undergo biological decomposition.

**biodegradable dissolved organic carbon (BDOC)** The portion of TOC that is easily degraded by microbes.

**biodegradable organic matter (BOM)** The portion of organic matter in water that can be degraded by microbes.

**BIOdek®** Synthetic media for fixed film wastewater treatment reactors by Brentwood Industries, Inc.

**BioDen™** Anaerobic biological nitrate removal process by Nitrate Removal Technologies, LLC.

**BioDenipho**<sup>®</sup> Biological phosphorus and nitrogen removal process by USFilter/Krüger.

**Biodenit**<sup>®</sup> Biological denitrification process using immersed fixed bed filter by USFilter/Krüger.

**Bio-Denitro**<sup>®</sup> Biological nitrogen removal process by USFilter/Krüger.

**biodiversity** An environment where multiple organisms coexist.

**BioDoc**<sup>®</sup> Rotary distributor for trickling filters by WesTech Engineering Inc.

**Bio-Drum** Rotating drum containing biological filter media for wastewater treatment by JDV Equipment Corp.

**Bio-Energizer** Lagoon sludge oxidation system by Probiotic Solutions.

**biofeasibility** A bioremediation feasibility study done to determine the applicability and potential success of a bioremediation technique or procedure for a given site.

**biofilm** An accumulation of microbial growth.

**BiofiltAIR**<sup>™</sup> Biological air filter by Biorem Technologies, Inc.

**biofilter** See “biological filter.”

**BioFlex**<sup>®</sup> Moving aeration chains for wastewater treatment systems by Parkson Corp.

**Bioflush** Trash rake by E. Beaudrey & Co.

**Biofor**<sup>™</sup> Biological fixed film wastewater treatment system by Infilco Degremont, Inc.

**biofoul** Presence and growth of organic matter in a water system.

**BioFuser**<sup>®</sup> Oxygen transfer and mixing units for wastewater treatment systems by Parkson Corp.

**biogas** The gases produced by the anaerobic decomposition of organic matter.

**biogenesis** The theory that living organisms arise only from other living organisms.

**Bioglas** Rigid, open cell foam silica biological oxidation media by the former Bioglas Corp.

**Bioglas Alpha** Package fixed film wastewater treatment plant by the former Bioglas Corp.

**Biograte** Floor grating by Brentwood Industries, Inc.

**BioGuard ACS**<sup>™</sup> Biofouling inhibitor for reverse osmosis systems by Professional Water Technologies, Inc.

**BioGuard**<sup>®</sup> Influent cleaning system by Parkson Corp.

**BioGuide**<sup>®</sup> Process monitoring and control technology by BioChem Technology, Inc.

**Bioken** Former name of Filter Products.

**biokinetics** The branch of science that pertains to the study of living organisms.

**Biolac**<sup>®</sup> Extended aeration waste treatment process by Parkson Corp.

**Biolift**<sup>™</sup> Waste activated sludge thickening system by Baker Process.

**Biologic**<sup>™</sup> Nutrient supplement for wastewater treatment facilities by SciCorp Systems, Inc.

**biological exposure indexes (BEI)** Guidelines used for assessing the hazard posed to healthy workers by chemical substances present in the body.

**biological filter** A bed of sand, stone, or other media through which wastewater flows that depends on biological action for its effectiveness.



**biological magnification** Refers to the process whereby certain substances such as pesticides or heavy metals move up the food chain, work their way into rivers or lakes, and are eaten by aquatic organisms such as fish, which in turn are eaten by large birds, animals, or humans.

**biological process** The process by which the metabolic activities of bacteria and other microorganisms break down complex organic materials into simple, more stable substances.

**biological treatment** A treatment technology that uses bacteria to consume organic waste.

**biologically active filter (BAF)** A granular media filter, usually employing activated carbon or anthracite which relies on the growth of a biofilm to aid in the degradation of organic matter and/or ammonia.

**Bio-Lysis®** Sludge reduction process by Kady International.

**biomass** The mass of biological material contained in a system.

**biome** A biological community or ecosystem characterized by a specific habitat and climate such as a tropical rain forest or a desert.

**biomedical waste** Waste derived from the operation of hospital, laboratory, and health care facilities.

**Biomizer™** Continuously sequencing reactor process by Environmental Dynamics Inc.

**Bio-Module** Package wastewater treatment plant using rotating biological contactors by USFilter/Envirex.

**BioMonitor™** Automated on-line BOD analyzer by Anatel Corp.

**biomonitoring** The use of living organisms to test water quality at a discharge site or further downstream.

**Bio-Net®** Rotating biological contactor by NSW Corp.

**BIONox™** Submersible aerator/mixer by ABS Pumps, Inc.

**Bionutre** Nutrient removal process by USFilter/Envirex.

**Bio-Nutri™** Nitrogen and phosphorus removal process by Smith & Loveless, Inc.

**Bio-Ox™** Bioreactor for biological treatment of wastewater by SRE, Inc.

**bio-oxidation** See "biochemical oxidation."

**Bio-Pac** Package trickling filter formerly offered by USFilter/Envirex.

**Bio-Pac SF#30** Trickling filter media by NSW Corp.

**Biopaq®** Upflow anaerobic sludge blanket process used for treatment of high-strength wastes by CBI Walker, Inc., (U.S. licensee), Biwater (U.K. licensee), and Paques B.V. (licensor).

**BioPasteur®** Biosolids pasteurization system by USFilter/Krüger.

**biopile** A remediation technique that involves the mounding of contaminated soil in a lined and covered pile with air and amendments circulating via pumping.

**Bio-Pure** Water reclamation treatment plant by AquaClear Technologies Corp.

**biopure water** Water that is sterile, pyrogen free and has a total solids content of less than 1 mg/L.

**Biopuric** Technology to remove hydrogen sulfide from anaerobic digester biogas by Biothane Corp.

**Bio-Reel™** Fixed film wastewater treatment system using coiled, corrugated tubing by Schreiber Corp.

**bioremediation** The use of the natural ability of microbes to use waste materials in their metabolic processes and convert them into harmless endproducts.

**Bio-S<sup>®</sup>** Bioremediation surfactant by Medina Products Bioremediation Division.

**Bioscan 2** Monitoring technology for microbial activity by BetzDearborn, Inc.

**Bioscrub<sup>™</sup>** Rotating biological contactor odor and VOC treatment system by CMS Group, Inc.

**Bioscrubbers<sup>™</sup>** Biological-based system for removal of odors by WRc Process Engineering.

**Biosep<sup>®</sup>** Membrane water/wastewater treatment process by USFilter/Krüger (North America) and OTV.

**Bio-Separator** Floating flow diversion baffle for lagoons by ThermaFab, Inc.

**bioslurping** An in situ remediation technique that involves extraction of both vapor and liquid from the subsurface, also known as “dual-phase extraction.”

**Bio-Sock** Fabric sock used to introduce bacterial cultures into a flow by Sybron Chemicals, Inc.

**Biosock<sup>™</sup>** Biological culture application system by Sybron Chemicals, Inc.

**biosolids** Solid organic matter recovered from municipal wastewater treatment that can be beneficially used, especially as a fertilizer. “Biosolids” are solids that have been stabilized within the treatment process, whereas “sludge” has not.

**biosorption process** See “contact stabilization process.”

**Bio-Source<sup>™</sup>** Biocide by Avista Technologies.

**biosparging** A groundwater remediation technology where compressed air is injected into a contaminated aquifer.

**biosphere** The mass of living organisms found in a thin belt at the earth’s surface.

**BioSpiral** Rotating biological contactor formerly offered by Walker Process Equipment.

**Biostart<sup>™</sup>** Liquid microbial concentrate by Advanced Microbial Systems, Inc.

**biostat** A substance that inhibits biological growth without destroying the biomass.

**biostimulation** A method of cleaning up pollution using indigenous microbes at a contaminated site and providing only fertilizers, nutrients, or special chemical compounds that speed the growth of the indigenous microbial population.

**Biostyr<sup>®</sup>** Upflow mixed media reactor process for removal of nitrogen and suspended solids by USFilter/Krüger (North America) and OTV.

**Biostyrene<sup>®</sup>** Floating filter media by USFilter/Krüger (North America) and OTV.

**Bio-Surf** Rotating biological contactor process by USFilter/Envirex.

**biota** All living organisms within a system.

**Biotac<sup>™</sup>** Bioremediation system that delivers bacteria to wet wells by USFilter/Davis Process.

**biotechnology** Techniques that use living organisms or parts of organisms to produce a variety of products to improve plants or animals or to develop microorganisms to remove toxics from bodies of water, or act as pesticides.

**Biothane<sup>®</sup>** Anaerobic wastewater treatment process by Biothane Corp.

**Bio-Tite<sup>®</sup>** Biofiltration odor control system by Thermacon Enviro Systems, Inc.

**Bioton<sup>®</sup>** Biological VOC and odor control system by Monsanto Enviro-Chem Systems, Inc.

**biotower** See “biological filter.”

**Biotox**<sup>®</sup> Regenerative thermal oxidation process by Biothermica International, Inc.

**biotransformation** Conversion of a substance into other compounds by organisms; includes biodegradation.

**biotrickling filter** Odor treatment system where air is scrubbed with recirculating liquid flowing over high-porosity packing materials covered with a thin film of sulfur-oxidizing microbes.

**bioturbation** The net effect of the activity of benthic organisms at wastewater treatment plant discharges which may aid in the dispersion of contaminants and increase the exchange of oxygen and nutrients between the sediment and water.

**bioventing** An in situ groundwater remediation technology where air is introduced into unsaturated soil to facilitate biodegradation of organic contaminants.

**BioWeb**<sup>™</sup> Synthetic media providing a growth site for wastewater biomass by USFilter/Davco.

**Biox**<sup>™</sup> Package water treatment plant by Bioscience, Inc.

**Bioxide**<sup>®</sup> Sewage odor control product by USFilter/Davis Process.

**Bioxide-AQ**<sup>™</sup> Odor and corrosion control product by USFilter/Davis Process.

**BIPM** International Bureau of Weights and Measures.

**bipolar membrane** A membrane composed of two distinct layers of oppositely charged materials.

**bipolar membrane electro dialysis** See “water splitting.”

**Bird Machine** Sludge dewatering equipment product line of Baker Process.

**Birm**<sup>®</sup> Granular filter media for removal of iron and manganese by Clack Corp.

**bittern** The bitter liquid remaining after the crystallization of salt from a brine. See also “mother liquor.”

**Bitumastic**<sup>®</sup> Coal tar coating products by Carboline Co.

**bituminous coal** A coal high in carbonaceous matter that yields a considerable amount of volatile waste matter when burned.

**Blace Filter** A precoat filter system by Blace Filtronics, Inc.

**Black Clawson** Former name of Thermal Black Clawson.

**black liquor** Strong organic waste generated during kraft pulping process.

**black lung disease** Common name for the lung disease “anthracosis” caused by prolonged inhalation of coal dust, which results in fibrosis, or scarring of lung tissue.

**black sand** Discoloration of filter sand resulting from manganese deposits.

**black water** (1) A condition in drinking water that results from the presence of excess oxidized manganese. (2) Water that contains animal, human, or food waste.

**blank** A quality control sample representing a matrix and containing all the constituents except the analyte.

**blanketing gas** Nitrogen or other inert gas used in a “gas blanket.”

**blast furnace** Furnace used in iron-making process in which hot blast air flows upward through the raw materials and exits at the furnace top.

**Blastocystis** An intestinal protozoan parasite transmitted by contaminate food or water.

**Blaw-Knox** Former name of Buffalo Technologies, Inc.

**bleach** An oxidizing compound usually containing chlorine combined with calcium or sodium.

**bleed** To draw accumulated liquid or gas from a line or container.

**Blendmaster** Sludge mixer by McLanahan Corp.

**Blendrex™** Motionless mixer by LCI Corp.

**blind flange** A flanged plate or blind used to close the end of a pipeline.

**blinding** The reduction or cessation of flow through a filter resulting from solids restricting the filter openings.

**Blizzard Adsorption System** Polymeric adsorbent technology for VOC abatement by On-Demand Environmental Systems, Inc.

**BLM** U.S. Department of Interior's Bureau of Land Management.

**Block & Hong process** Biological phosphorus removal process by USFilter/Krüger.

**blood worm** The larval stage of the midge fly.

**bloodborne pathogen** Pathogenic microbes present in human blood and other potentially infectious materials which can cause disease in humans.

**bloom** See "algal bloom."

**blowback** Filtrate blown out through the filter medium on a rotary vacuum filter by the air introduced to move the filter cake away from the cloth.

**blowdown** A controlled discharge from a recirculating system designed to prevent a buildup of some material.

**blower** Air conveying equipment that generates pressures up to 103 kPa (15 psi) commonly used for wastewater aeration systems.

**BLS™** Sludge reduction process by Kady International.

**blue baby syndrome** See "methemoglobinemia."

**blue vitriol** Common name for copper sulfate used to control algae.

**blue-green algae** A group of aquatic organisms having a blue pigment in addition to a green-colored chlorophyll, and often the cause of nuisance conditions in water bodies.

**BLWRS** See "barriered landscape water renovation system (BLWRS)."

**BMP** See "best management practice (BMP)."

**BMR** Baseline monitoring report.

**BNR** Biological nutrient removal.

**Boa-Boom** Oil spill containment booms by Environetics, Inc.

**Boat®** Boat-shaped intrachannel clarifier by United Industries, Inc.

**BOD** See "biochemical oxygen demand (BOD)."

**BOD<sub>5</sub>** Five-day carbonaceous or nitrification-inhibited BOD. See also "biochemical oxygen demand (BOD)."

**BOD-Seed™** Seed microbes for BOD testing by Sybron Chemicals, Inc.

**BODu** See "ultimate BOD (BODU)."

**body burden** The total radiation or toxic material present in the body at a point in time.

**body feed** Coating material added to the influent of precoat filters during filtration cycle.

**bog** Poorly drained land filled with decayed organic matter that is wet and spongy and unable to support an appreciable weight.

**BogenFilter™** Belt filter press by Klein America, Inc.

**boil out** An evaporator cleaning process where wash water is boiled in an evaporator to remove scale deposits.

**boiler** A vessel in which water is continually vaporized into steam by the application of heat.

**boiler feedwater** Water which, in the best practice, is softened and/or demineralized, heated to nearly boiler temperature, and deaerated before being pumped into a steam boiler.

**Boilermate®** Packed column deaerator by Cleaver-Brooks.

**boilers and industrial furnaces (BIF)** A category of thermal treatment operations, also including cement and aggregate kilns, asphalt, and smelting furnaces, whose combustion processes and air emissions are regulated.

**boiling point** The temperature at which a liquid's vapor pressure equals the pressure acting on the liquid.

**boiling point elevation (BPE)** The difference between the boiling point of a solution and the boiling point of pure water at the same pressure.

**BOM** See "biodegradable organic matter (BOM)" and "background organic matter (BOM)."

**bomb calorimeter** An instrument used to determine the heat content of sludge or other material.

**bone char** A carbon-based adsorbent made by carbonizing animal bones.

**BonoZon** Ozone generator by ProMinent Fluid Controls, Inc.

**BOO** Build, own, operate.

**BOOM** Build-own-operate-maintain.

**boom** A floating barrier used to contain oil on a body of water.

**booster pump** A pump used to raise the pressure of the fluid on its discharge side.

**BOOT** Build-own-operate-transfer.

**Boothwall™** Dust collector cartridge filters by Dustex Corp.

**BoR** U.S. Bureau of Reclamation. Also called "BuRec."

**bore hole** A man-made hole in a geological formation.

**Bosker™** Trash rack cleaner by Brackett Green.

**BOT** Build, operate, transfer.

**botanical pesticide** A pesticide whose active ingredient is a plant-produced chemical such as nicotine or strychnine.

**bottom ash** The noncombustible particles that fall to the bottom of a boiler furnace.

**bottoming cycle** Cogeneration system where thermal heat is produced by the process and by-product electricity is then generated.

**botulism** A severe form of food poisoning usually associated with development of a toxin produced by bacteria such as bacillus in improperly preserved or prepared food.

**bound water** Water held on the surface or interior of colloidal particles.

**Bouyoucos** A laboratory test procedure employing hydrometers to determine the fine particle size distribution in a slurry.

**Bowser-Briggs** Former manufacturer of oil/water separation equipment.

**Boyle's Law** The volume of a gas varies inversely with its pressure at constant temperature.

**Boythorp** Glass coated steel tanks by Klargestor.

**BPE** See “boiling point elevation (BPE).”

**BPEO** Best practical environmental option.

**BPR** (1) Biological phosphorous removal. (2) Boiling point rise.

**Brckett Green** Former name of Brackett Geiger.

**brackish water** Water containing low concentration of soluble salts, usually between 1000 and 10,000 mg/L.

**branch sewer** A sewer that receives wastewater from a small area and discharges into a main sewer serving more than one area.

**Brandol<sup>®</sup>** Cylindrical fine bubble diffusers by USFilter/Schumacher Filters.

**brass** A copper alloy containing up to 40% zinc.

**braze** To thermally bond metallic parts with a cuprous alloy.

**break tank** A storage tank at atmospheric pressure from which feed water is drawn prior to further treatment or use.

**breakpoint chlorination** Addition of chlorine to a water or wastewater until the chlorine demand has been satisfied. Further addition will result in a chlorine residual so that disinfection can be assured.

**breakthrough** That point in the granular media filter cycle when the filtrate turbidity begins to increase because the filter bed is full and no longer able to retain solids.

**breakwater** An offshore barrier, often connected to shore, which breaks the force of waves and provides shelter from wave action.

**Breeze<sup>™</sup>** Compact air stripping unit by Aeromix Systems, Inc.

**BRI** See “building-related illness (BRI).”

**brine** Water saturated with, or containing a high concentration of, salts, usually in excess of 36,000 mg/L.

**brine concentrator** Term used to describe a vertical tube falling film evaporator employing special scale control techniques to maximize concentration of dissolved solids.

**brine heater** The heat input section of a multistage flash evaporator where feed-water is heated to the process’ top temperature.

**brine mud** Waste material, often associated with well-drilling or mining, composed of mineral salts or other inorganic compounds.

**brine staging** See “reject staging.”

**British Thermal Unit (Btu)** The quantity of heat required to raise the temperature of one pound of water by 1°F.

**Brix scale** A scale used in a hydrometer for measuring the concentration or density of sugar in solution.

**broadcast application** The spreading of pesticides over an entire area.

**broad-crested weir** A weir having a substantial crest width in the direction parallel to the direction of water flowing over it.

**broke** Paper waste generated prior to completion of the papermaking process.

**bromate** The highest oxidation state of the bromide ion which can be formed during the ozonation of waters containing bromide.

**BromiCide<sup>®</sup>** Microbiocide by BioLab Water Additives.

**bromide** An inorganic ion found in surface water and groundwater that, when oxidized by chlorine or ozone, can result in the formation of bromide-substituted disinfection byproducts.

**bromine** A halogen element used as a water disinfectant in combination with chlorine as a chlorine-bromide mixture. Chemical symbol is Br.

**bronze** A copper-tin alloy, or any other copper alloy, that does not contain zinc or nickel as the principal alloying element.

**brown coal** A common term for lignite.

**brownfield** An inactive site or property being put back into productive economic use after the relevant environmental agencies agree contaminants present at the property no longer pose an unacceptable risk to human health or the environment.

**Brownian motion** Erratic movement of colloidal particles that results from the impact of molecules and ions dissolved in the solution.

**Brownie Buster** Organic solids agitator/separator by Enviro-Care Co.

**Bruner** Product line by Culligan International.

**Bruner-Matic**<sup>®</sup> Water treatment control center by Culligan International Corp.

**brush aerator** Mechanical aeration device most frequently used in oxidation ditch wastewater treatment plants, consisting of a horizontal shaft with protruding paddles, that is rapidly rotated at the water surface. Also called a “rotor.”

**BS&W** Bottom sediments and water.

**BTEX** Benzene, toluene, ethylbenzene, and xylene.

**Btu** See “British Thermal Unit (Btu).”

**BTU-Plus**<sup>®</sup> Filter media that incinerates to inert ash by Alar Engineering Corp.

**BTX** Benzene, toluene, and xylene.

**bubble point** The pressure at which air first passes through a wet membrane; the path being the channel of greatest pore size.

**bubbler system** Common terminology for pneumatic-type differential level controller.

**bubonic plague** An acute infectious disease usually transmitted from infected animals to humans by the bite of a rat flea.

**buchner funnel** A laboratory funnel with a perforated bottom that utilizes a disposable filter paper to evaluate wastewater and sludge dewaterability.

**bucket elevator** A conveying device consisting of a head and foot assembly that supports and drives an endless chain or belt to which buckets are attached.

**Budd** Nonmetallic chain product line by Polychem Corp.

**buffer** A substance that stabilizes the pH value of solutions.

**buffer strips** Strips of grass or other erosion-resisting vegetation between or below cultivated strips or fields.

**buffered** The ability to resist changes in pH.

**buffering capacity** The capacity of a solution to resist a change in composition, especially changes in pH.

**Bufllovak**<sup>®</sup> Evaporator and crystallizer product line by Buffalo Technologies, Inc.

**building-related illness (BRI)** Condition in which at least 20% of a building’s occupants display symptoms of illness for more than 2 weeks and the cause of the illness can be traced to a specific building source.

**bulk density** The density/volume ratio for a solid including the voids contained in the bulk material.

**bulkhead** A partition of wood, rock, concrete, or steel used for protection from water, or to segregate sections of tanks or vessels.

**bulking sludge** A poorly settling activated sludge that results from the predominance of filamentous organisms.

**bulky waste** Large items of waste materials, such as appliances, furniture, large auto parts, trees, stumps.

**Bullseye™** Wastewater nutrient removal process by United Industries, Inc.

**buoyancy** The tendency of a body to rise or float in a liquid.

**BuRec** U.S. Bureau of Reclamation. Also called “BoR.”

**burette** A glass tube with fine gradations and bottom stopcock used to accurately measure and dispense fluids.

**burning agents** Additives that improve the combustibility of the materials to which they are applied.

**burning rate** The rate at which solid waste is incinerated or heat is released during incineration.

**burnishing** A surface finishing process in which surface irregularities are displaced rather than removed.

**bushing** (1) A short threaded tube which screws into a pipe fitting to reduce its size. (2) The bearing surface for pin rotation when a chain revolves around a sprocket.

**butterfly valve** A valve equipped with a stem-operated disk that is rotated parallel to the liquid flow when opened and perpendicular to the flow when closed.

**BV** See “bed volume (BV).”

**BVF®** Anaerobic wastewater treatment system by ADI Systems, Inc.

**BWI** British Drinking Water Inspectorate.

**BWR** See “basic water requirement (BWR).”

**BWRO** Brackish water reverse osmosis.

**bypass** A channel or pipe arranged to divert flow around a tank, treatment process, or control device.

**byproduct** A material or substance that is not a primary product of a process and is not separately produced.

## C

**C** See “Celsius (C).”

**C. parvum** See “*Cryptosporidium*.”

**C × T** The product of the “residual disinfection concentration” (C) in mg/L determined before or at the first customer, and the corresponding “disinfectant contact time” (T) in minutes. Also called “CT value.”

**C × T<sub>99,9</sub>** The CT value required for 99.9% inactivation of *Giardia lamblia* cysts.

**c/c** Center-to-center.



**CA** See “cellulose acetate (CA).”

**CA membrane** Cellulose acetate membrane.

**CA•RE™** Spent cartridge filter recovery program by USFilter Corp.

**CAA** See “Clean Air Act (CAA).”

**CAAA** See “Clean Air Act Amendments (CAAA).”

**CableTorq** Circular thickener with automatic torque load response system by GL&V/Dorr-Oliver, Inc.

**CaCO<sub>3</sub>** See “calcium carbonate.”

**CAD** Computer-aided design.

**cadmium (Cd)** A heavy metal element that accumulates in the environment.

**CADRE®** VOC destruction process by Vara International.

**CAF®** Cavitation air flotation units by HydroCal, Inc.

**CAFE** See “Corporate Average Fuel Economy Standard (CAFE).”

**CAFOs** Concentrated animal feeding operations.

**Cairox®** Potassium permanganate by Carus Chemical Co., Inc.

**Cairox ZM®** Zebra mussel control technology by Carus Chemical Co., Inc.

**caisson** Watertight structure used for underwater work.

**cake** Dewatered sludge with a solids concentration sufficient to allow handling as a solid material.

**cake filtration** Filtration classification for filters where solids are removed on the entering face of the granular media.

**CakePress** Modular high pressure section of dewatering press by Parkson Corp.

**Cal** Large calorie. See “calorie.”

**cal** Small calorie. See “calorie.”

**calandria** The heating element in an evaporator consisting of vertical tubes which act as the heating surface.

**calcareous** Composed of, or containing, calcium compounds, particularly calcium carbonate.

**calcify** To become stone-like or chalky due to deposition of calcium salts.

**calcine** Ore, carbonate, mineral, or concentrate that has been roasted in an oxidizing atmosphere to remove sulfur or carbon dioxide.

**calcined lime** See “quicklime.”

**calciner** A device in which the moisture and organic matter in phosphate rock is reduced in a combustion chamber.

**calcining** Exposure of an inorganic compound to a high temperature to alter its form and drive off a substance that was originally part of the compound.

**Calciquest** Liquid polyphosphate by Calciquest, Inc.

**calcium carbonate** A white, chalky substance which is the principal hardness and scale-causing compound in water. Chemical formula is CaCO<sub>3</sub>.

**calcium carbonate equivalent (mg/L as CaCO<sub>3</sub>)** A convenient unit of exchange for expressing all ions in water by comparing them to calcium carbonate which has a molecular weight of 100 and an equivalent weight of 50; signifies that the concentration of a dissolved mineral is chemically equivalent to the stated concentration of calcium carbonate.

**calcium hardness** The portion of the total hardness attributed to calcium compounds.

**calcium hydroxide** See “hydrated lime.”

**calcium hypochlorite** A chlorine compound frequently used as a water or wastewater disinfectant. Chemical formula is  $\text{Ca}(\text{OCl})_2$ .

**calcium sulfate** A white solid known as the mineral “anhydrite” with the chemical formula  $\text{CaSO}_4$ , and gypsum with the formula  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ .

**calibration** The determination, checking, or rectifying of the gradation of any instrument giving quantitative measurements.

**Callaway Chemical** Company acquired by Vulcan Performance Chemicals.

**calorie** The amount of heat required to raise the temperature of one gram of water  $1^\circ\text{C}$ , also known as a “small calorie.” A “large calorie” or “kilocalorie” is the amount of heat required to raise the temperature of a kilogram of water by  $1^\circ\text{C}$ .

**Calver** Chemicals for use in the analysis of calcium in water by Hach Company.

**Calvert** Manufacturer acquired by Monsanto Enviro-Chem Systems, Inc.

**CAM** Carbon adsorption method.

**CAM rule** See “Compliance Assurance Monitoring rule (CAM rule).”

**CAMP** Continuous air monitoring program.

**Camp Nozzle** Plastic strainer-type nozzle for filter underdrain by Walker Process Equipment.

**Campylobacter enteritis** A waterborne gastrointestinal disorder.

**cancer** A class of diseases characterized by the uncontrolled growth of cells.

**Cannon<sup>TM</sup>** Positive displacement digester mixer by Infilco Degremont, Inc.

**Cannonball<sup>2</sup>** Portable multiple gas detector by Biosystems, Inc.

**Cansorb** Activated carbon adsorber by TIGG Corp.

**cap** A layer of clay or other impermeable material installed over the top of a closed landfill to prevent entry of rainwater and minimize leachate.

**CAPA<sup>®</sup>** Caprolactone product by Solvay America.

**capacitive deionization** An electrically regenerated electrosorption process capable of desalinating saline water.

**capillarity** The ability of a soil to retain a film of water around soil particles and in pores through the action of surface tension.

**capillary** (1) A slender hair-like structure or a very fine, small bore tube. (2) A blood vessel with very fine openings that joins the smallest arteries with the smallest veins.

**capillary action** The movement or action of a liquid through interstices, capillary tubes, or other very fine openings due to the molecular attraction between molecules of the liquid for each and a solid surface.

**capillary fringe** The zone of porous material above the zone of saturation containing water held by capillary action.

**Capitox** Modular wastewater treatment plant by Simon-Hartley, Ltd.

**Capozone<sup>®</sup>** Ozone generation system by Capital Controls Co.

**Capsular<sup>®</sup>** Wet well mounted pump station by Smith & Loveless, Inc.

**Captivated Sludge Process** Fixed film biological waste treatment system by the former Waste Solutions.

**Captor<sup>®</sup>** Fixed film biological waste treatment system by the former Waste Solutions.

**capture efficiency** The fraction of organic vapors generated by a process that are directed to an abatement or recovery device.

**CAR™** Aerobic wastewater treatment system with covered reactor by ADI Systems, Inc.

**Carball** Carbon dioxide generator formerly offered by Walker Process Equipment.

**carbamates** A class of pesticides, herbicides, and fungicides developed as less-hazardous replacements for chlorinated hydrocarbons.

**Carbo Dur™** Granular activated carbon by USFilter/Warren.

**Carbo-Cor™** Crossflow membrane used for purification of water-based surface cleaners by Koch Membrane Systems Inc.

**Carbofilt** Anthracite filter media by International Filter Media.

**Carbolux®** Decontaminate system to remove crystallized contaminants from electroplating solutions by USFilter/Dewatering Systems.

**carbon** An element present in many inorganic and all organic compounds.

**carbon adsorption** The use of powdered or granular-activated carbon to remove refractory and other organic matter from water.

**carbon black** An additive that prevents degradation of thermoplastics by ultraviolet light.

**carbon chloroform extract (CCE)** The residue from a carbon chloroform extraction test.

**carbon chloroform extraction** Test to determine organic matter in water where organics adsorbed on an activated carbon cartridge are extracted from the carbon by chloroform and weighed or analyzed.

**carbon cycle** A graphical presentation of the movement of carbon among living and nonliving matter.

**carbon dioxide** A noncombustible gas formed in animal respiration and the combustion and decomposition of organic matter. Chemical formula is  $\text{CO}_2$ .

**carbon fixation** A process occurring in photosynthesis where atmospheric carbon dioxide gas is combined with hydrogen obtained from water molecules.

**carbon monoxide** Colorless, odorless gas produced by incomplete combustion of organic fuels lethal to humans at concentrations exceeding 5000 mg/L. Chemical formula is  $\text{CO}$ .

**carbon steel** A general purpose steel whose major properties depend on its 0.1 to 2% carbon content without substantial amounts of other alloying elements.

**carbon-14** A naturally occurring radioactive isotope of carbon that emits beta particles when it undergoes radioactive decay.

**carbonaceous** Of, pertaining to, or yielding carbon.

**carbonaceous biochemical oxygen demand (CBOD)** The portion of biochemical oxygen demand where oxygen consumption is due to oxidation of carbon, usually measured after a sample has been incubated for 5 days. Also called "first-stage BOD."

**carbonate** A compound containing the anion radical of carbonic acid  $\text{CO}_3$ .

**carbonate alkalinity** Alkalinity resulting from the presence of carbonate ions.

**carbonate hardness** The hardness in water caused by bicarbonates and the carbonates of calcium and magnesium.

**carbonation** The diffusion of carbon dioxide gas through a liquid.

**carbonator** A device used to carbonate or recarbonate water.

**Carbonite** Anthracite filter media by Carbonite Filter Corp.

**Carborundum** Former manufacturer of wastewater treatment equipment.

**carboxylic** The functional group COOH found in all carboxylic acids.

**carboxylic acid** Organic acids such as acetic, lactic, and citric acids which contain one or more COOH groups.

**carboy** A large container used to store or transport liquid chemicals or water samples.

**carcinogen** A cancer or tumor-causing agent.

**cardinal points** The four principal points of a compass: north, south, east, and west.

**Carrobic** Aerobic digester/thickener used with oxidation ditch wastewater treatment system by Baker Process.

**Carrousel<sup>®</sup>** Biological oxidation/wastewater treatment system by DHV Water BV, licensed to Baker Process.

**Carter** Product line of JDV Equipment Corp.

**Cartermix** Anaerobic sludge digester mixing system by JDV Equipment Corp.

**cartridge filter** A filter unit with cylindrical replaceable elements or cartridges.

**Carulite<sup>®</sup>** Catalysts for VOC destruction by Carus Chemical Co.

**Carver-Greenfield process** Multiple effect evaporation process to extract water from sludge.

**CASAC** EPA's Clean Air Scientific Advisory Committee.

**Cascade** The combined use of a gravity belt thickener followed by a belt filter press to dewater sludge by Gebr. Bellmer GmbH.

**Cascade<sup>™</sup>** Biological filtering system using synthetic media by USFilter/General Filter.

**cascade aeration** An aeration method using a series of steps to promote oxygen uptake in a flowing stream.

**casing** A pipe or tube placed in a bore hole to support the sides of the hole and to prevent other fluids from entering or leaving the hole.

**cask** A thick-walled container, usually lead, used to transport radioactive material.

**CASS<sup>™</sup>** Cyclic activated sludge system for wastewater treatment system by CASS Water Engineering, Inc.

**cast iron** A general description for a group of iron-carbon-silicon metallic products obtained by reducing iron ore with carbon at temperatures high enough to render the metal fluid and cast it in a mold.

**CastKleen** Cast-in-place filter underdrain by Baker Process.

**Cat Floe<sup>®</sup>** Cationic polymer to enhance solids/liquid separation by Calgon Corp.

**catalyst** A substance that modifies or increases the rate of a chemical reaction without being consumed in the process.

**catalytic converter** A device installed in the exhaust system of an internal combustion engine which utilizes catalytic action to oxidize hydrocarbon and carbon monoxide emissions to carbon dioxide.

**catalytic cracking** The use of a catalyst during a cracking process.

**catch basin** An open basin that serves as a collection point for stormwater runoff.

**catchment** A barrel, cistern, or other container used to catch water.

**catchment area** The area of land bounded by watersheds draining into a river, lake, or reservoir.

**categorical exclusion** A class of actions which either individually or cumulatively would not have a significant effect on the human environment and therefore would not require preparation of an environmental assessment or environmental impact statement.

**categorical pretreatment standard** A technology-based effluent limitation for an industrial facility discharging into a municipal sewer system.

**category I contaminant** U.S. EPA contaminant category indicating sufficient evidence of carcinogenicity via ingestion in humans or animals exists to warrant classification as “known or probable human carcinogens via ingestion.”

**category II contaminant** U.S. EPA contaminant category for which limited evidence of carcinogenicity via ingestion exists to warrant classification as “possible human carcinogens via ingestion.”

**category III contaminant** U.S. EPA contaminant category of substances for which insufficient or no evidence of carcinogenicity via ingestion exists.

**catenary bar screen** Mechanical screening device using revolving chain-mounted rakes to clean a stationary bar rack.

**cathode** The negative electrode where the current leaves an electrolytic solution.

**cathodic protection** Electrochemical corrosion protection achieved by imposing an electrical potential to counteract the galvanic potential between dissimilar metals which would lead to corrosion.

**cation** A positively charged ion that migrates to the cathode when an electrical potential is applied to a solution.

**cation exchange** The ion exchange process in which cations in solution are exchanged for other cations bound to an ion exchange resin or medium.

**cation load factor y** The sum of calcium, magnesium, sodium, and potassium expressed as calcium carbonate equivalents.

**cationic polymer** A polyelectrolyte with a net positive electrical charge.

**Cat-Ox™** Catalytic oxidation system by Catalytic Combustion Corp.

**caustic** Alkaline or basic.

**caustic scrubbing** An air pollution control process using a solution of sodium hydroxide to remove sulfur dioxide from flue gases.

**caustic soda** Common term for sodium hydroxide. Chemical formula is NaOH.

**cavitation** (1) A selective corrosion that results from the collapse of air or vapor bubbles with sufficient force to cause metal loss or pitting. (2) The action of a pump attempting to discharge more water than suction can provide.

**CBG** Clean burning gasoline.

**CBOD** See “carbonaceous biochemical oxygen demand (CBOD).”

**cc** See “cubic centimeter (cc).”

**CCB** Coal combustion by-products.

**CCC** Streaming current coagulation control center by Milton Roy Co.

**CCC** Compromised container caps.

**CCE** See “carbon chloroform extract (CCE).”

**CCOHS** Canadian Centre for Occupational Health and Safety.

**CCPP** Calcium carbonate precipitation potential.

**CCS2000™** Clarifier control system by Drexelbrook Engineering Co.

**CD** See “corona discharge method (CD).”

**CD ozone generation** Ozone discharge technology most frequently used in the potable water industry.

**CDC** See “Centers for Disease Control (CDC).”

**CDI®** Continuous deionization process which regenerates resins with electricity by USFilter/Lowell.

**CDT** Capacitive deionization technology.

**CE rule** See “Credible Evidence rule (CE rule).”

**CE-Bauer** Former screening equipment supplier acquired by Andritz-Ruthner, Inc.

**Cecarbon®** Granular activated carbon by Elf Atochem North America, Inc.

**Cecasorb®** Adsorbent canisters containing activated carbon by Elf Atochem North America, Inc.

**CEDI** Continuous electrodeionization.

**Celatom®** Diatomite filter aid by Eagle-Picher Minerals, Inc.

**CELdek** Synthetic media for evaporative cooling systems by Munters.

**Celgard®** Microporous, flat sheet, and hollow fiber membranes by Celgard LLC.

**cells** (1) In solid waste disposal, holes where waste is dumped, compacted, and covered with layers of dirt on a daily basis. (2) The smallest structural part of living matter capable of functioning as an independent unit.

**cellulose acetate (CA)** A plastic material used to make the cellulosic-type semi-permeable reverse osmosis membranes.

**Celsius (C)** The SI temperature scale on which 0° is the freezing point and 100° is the boiling point of water. Often referred to as the “centigrade” scale.

**CEM** See “continuous emissions monitoring (CEM).”

**CEMA** Conveyor Equipment Manufacturers Association.

**CEMcat™** Continuous emissions monitor by Advanced Sensor Devices, Inc.

**cement** A powder that when mixed with water binds a stone and sand mixture into strong concrete when dry.

**cement kiln dust** Alkaline material produced during the manufacture of cement that may be used to stabilize sludge.

**cementing** The process of pumping a cement slurry into a drilled hole and/or forced behind the casing.

**CEMS** Continuous emissions monitoring systems.

**Censys™** Water and wastewater treatment products by USFilter/Lowell.

**Centaur®** Activated carbon by Calgon Carbon Corp.

**Centers for Disease Control (CDC)** A U.S. Department of Health agency responsible for surveillance of disease patterns, developing disease control and prevention procedures, and public health education.

**Center-Slung** Basket centrifuge by Baker Process/Ketema.

**centigrade** Colloquial term for the Celsius scale of temperature measurement.

**centipose** A unit of the dynamic viscosity of a liquid. The dynamic viscosity of water at 20°C is 1 centipose.

**Centrac** Metering pump by Milton Roy Co.

**Centra-flo™** Continuously backwashed gravity sand filter by Applied Process Technology, Inc.

**centrate** The liquid remaining after solids have been removed in a centrifuge.

**Centri-Cleaner<sup>®</sup>** Liquid cyclone by Andritz-Ruthner, Inc.

**Centrico** Sludge dewatering decanter centrifuge by Westfalia Separator, Inc.

**Centridry<sup>®</sup>** Biosolids dewatering and drying process by Baker Process.

**CentriField<sup>®</sup>** Wet scrubber by Entoleter, Inc.

**centrifugal collector** A mechanical system using centrifugal force to remove aerosols from a gas stream or to dewater sludge.

**centrifugal pump** A pump with a high speed impeller that relies on centrifugal force to throw incoming liquid to the periphery of the impeller housing where velocity is converted to head pressure.

**centrifugation** The use of centrifugal force to separate solids from liquids based on density differences.

**centrifuge** A dewatering device relying on centrifugal force to separate particles of varying density such as water and solids.

**Centripress<sup>®</sup>** Solid bowl centrifuge by Baker Process.

**CentROL<sup>®</sup>** Gravity cluster sand filter by USFilter/General Filter.

**Centrox<sup>®</sup>** Aspirating aerators by Hazleton Environmental, Inc.

**CEQ** Council on Environmental Quality.

**Cerabar** Pressure transmitter by Endress+Hauser.

**Ceraflo<sup>®</sup>** Ceramic membrane filters by USFilter/General Filter.

**CeramicA** Ceramic filter tube by Coors Ceramics Co.

**CERCLA** Comprehensive Environmental Response, Compensation, and Liability Act. Also known as Superfund.

**CERMS** Continuous emissions rate monitoring system.

**cesspool** A covered tank with open joints constructed in permeable soil to receive raw domestic wastewater and allow partially treated effluent to seep into the surrounding soil while solids are contained and undergo digestion.

**CETCO** Colloid Environmental Technologies Co.

**CETCO<sup>TM</sup>floc** Specialty water treatment chemicals by Colloid Environmental Technologies Co.

**CF200<sup>TM</sup>** Fine band screen by Brackett Geiger.

**CFB** Circulating fluidized bed.

**CFC** See “chlorofluorocarbon (CFC).”

**CFR** Code of Federal Regulations.

**cfs** Cubic feet per second.

**CFSTR** Continuous flow, stirred-tank reactor.

**CFU** See “colony forming units (CFU).”

**CGMP** Current good manufacturing practice.

**Chabelco** Chain products marketed by USFilter/Envirex.

**chain and flight collector** A sludge collector mechanism utilized in rectangular sedimentation basins or clarifiers.

**chain of custody** The documentation maintained regarding all personnel involved in the handling, storage, and analysis of hazardous waste samples from the point where samples are prepared though the point of final disposal.

**Chainbelt** Former name of USFilter/Envirex parent company.

**Chainsaver Rim** Sludge collector sprockets with wear rim by Jeffrey Chain Corp.  
**chamber** A compartment or space enclosed by walls; often prefixed by a descriptive word indicating its function, such as grit chamber, screen chamber, discharge chamber, or flushing chamber.

**channel** (1) A perceptible natural or artificial waterway that contains moving water or forms a connecting link between two bodies of water. (2) The deep portion of a river or waterway where the main current flows. (3) The part of a body of water deep enough to be used for navigation through an area otherwise too shallow for navigation.

**Channel Flow** Sewage disintegrator by C&H Waste Processing.

**Channel Master**<sup>®</sup> Fine screen by Hans Huber GmbH.

**Channel Mitt**<sup>™</sup> Shaftless spiral screening and dewatering device by WesTech Engineering Inc.

**Channel Monster**<sup>®</sup> In-channel solids reduction unit by JWC Environmental.

**Channel Piranha** Sewage shredder by ZMI/Portec Chemical Processing.

**ChannelAire**<sup>™</sup> Submersible aerator/mixer by ABS Pumps, Inc.

**channeling** A condition that occurs in a filter or other packed bed when water finds furrows or channels through which it can flow without effective contact with the bed.

**char** To reduce to charcoal by burning.

**characteristic hazardous waste** A waste material declared hazardous because it exhibits ignitable, corrosive, reactive, or toxic characteristics.

**charge density** In a polyelectrolyte, the charge density is the mole ratio of the charged monomers to noncharged monomers.

**Chargepac**<sup>®</sup> Coagulant used in water and wastewater treatment by Ashland Chemical, Drew Industrial.

**Charles' Law** The volume of gas at constant pressure varies in direct proportion to the absolute temperature.

**check valve** A valve that opens in the direction of normal flow and closes with flow reversal.

**Check Well** Well level measuring device by Drexelbrook Engineering Company.

**chelating agent** A compound that is soluble in water and combines with metal ions to keep them in solution. See also "sequestering agent."

**chelation** A chemical complexing of metallic cations with organic compounds to prevent precipitation of the metals. See also "sequestration."

**Chem-Clean**<sup>®</sup> Grease and oil removal system for tertiary filtration by USFilter/Zimpro.

**Chem-Feed**<sup>®</sup> Chemical metering injection pump by Blue-White Industries.

**Chem-Fine**<sup>™</sup> Pleated filter cartridge by USFilter/Filtration & Separation.

**Chem-Flex**<sup>®</sup> Portable holding tank by Aero Tec Laboratories, Inc.

**Chem-Gard**<sup>®</sup> Direct and magnetically driven centrifugal pumps by Vanton Pump & Equipment Corp.

**chemical feeder** A device used to dispense chemicals at a predetermined rate.

**chemical fixation** The transformation of a chemical compound to a new, nontoxic form.



**chemical oxidation** The oxidation of compounds in water or wastewater by chemical means. Typical oxidants include ozone, chlorine, or potassium permanganate.

**chemical oxygen demand (COD)** A measurement of biodegradable and nonbiodegradable (refractory) organic matter, widely used as a means of measuring the strength of domestic and industrial wastewaters.

**chemical sludge** Sludge resulting from chemical treatment processes of inorganic wastes which are not biologically active.

**chemical treatment** Any water or wastewater treatment process involving the addition of chemicals to obtain a desired result such as precipitation, coagulation, flocculation, sludge conditioning, disinfection, or odor control.

**chemically emulsified oil particles** These are usually less than 1 micron in size and will not separate or rise to the surface no matter how much time is allowed.

**Chemidisk™** Rotating biological contactor by CMS Group, Inc.

**Cheminjector-D®** Diaphragm-metering pump by PennProcess Technologies, Inc.

**chemisorption** The formation of an irreversible chemical bond between the sorbate molecule and the surface of the adsorbent.

**Chemix** Dry polymer mixing and feeding unit by Semblex, Inc.

**chemnet** Mutual aid network of chemical shippers and contractors who assign a contracted emergency response company to provide technical support if a representative of the firm whose chemicals are involved in an incident is not readily available.

**chemocline** A zone of a lake or reservoir in which the concentration of dissolved substances changes rapidly with depth.

**Chemomat** Electrochemical membrane cell separation system by Ionics, Inc.

**chemostat** An apparatus designed to grow bacteria cultures at controlled rates.

**chemosterilant** A chemical that controls pests by preventing reproduction.

**chemotrophs** Organisms that extract energy from organic and inorganic oxidation/reduction reactions.

**Chem-Scale™** Weighing scale for vertical chemical tanks by Force Flow Equipment.

**ChemScan** Process analyzers by Applied Spectrometry.

**ChemSensor®** VOC monitor by Osmonics, Inc.

**ChemSpec®** Air sampler by Rupprecht & Patashnick Inc.

**Chemterc** The industry-sponsored Chemical Transportation Emergency Center which provides information and/or emergency assistance to emergency responders.

**Chem-Tower®** Bulk chemical feeding unit by Smith & Loveless, Inc.

**Chemtrac®** Streaming current monitoring systems by Chemtrac Systems, Inc.

**Chemtube®** Diaphragm-metering pump by USFilter/Wallace & Tiernan.

**Chernobyl** Ukrainian town that was the site of a 1986 nuclear power plant accident where radiation to the environment was released.

**Chevron™** Clarifier tube settlers by USFilter/Warren.

**Chicago Pump** Product group of Yeomans Chicago Corp.

**chicane** A plow or other obstacle used on a belt thickener or belt press to mix or turn sludge to facilitate sludge dewatering.

**chimney effect** The tendency of air or gas in a vertical passage to rise when it is heated because its density is lower than the surrounding air or gas.

**Chi-X®** Odor control product by NuTech Environmental Corp.

**chloramines** Disinfecting compounds containing nitrogen, chlorine, and hydrogen formed by the reaction between hypochlorous acid, ammonia, and/or organic amines in water. Also called “combined available chlorine.”

**Chlor-A-Vac™** Gas induction systems by Capital Controls Co.

**Chlorgen+™** Chlorine gas generator by Inchen USA, Inc.

**chloride** (1) The ionic form of the element chlorine where the atom has gained one electron, whose chemical symbol is Cl<sup>-</sup>. (2) Any salt containing the Cl<sup>-</sup> anion.

**chlorinated** (1) The condition of water or wastewater that has been treated with chlorine. (2) A description of an organic compound to which chlorine atoms have been added.

**chlorination** The addition of chlorine to a water or wastewater, usually for the purpose of disinfection.

**chlorinator** A metering device used to add chlorine gas or solutions to water or wastewater.

**chlorine** An oxidant commonly used as a disinfectant in water and wastewater treatment. Chemical formula is Cl<sub>2</sub>.

**chlorine contact chamber** A detention chamber to diffuse chlorine through water or wastewater while providing adequate contact time for disinfection.

**chlorine demand** The difference in the amount of chlorine added to a water or wastewater and the amount of residual chlorine remaining after a specific contact duration, usually 15 minutes.

**chlorine dose** The amount of chlorine applied to a liquid, usually expressed in milligrams per liter (mg/L) or pounds per million gallons (lb/mil gal).

**chlorine residual** The amount of chlorine remaining in water after application at some prior time; the difference between the total chlorine added and that consumed by oxidizable matter. See “free chlorine residual.”

**chlorine tablets** Common term for pellets of solidified chlorine compounds such as calcium hypochlorite used for water disinfection.

**chlorine toxicity** The detrimental effects on biota caused by the inherent properties of chlorine.

**chlorite** Any salt of chlorous acid containing the monovalent radical ClO<sub>2</sub>.

**ChlorMaster™** Sodium hypochlorite generation system by Pepcon Systems, Inc.

**Chloro-Cat™** Catalytic oxidizer by Global Technologies.

**chlorofluorocarbon (CFC)** Ozone-depleting compounds containing carbon and one or more halogens, usually fluorine, chlorine, or bromine which have been used as commercial refrigerants and propellants in aerosol sprays.

**chloroform** A trihalomethane formed by the reaction of chlorine and organic material in water. Chemical formula is CHCl<sub>3</sub>.

**Chloromatic** Electrolytic chlorine generator by Brinecell, Inc.

**Chloropac®** Hypochlorite generation system by USFilter/Electrocatalytic.

**chlorophenoxy** A class of herbicides that may be found in domestic water supplies and may cause adverse health effects.

**chlorosis** Discoloration of normally green plant parts caused by disease, lack of nutrients, or various air pollutants.

**Chlor-Scale™** Weighing device for chlorine ton containers by Force Flow Equipment.

**Chlortrol** Residual chlorine analyzer by Bailey-Fischer & Porter.

**cholera** An acute, highly infectious disease of the gastrointestinal tract caused by the waterborne bacterium *Vibrio cholerae*.

**cholinesterase** An enzyme necessary to control the proper transmission of nerve impulses within the body, and whose inhibition is characteristic of the toxicity of some classes of pesticides, e.g., organophosphates.

**chopper pump** Pump that chops solids between the impeller and fixed cutter bar.

**C-horizon** The unaltered soil layer underlying the B-horizon containing a minimum of soil fauna and flora.

**chromatography** The separation of a mixture into its component compounds according to their relative affinity for a solvent system or column media.

**Chromaver** Chemical reagents used to determine presence of chromates in solutions by Hach Company.

**chromium** See “heavy metals.”

**chronic effect** An adverse effect on a human or animal in which symptoms recur frequently or develop slowly over a long period of time.

**chronic toxicity test** Test method used to determine the concentration of a substance that produces an adverse effect on a test organism over an extended period of time.

**Ci** See “curie (Ci).”

**CICA** Confederation of International Contractors Association.

**Cide-Trak™** Biocide monitoring system by Azur Environmental.

**CIP** See “clean-in-place (CIP).”

**Cipolletti weir** A weir having a trapezoidal-shaped notch.

**circle of influence** The circular outer edge of a depression produced in the water table by the pumping of water from a well. See also “cone of influence” and “cone of depression.”

**Circox®** High-rate aerobic reactor by CBI Walker, Inc.

**CirculAire™** Aspirating aerator by Aeration Industries, Inc.

**Circuline** Circular sludge collector product line by USFilter/Envirex.

**Circumfed** Dissolved air flotation unit by Tenco Hydro, Inc.

**cistern** A small covered tank for storing water, usually placed underground.

**CITES** Convention on International Trade in Endangered Species.

**citric acid** A crystalline acid present in citrus fruits. Chemical formula is  $C_6H_8O_7 \cdot H_2O$ .

**CIWEM** The Chartered Institution of Water and Environmental Management. Also known as “IWEM.”

**CIX™** Ion exchange wastewater treatment/metals recovery system by Kineticco Engineered Systems, Inc.

**Cl<sub>2</sub>** See “chlorine.”

**CLAM®** Cleansimatic liquid analysis meter by Monitek Technologies, Inc.

**Clar+Ion®** Cationic coagulants and flocculants by General Chemical Corp.

**Claraetor** Circular clarifier with aeration compartment formerly offered by GL&V/Dorr-Oliver, Inc.

**ClarAtor®** Clarifier technology by Waterlink/Aero-Mod Systems.

**Claribloc**<sup>®</sup> Compact physical/chemical water treatment plant by USFilter/Krüger (North America) and OTV.

**ClariCone**<sup>™</sup> Solids contact clarifier by CBI Walker, Inc.

**clarification** Any process or combination of processes whose primary purpose is to reduce the concentration of suspended matter in a liquid.

**clarifier** A quiescent tank used to remove suspended solids by gravity settling. Also called sedimentation or settling basins, they are usually equipped with a motor driven chain and flight or rake mechanism to collect settled sludge and move it to a final removal point.

**Clariflo**<sup>®</sup> Water and wastewater treatment process technology by USFilter/Krüger (North America) and OTV.

**Clari-Float**<sup>®</sup> Package wastewater treatment plant including dissolved air flotation by Tenco Hydro, Inc.

**ClariFloc**<sup>®</sup> Polyelectrolyte used to enhance liquid/solid separation by Polydyne, Inc.

**Clariflocculator** Combination clarifier and flocculator by GL&V/Dorr-Oliver, Inc.

**ClariFlow** Upflow clarifier products by Walker Process Equipment.

**Clarigester** Two-story tank combining clarification and digestion by GL&V/Dorr-Oliver, Inc.

**Clarion**<sup>®</sup> Absorption media by Colloid Environmental Technologies Co.

**Claripak** Upflow, inclined plate clarifier by USFilter/Aerator Products.

**Clarisep**<sup>™</sup> Oily wastewater ultrafiltration system by Pall Corp.

**ClariShear**<sup>™</sup> Floating sludge collector by Techniflo Systems.

**ClariThickener**<sup>™</sup> Combination clarifier and thickener by Baker Process.

**Clari-Trac**<sup>®</sup> Track-mounted siphon sludge removal system for rectangular clarifiers by F.B. Leopold Co., Inc.

**Clari-Vac**<sup>®</sup> Floating bridge type siphon sludge removal unit for rectangular clarifiers by F.B. Leopold Co., Inc.

**Clar-i-vator**<sup>®</sup> Solids contact clarifier by Smith & Loveless, Inc.

**Clar-O-Floc**<sup>™</sup> Hopper-bottom clarifier by Alar Engineering Corp.

**Clar-Vac** Induced and dissolved air flotation systems by Dontech, Inc.

**classifier** A device used to separate constituents according to relative sizes or densities.

**clathrate** A compound formed by the inclusion of molecules in cavities formed by crystal lattices.

**clay** A fine-grained earthy material that is plastic when wet, rigid when dried, and vitrified when fired to high temperatures.

**clay liner** A layer of low permeability soil added to the bottom and sides of an earthen basin for use as a disposal site or pond to limit infiltration to the underlying rock and soil strata.

**ClaySorb** Granular, organically modified clay filtration medium for removing emulsified oil and grease by TurnKey Solutions, Inc.

**Clean Air Act (CAA)** U.S. Federal law requiring the EPA to set air pollutant emission standards.

**Clean Air Act Amendments (CAAA)** Amendments issued in 1990 to expand the EPA's enforcement powers and place restrictions on air emissions.

**Clean Chemicals** High purity chemicals for laboratory use only by Hach Company.

**clean fuels** Blends or substitutes for gasoline fuels, including compressed natural gas, methanol, ethanol, liquefied petroleum gas, and others.

**Clean Shot** Pneumatic solids delivery system by USFilter/CPC.

**Clean Squeeze™** Screenings washer and compactor by Schreiber Corp.

**Clean Water Act (CWA)** 1972 U.S. federal law regulating surface water discharges; updated in 1987.

**Clean-A-Matic** Self-cleaning basket strainer by GA Industries, Inc.

**clean-in-place (CIP)** A method of cleaning a filter medium or membrane to restore its performance without removing it from the system.

**Cleantec** Grit recycling system by Brackett Geiger.

**clear cutting** The practice of completely felling a stand of trees, usually followed by the replanting of a single species.

**Clear View™** Continuous emissions monitoring system by Goal Line Environmental Technologies.

**Clearcon** Circular clarifier product line by Vulcan Industries, Inc.

**Clearflo** Cylindrical clarifier by Roberts Filter Group.

**Clear-Flow™** Solids contact clarifier by Hi-Tech Environmental, Inc.

**Clearigate** Algaecide by Applied Biochemists, Inc.

**clearwell** A tank or reservoir of filtered water used to backwash a filter.

**Climber®** Reciprocating rake bar screen by Infilco Degremont, Inc. (USA) and Brackett Geiger (Europe).

**ClimbeRack™** Bar screen gear rack that eliminates need for lubrication by Infilco Degremont, Inc.

**clinker** A fused byproduct of the combustion of coal or other solid fuels.

**clino** See “clinoptilolite.”

**clinoptilolite** A naturally-occurring clay that can be used in an ion exchange process for ammonia removal.

**Cloromat®** Sodium hypochlorite generator by Ionics, Inc.

**ClorTec®** Hypochlorite-generating systems by ClorTec.

**close-coupled pump** A pump coupled directly to a motor without gearing or belting.

**closed cycle cooling system** A cooling water system in which heat is transferred by recirculating water contained within the system, producing a relatively small blowdown stream of concentrated solids.

**Clostridium botulinum** Anaerobic microbe that causes botulism.

**closure plan** Written plan to decommission and secure a hazardous waste management facility.

**cloud** A mass of small water droplets in the atmosphere which is not of sufficient size to fall to the earth.

**Cloud Chamber Scrubber™** Wet scrubber technology by Tri-Mer Corp.

**cloud seeding** The artificial introduction of chemicals such as silver iodide or dry ice into clouds to induce rain.

**CLP** Contract laboratory program.

**CLR Process** Closed loop reactor oxidation ditch process by Lakeside Equipment Corp.

**Cluster Rules** An industry-specific, integrated regulation that controls the release of both air and water pollutants.

**CMA** Chemical Manufacturers Association.

**CMF** Continuous microfiltration process.

**CMF-S** Continuous microfiltration system by USFilter/Memcor.

**CMP** Chemical mechanical polishing.

**CO** Carbon monoxide.

**CO<sub>2</sub>** See “carbon dioxide.”

**Coagblender** Turbine type in-line and open channel mixers by USFilter/Aerator Products.

**coagulant** A chemical added to initially destabilize, aggregate, and bind together colloids and emulsions to improve settleability, filterability, or drainability.

**coagulant aid** A material that improves the effectiveness of a coagulant by forming larger or heavier particles, speeds the reactions, or permits reduced coagulant dosage. Often referred to as a “flocculant.”

**coagulation** The destabilization and initial aggregation of finely divided suspended solids by the addition of a polyelectrolyte or a biological process.

**coal gasification** The conversion of solid coal to a gas mixture to be used as fuel.

**coal pile runoff** Rainfall runoff from or through a coal storage pile.

**coalesce** The merging of two droplets to form a single, larger droplet.

**Coanda effect** The tendency of a liquid coming out of a nozzle or orifice to travel close to the wall contour even if the wall curves away from the jet’s axis.

**Coanda Tulip<sup>®</sup>** Clarifier inlet distributor by Hans Huber GmbH.

**coarse bubble aeration** An aeration system that utilizes submerged diffusers which release relatively large bubbles.

**coarse sand** Sand particles, usually larger than 0.5 mm.

**coarse screen** A screening device, usually having openings greater than 6 mm (0.25”).

**coastal reclamation** Reclaiming land from shallow coastal areas of the sea by dumping rubble and refuse or constructing breakwaters, sea walls, and drainage of the enclosed area.

**Coastal Zone Management Act (CZMA)** Act requiring all federal agencies and permittees who conduct activities affecting a state’s coastal zone to comply with an approved state coastal zone management program.

**COC** See “cycles of concentration (COC).”

**cocci** Sphere-shaped bacteria.

**COD** See “chemical oxygen demand (COD).”

**CODcr** Notation used for “chemical oxygen demand” as determined using potassium dichromate and sulfuric acid.

**CodeLine<sup>™</sup>** Membrane pressure vessel housing by Advanced Structures, Inc.

**codisposal** A method of sludge disposal where the sludge is mixed with sludges from different processes or with sorted refuse and incinerated, composted, or treated by pyrolysis prior to final disposal.

**CODmn** Notation used for “chemical oxygen demand” as determined using permanganate.

**coefficient** A numerical quantity, determined by experimental or analytical methods, interposed in a formula that expresses the relationship between two or more variables to include the effect of special conditions or to correct a theoretical relationship to one found by experiment or actual practice.

**coefficient of haze (COH)** A measure of air visibility determined by the darkness of the stain remaining on white paper after it has been used to filter air.

**Coex Seal™** Containment liner by National Seal Co.

**cofferdam** A temporary dam, usually of sheet piling built to provide access to an area that is normally submerged.

**Co-fire** Burning of two fuels in the same combustion unit, e.g., coal and natural gas or oil and coal.

**Cog Rake** Reciprocating rake bar screen by USFilter/Headworks Products.

**CogBridge** Traveling bridge sludge collector by Walker Process Equipment.

**cogen** See “cogeneration.”

**cogeneration** A power system that simultaneously produces both electrical and thermal energy from the same source.

**COH** See “coefficient of haze (COH).”

**cohort** People assembled on the basis of a common characteristic and followed or traced over a period of time.

**cohort study** An epidemiological study where population subgroups with a common exposure to a suspected disease-causing agent are studied over time to determine the risk of developing disease.

**Coilfilter** Rotary vacuum belt filter by Komline-Sanderson Engineering Corp.

**coke** The solid carbon residue resulting from the distillation of coal or petroleum.

**coke oven** An industrial process which converts coal into coke, one of the basic materials used in blast furnaces for the conversion of iron ore into iron.

**coke tray aerator** An aerator where water is sprayed or flows over coke-filled trays.

**cold lime-soda softening** Lime-soda softening process of water treatment at ambient temperatures.

**coliform bacteria** A group of rod-shaped bacteria living in the intestines of humans and other warm-blooded animals and shed in their fecal material, and whose presence in water indicates that the water has received contamination of an intestinal origin.

**coliform index** A rating of the purity of water based on a count of fecal bacteria.

**Colilert®** Reagent used to detect and identify coliforms and *E. coli* by IDEXX Laboratories, Inc.

**coliphage** A bacterial virus that uses *E. coli* as its host cell.

**ColiSure** Coliform presence/absence test medium by Millipore Corp.

**Collectaire** Airlift activated sludge removal system formerly offered by USFilter/Envirex.

**collection main** The public sewer to which a building service or individual system is connected.

**collection system** In wastewater, a system of conduits, generally underground pipes, that receives and conveys sanitary wastewater and/or storm water. In

water supply, a system of conduits or canals used to capture a water supply and convey it to a common point.

**collector chain** Chain used to convey the scraper in a rectangular sludge collector.

***Collision Scrubber***<sup>TM</sup> Air pollution control scrubber by Monsanto Enviro-Chem Systems, Inc.

**colloid** Suspended solid with a diameter less than one micron that can not be removed by sedimentation alone.

***Colloidair Separator***<sup>TM</sup> Open basin DAF by USFilterCorp.

**colloidal** Resembling or made up of colloids.

**colmatage** The reversible portion of flux decline in a membrane separation system.

**colony forming units (CFU)** The number of bacteria present in a sample as determined in a laboratory plate count test where the number of visible bacteria colony units present are counted.

**color** Water condition resulting from presence of colloidal material (see “apparent color”) or organic matter (see “true color”) measured by visual comparison with lab prepared standards.

**color throw** The discharge of color to the effluent of a filter or ion exchange system.

**color units (CU)** The unit used to report the color of water.

**colorimeter** A photoelectric instrument used to measure the amount of light of a specific wavelength absorbed by a solution.

***Color-Katch***<sup>TM</sup> Flocculant/coagulant by Kem-Tron.

***ColOX***<sup>TM</sup> Fixed film aerobic bioreactor system by Tetra Process Technologies.

***Combi***<sup>®</sup> Self-contained, prefabricated headworks system by Waterlink Separations, Inc.

***Combi-Guard*** Packaged screening unit by Andritz Sprout-Bauer S.A.

**combination chain** Chain used in conveyor applications having cast block links with steel pins and connecting bars.

**combined available chlorine** The concentration of chlorine combined with ammonia as chloramine, and still available to oxidize organic matter.

**combined cycle generation** A gas turbine generator system where heat from turbine generator exhaust gases are recovered by a steam generating unit whose steam is used to drive a steam turbine generator.

**combined sewer** A sewer used to receive sanitary wastewater, storm water, and surface water.

**combined sewer overflow (CSO)** Flow from a combined sewer that exceeds the capacity of the sewer system and is discharged directly to a receiving water during certain rainfall conditions.

***Combu-Changer***<sup>®</sup> Regenerative oxidizer to control VOC emissions by ABB Air Preheater, Inc.

**combustible liquid** Any liquid having a flash point at or above 38°C (100°F) and below 93°C (200°F).

**combustibles** Materials that can be ignited at a specific temperature in the presence of air to release heat.

**combustion gases** The mixture of gases and vapors produced by burning.

**combustion product** Substance produced during the burning or oxidation of a material.



**Combustrol®** Fly ash conditioning treatment technology marketed by Wheelabrator Air Pollution Control, Inc.

**Comet** Electrically driven rotary distributor for fixed film reactor by Simon-Hartley, Ltd.

**commercial waste** Solid waste from non-manufacturing establishments such as office buildings, markets, restaurants, and stores.

**commercial waste management facility** A treatment, storage, disposal, or transfer facility which accepts waste from a variety of sources, as compared to a private facility which normally manages a limited waste stream generated by its own operations.

**commercial water use** Potable water use in commercial enterprise providing salable goods or services.

**commingled recyclables** Mixed recyclables that are collected together.

**comminute** To crush, grind, or pulverize something into minute particles.

**comminutor** A circular screen with cutters that grinds large sewage solids into smaller particles.

**Common Sense Initiative (CSI)** A U.S. EPA program that encourages industry-specific, rather than pollution-specific, environmental protection measures.

**common wall construction** A construction technique where adjacent concrete basins share a common wall to reduce construction costs.

**community water system (CWS)** A public water system serving at least 25 year-round residents or having 15 or more connections used by year-round residents.

**Compact CDI®** Continuous deionization product by USFilter/Lowell.

**Compact RO** Reverse osmosis product by USFilter/Lowell.

**compaction** (1) The reduction of the bulk of solid waste by rolling and tamping.  
(2) The reduction in thickness of a filter medium or membrane as a result of pressure.

**Compaplate®** Wide-gap welded heat exchanger for high fouling service by Alfa-Laval Separation, Inc.

**compensated hardness** A calculated value based on total hardness, magnesium-to-calcium ratio, and sodium concentration used to correct for reductions in hardness removal capacity in zeolite exchange water softeners.

**competitive inhibition** The situation that occurs when two compounds compete for the same enzyme, leading to interference in metabolism of one by the other.

**Completaire** Package waste treatment plant with complete mix activated sludge formerly offered by USFilter/Envirex.

**complete treatment** A method of treating water that consists of the addition of coagulant chemicals, flash mixing, coagulation-flocculation, sedimentation, and filtration. Also called conventional filtration.

**completed test** The third and last step in the analysis of water and wastewater for the presence of fecal bacteria. Positive cultures from previous tests are inoculated and a gram stain is performed on isolated colonies.

**CompleTreator** Package trickling filter waste treatment plant formerly offered by GL&V/Dorr-Oliver, Inc.

**complexing** The formation of a complex compound.

**Compliance Assurance Monitoring rule (CAM rule)** The EPA Clean Air Act rule that lets a regulated industry select the means to demonstrate that its operation is within permit conditions.

**compliance coal** Any coal that emits less than 1.2 pounds of sulfur dioxide per million Btu when burned. Also known as “low sulfur coal.”

**compliance cycle** The 9-year calendar cycle, beginning January 1, 1993, during which public water systems must monitor. Each cycle consists of three 3-year compliance periods.

**Compliance Master™** Oil/water separator by Mercer International Inc.

**compliance schedule** A negotiated agreement between a pollution source and a government agency that specifies dates and procedures by which a source will reduce emissions and, thereby, comply with a regulation.

**Compmaster™** Composting computer process control system by USFilter/CPC.

**Component Clarifier** Standard group of clarifier components and options that can be matched with an application’s requirements by Baker Process.

**composite sample** A combination of individual samples of water or wastewater taken at preselected intervals to minimize the effect of variability of individual samples.

**compost** The end product of composting.

**Compost-A-Matic** Sludge composting system by Farmer Automatic of America, Inc.

**composting** Stabilization process relying on the aerobic decomposition of organic matter in sludge by bacteria and fungi.

**compound** A substance consisting of two or more independent elements that can only be separated by chemical reactions.

**Compound 146** Polyurethane material used for sprocket tooth insert by USFilter/Rex & Link-Belt Products.

**compression settling** Phenomenon referring to sedimentation of particles in a concentrated suspension where further settling can occur only by compression of the existing structure of settled particles. Also called “type IV settling.”

**compressor** A mechanical device used to increase the pressure of a gas or vapor.

**concentration** (1) The amount of a substance dissolved or suspended in a unit volume of solution. (2) The process of increasing the amount of a substance per unit volume of solution.

**concentration factor** A number indicating the number of times a solution may be concentrated.

**concentration polarization** A phenomenon in which solutes form a dense, polarized layer next to a membrane surface which eventually restricts flow through the membrane.

**concentration ratio** The ratio of the concentration of solids in a water system to those of the dilute makeup water added to the system.

**Concord™** Catalytic incinerators by Catalytic Products International.

**concrete** A mixture of water, sand, stone, and a binder that hardens to a stone-like mass.

**condensate** Water obtained by evaporation and subsequent condensation.

**condensate polishing** Treatment of condensate water to achieve required purity.

**condensation** The change in state from vapor to liquid; the opposite of evaporation.

**Condense-A-Hood** Air/odor collecting hoods by Bedminster Bioconversion Corp.

**condenser** A heat transfer device used to cool steam and convert it from the vapor to liquid phase.

**Conden-Sorb™** VOC abatement system by M&W Industries, Inc.

**conditioning** Pretreatment of a wastewater or sludge, usually by means of chemicals, to facilitate removal of water in a subsequent thickening or dewatering process.

**conductance** (1) A measure of a solution's electrical conductivity that is equal to the reciprocal of the electrical resistance. (2) A rapid method of estimating the dissolved-solids content of a water sample by determining the capacity of a water sample to carry an electrical current.

**conduction** The transfer of heat from one body to another by direct contact.

**conductivity** The ability of a substance to conduct electricity; directly related to the mineral content of water.

**cone of depression** A depression in the water table that develops around a pumped well.

**cone of influence** The depression, roughly conical in shape, produced in the water table by the pumping of water from a well.

**Cone Screen** Internally fed rotary fine screen by Andritz-Ruthner, Inc. (Western Hemisphere) and USFilter/Contra-Shear.

**Conesep™** External regeneration technology for ion exchange systems by Glegg Water Conditioning Co.

**confidence interval** A computed interval with a specified probability that contains the estimated value of a parameter.

**Configurator®** Computerized process design and equipment selection tool by USFilter/Rockford.

**confined aquifer** An aquifer in which groundwater is confined under pressure which is significantly greater than atmospheric pressure.

**confined space** A potentially hazardous space which has limited openings for entry and exit, unfavorable natural ventilation, and/or is not designed for continuous worker occupancy.

**confirmed test** The second of three steps in the analysis of water and wastewater for the presence of fecal bacteria. Positive cultures from the first, "presumptive test," are inoculated and examined for fermentation after incubation. If fermentation is present, a third stage, the "completed test," is performed.

**confluence** The point where the flow of streams or rivers meet.

**confluent growth** A continuous bacterial growth covering the filtration area of a membrane filter, in which bacterial colonies are not discrete.

**congeal** To thicken, jell, or solidify, usually by cooling or freezing.

**congenital** Existing at or before birth, usually referring to an abnormal trait or disorder.

**conjunctive use** The combined management of surface and groundwater supplies to provide a greater yield and/or more stable cost structure than operating two independent supplies.

**connate water** Water trapped in sedimentary rocks during their formation, also known as "fossil water."

**Conoscreen** Rotating disc microscreen by Nuove Energie.

**consent decree** A binding agreement by two parties in a lawsuit which settles all questions raised in the case and does not require additional judicial action.

**conservation** The careful and organized management and use of natural resources.

**Conservation Reserve Enhancement Program (CREP)** The U.S. Department of Agriculture program which gives farmers financial incentives for instituting conservation practices on their land.

**Consolidated Electric** Product group integrated within USFilter/Control Systems.

**constant-rate filtration** Filter operation where flow through the filter is maintained at a constant rate by an adjustable effluent control valve.

**constructed conveyance** Artificial waterways including ditches, culverts, flumes, canals, or natural waterbodies that are altered by humans.

**consumptive waste** Water that returns to the atmosphere without beneficial use.

**ContaClarifier™** Upflow buoyant media clarifier by Roberts Filter Group.

**Contac-Pac** Circular steel contact aeration package waste treatment plant formerly offered by USFilter/Envirex.

**contact condenser** A device in which steam is condensed through direct contact with a cooling liquid.

**contact flocculation** A water treatment process in which coagulated water passes through a coarse media to enhance floc formation prior to filtration or sedimentation.

**contact pesticide** A chemical that kills pests when it touches them instead of when it is ingested.

**contact process** Wastewater treatment process where diffused air is bubbled over fixed media surfaces.

**contact stabilization process** Modification of the activated sludge process where raw wastewater is aerated with activated sludge for a short time prior to solids removal and continued aeration in a stabilization tank. Also called “biosorption process.”

**contact time** The time in which a chemical is in contact with another reacting chemical or constituent.

**Container Filter** Sedimentation basin by Flo Trend Systems, Inc.

**contaminant** Any foreign component present in another substance.

**contamination** The degradation of natural water, air, or soil quality resulting from human activity.

**Cont-Flo™** Back cleaned reciprocating rake bar screen by John Meunier, Inc.

**continental divide** A watershed boundary separating rivers flowing in one direction from those flowing in an opposite direction.

**continental drift** A theory that continents shift their positions as a result of currents in the molten rocks of the earth’s mantle.

**Continental®** Water treatment products and systems by USFilter/Lowell.

**contingency plan** A document setting out an organized, planned, and coordinated course of action to be followed in case of fire, explosion, or release of hazardous waste constituents which could threaten human health or the environment.

**contingent valuation survey (CVS)** A survey technique for assigning value to injured natural resources based on respondents willingness to support various resources in monetary terms.

**continuous discharge** A routine release to the environment that occurs without interruption, except for infrequent shutdowns for maintenance and process changes.

**continuous emissions monitoring** The continuous measurement of pollutants emitted into the atmosphere from combustion or industrial processes.

**continuous sample** A flow of water from a particular place in a plant to the location where samples are collected for testing; may be used to obtain grab or composite samples.

**Continuous-Flo** Traveling bridge filter by USFilter/Zimpro.

**contract labs** Laboratories under contract to the EPA that analyze samples taken from waste, soil, air, and water or carry out research projects.

**contract operations** Private operation of municipal facilities such as water and wastewater treatment plants.

**contracted weir** A rectangular notched weir having a crest width narrower than the channel within which it is installed.

**Contraflo**<sup>®</sup> Solids contact reactor clarifier by USFilter/General Filter.

**Contraflux**<sup>®</sup> Countercurrent-activated carbon adsorption unit by Graver Co.

**contrail** A visible trail of cloud-like condensed water vapor often forming in the wake of an airplane flying in clear skies. Also called a “vapor trail.”

**Contra-Shear**<sup>®</sup> Screening equipment product line by Andritz-Ruthner, Inc. (Western Hemisphere) and USFilter/Contra-Shear.

**Contreat**<sup>®</sup> Aerobic wastewater treatment package plant by EnviroSystems Supply.

**control technique guidelines (CTG)** EPA documents issued to assist state and local pollution control authorities to achieve and maintain air quality standards for certain sources through reasonably available control technologies.

**controlled reaction** A chemical reaction under temperature and pressure conditions maintained within safe limits to produce a desired product or process.

**convection** The transfer of heat by a moving fluid such as air or water.

**conventional systems** Systems that have been traditionally used to collect municipal wastewater in gravity sewers and convey it to a central primary or secondary treatment plant prior to discharge to surface waters.

**conversion** See “recovery.”

**Convertofuser**<sup>®</sup> Wide band coarse bubble diffuser with fine sheath by USFilter/Diffused Air Products Group.

**conveyance loss** Water loss in pipes, channels, conduits, or ditches by leakage or evaporation.

**cooling pond** A pond where water is cooled by contact with air prior to reuse or discharge.

**cooling tower** An open water recirculating device that uses fans or natural draft to draw or force ambient air through the device to cool warm water by direct contact.

**cooling tower blowdown** A sidestream of water discharged from a cooling tower recirculation system to prevent scaling or precipitation of saturated salts or minerals.

**cooling water** Water used, usually in a condenser, to reduce the temperature of liquids or gases.

**COP™** Clarifier optimization program by WesTech Engineering, Inc.

**Copa CSO Screen** CSO screen by Waste-Tech, Inc.

**Copa Screen** Packaged screening and dewatering unit by Longwood Engineering Co, Ltd.

**CopaClarifier** Secondary clarifiers with filter brushes by Copa Group.

**Copa-NILL** Tipping bucket CSO tank flush system by Waste-Tech, Inc. (U.S.) and Copa Group (U.K.).

**Copasacs** Fine screening sack by NSW Corp. (U.S.) and Copa Group (U.K.).

**Copasocks** Sock-type screening sack by Copa Group.

**Copatrawl** Sock-type screening sack by NSW Corp. (U.S.) and Copa Group (U.K.).

**Copawash** Rotating boom wash system for stormwater tanks by Waste-Tech, Inc. (U.S.) and Copa Group (U.K.).

**CopaWets** Chemical coagulation and flocculation process for wastewater treatment by Copa Group.

**coping** The top or covering of an exterior masonry wall.

**Coplastix®** Synthetic composite sluice gates and stop logs by Ashbrook Corp. (U.S.) and Simon-Hartley, Ltd. (U.K.).

**copper sulfate** Chemical used for algae control, also called “blue vitriol.” Chemical formula is  $\text{CuSO}_4$ .

**copperas** Common name for ferrous sulfate heptahydrate, a common coagulant. Chemical formula is  $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ .

**copper-nickel** A copper alloy containing 10 to 30% nickel to increase resistance to corrosion and stress corrosion cracking.

**coral** Calcium carbonate skeletal structures of the *Anthozoa* class of marine polyps often deposited in large masses forming reefs and atolls in tropical seas.

**coral reef** A ridge composed primarily of coral lying at or near the surface of a tropical sea.

**Core Separator** Particulate control device for gaseous emissions by LSR Technologies, Inc.

**corner sweep** Scraper used to remove sludge from the corner of a square clarifier.

**corona** (1) The layer of ionized gas surrounding the sun. (2) A sometimes visible electric discharge resulting from a partial electric breakdown in a gas.

**corona discharge method (CD)** A method of producing ozone where air or oxygen is passed between two electrodes and the subsequent application of a high voltage results in a corona discharge, producing ozone as a result of power dissipation.

**Corosex®** Processed magnesia used in filters to neutralize acidity by Clack Corp.

**Cor-Pak®** Catalytic oxidizer system by ABB Air Preheater, Inc.

**corporate average fuel economy standard (CAFE)** A 1978 standard that enhanced the national fuel conservation effort, imposing a miles-per-gallon floor for motor vehicles.

**corrosion** Attack on material through chemical or electrochemical reaction with surrounding medium.

**corrosive** The characteristic of a chemical agent that reacts with the surface of a material causing it to deteriorate or wear away.

**corrugated plate interceptor (CPI)** Oil separation device utilizing inclined corrugated plates to separate free nonemulsified oil and water based on their density difference.

**Corten** High strength, low alloy steel with enhanced atmospheric corrosion resistance by US Steel Corp.

**corundum** See “alumina.”

**Cosmos<sup>®</sup>** Suspended solids monitoring system by GLI International.

**cost recovery** A legal process by which potentially responsible parties who contributed to contamination at a Superfund site can be required to reimburse the trust fund for money spent during any cleanup actions by the federal government.

**Costar** Product line of by Corning, Inc.

**Counter Current<sup>®</sup>** Aeration process using rotating diffusers suspended from a rotating bridge by Schreiber Corp.

**coupon test** A method of determining the rate of corrosion or scale formation by placing metal strips, or coupons, of a known weight in a tank or pipe.

**cover material** Soil or other suitable material used to cover solid wastes in a sanitary or secure landfill.

**Covertite** Clear span wastewater treatment tank cover by Thermacon Enviro Systems, Inc.

**CPC** Chemical protective clothing.

**CPC Engineering** Former name of USFilter/CPC.

**CPI** (1) See “corrugated plate interceptor (CPI).” (2) Chemical process industry.

**CPM** Critical path method.

**CPSC** Consumer Products Safety Commission.

**CPVC** Chlorinated polyvinyl chloride. A chlorinated form of PVC that provides increased heat resistance.

**cracking** A thermal process in which petroleum distillates or residues are broken down into products having lower boiling points and of altered chemical constitutions.

**cradle-to-grave** Hazardous waste management concept that attempts to track hazardous waste from its generation point (cradle) to its ultimate disposal point (grave).

**Crane<sup>®</sup>** Water treatment product line by Cochrane Inc.

**Crawler** Bar screen by Vulcan Industries, Inc.

**Credible Evidence rule (CE Rule)** The EPA Clear Air Act rule allowing industry, regulatory agencies, or the public to use any credible evidence or information to show compliance or non-compliance with emissions standards and limitations.

**creek** (1) A stream, usually flowing into a river, or serving as a natural drainage course for a basin. (2) A narrow tidal inlet through a coastal marsh.

**Crenothrix polyspora** A genus of filamentous bacteria that utilize iron in their metabolism and cause staining, plugging, and taste and odor problems in water systems. See also “iron bacteria.”

**CREP** See "Conservation Reserve Enhancement Program."

**crest gate** A gate installed on the crest of a spillway or dam used to vary the discharge.

**crevice corrosion** Localized corrosion in narrow crevices filled with liquid.

**Crisafulli** Former name of SRS Crisafulli, Inc.

**criteria pollutants** The major air pollutants, including carbon monoxide, hydrocarbons, lead, nitrogen dioxide, sulfur dioxide, ozone, and suspended particulates, for which the U.S. EPA has established ambient air quality standards.

**critical flow** The rate of flow of a fluid equal to the speed of sound in that fluid.

**critical pitting temperature** A value used to compare a material's resistance to pitting corrosion.

**critical point** The combination of pressure and temperature at which point a gas and liquid become indistinguishable.

**critical pressure** The minimum pressure necessary to liquefy a gas that is at critical temperature.

**critical temperature** The temperature above which a gas cannot be liquefied solely by an increase in pressure.

**Cromaglass** Batch treatment wastewater system by Cromaglass Corp.

**cross collector** A mechanical sludge collector mechanism extending the width of one or more longitudinal sedimentation basins, and used to consolidate and convey accumulated sludge to a final removal point.

**cross connection** A physical connection in a plumbing system through which a potable water supply could be contaminated.

**Cross/Counteflo** Inclined plate clarifier by USFilter/Zimpro.

**Cross-Flo**<sup>®</sup> Inclined static screen by Kason Corp.

**crossflow filtration** Method of filtration where the feed stream flows parallel to the surface of the filter medium and only a portion of the feed passes through the filter.

**Crossflow Fouling Index**<sup>™</sup> Membrane fouling test index by BetzDearborn-Argo District.

**crosslinkage** The degree of bonding of a monomer or set of monomers to form an insoluble, three-dimensional resin matrix.

**Crouzat**<sup>™</sup> Water treatment products and systems by USFilter Corp.

**Crown**<sup>®</sup> Self-priming sewage pump product line by Crane Pumps & Systems.

**Crown Press**<sup>™</sup> Sludge dewatering test device by Phipps & Bird.

**CRP**<sup>®</sup> Continuous recirculation sludge mixing process for anaerobic digesters by USFilter/Envirex.

**CRT** Cell residence time.

**crude oil** Unrefined petroleum as produced from underground formations.

**crumb rubber** Ground or shredded rubber produced by shredding used in automobile tires that can be recycled in asphalt-rubber or other products.

**crypto** See "*Cryptosporidium*."

**cryptosporidiosis** Gastrointestinal disease caused by the ingestion of waterborne *Cryptosporidium parvum*, often resulting from drinking water contaminated by runoff from pastures or farmland.

**Cryptosporidium** A protozoan parasite that can live in the intestines of humans and animals.



***Cryptosporidium parvum*** A species of *Cryptosporidium* known to infect humans.

**crystal** A homogenous chemical substance that has a definite geometric shape with fixed angles between its faces, having distinct edges or faces.

**Crystallactor** A device which softens water, removes phosphates, and recovers heavy metals from wastewater by DHV Water BV.

**crystalline** Having a regular molecular structure evidenced by crystals.

**crystallization** The process of forming crystals.

**crystallizer** Common term for a forced circulation evaporator.

**CSA** Canadian Standards Association.

**CSF** Coagulation, sedimentation, filtration.

**CSI** See “Common Sense Initiative (CSI).”

**CSO** Combined sewer overflow.

**CSP** Concrete surface profile.

**CSPE** Chlorosulphonated polyethylene.

**CSS<sup>TM</sup>** Wet scrubber technology by Tri-Mer Corp.

**CSTR** Completely stirred tank reactor.

**CT value** See “C × T.”

**CU** See “color units (CU).”

**cubic centimeter (cc)** A volume measurement equal in capacity to one milliliter (ml). One quart is approximately 946 cubic centimeters.

**cubic meter (m<sup>3</sup>)** A volume measurement equal to 1000 liters or 264.2 gallons. One cubic meter of water weighs approximately 1 metric ton.

**Cullar<sup>®</sup>** Activated carbon filter by Culligan International Corp.

**cullet** Crushed glass.

**Cullex** Softening resin by Culligan International Corp.

**Cullsorb** Greensand filter by Culligan International Corp.

**culm** Coal dust or anthracite tailings.

**cultural eutrophication** Increasing rate at which water bodies “die” by pollution from human activities.

**culture** A microbial growth developed by furnishing sufficient nutrients in a suitable environment.

**culvert** An enclosed channel serving as a continuation of an open stream where a stream meets a roadway or other barrier.

**cumulative exposure** The summation of exposures of an organism to a chemical over a period of time.

**cup screen** A single entry, double exit drum screen.

**cupric** Of, or containing copper.

**cupric sulfate** Copper sulfate.

**cupro-nickel** An alloy of copper containing up to 40% nickel.

**curb stop** A water service shutoff valve located in a water service pipe near the curb and between the water main and the building.

**curie (Ci)** A unit of radioactivity equal to  $3.7 \times 10^{10}$  disintegrations per second; 1 gram of radium has 1 Ci of radioactivity.

**Currie Clarifier** Circular clarifier with aeration compartment formerly offered by GL&V/Dorr-Oliver, Inc.

**curtain wall** An external wall that is not load bearing, usually referring to a wall that extends down below the surface of the water to prevent floating objects from entering a screen forebay.

**cutaneous** Relating to the skin.

**Cutrine®-Plus** Algicide/herbicide by Applied Biochemists, Inc.

**Cuver** Chemical used to detect waterborne copper by Hach Company.

**CVOC** Chlorinated volatile organic compound.

**CVS** See “contingent valuation survey (CVS).”

**CWA** See “Clean Water Act (CWA).”

**CWAs** Chemical warfare agents.

**CWS** See “community water system (CWS).”

**CW-SRF** Clean Water State Revolving Fund.

**cwt** Hundredweight.

**Cyanamer®** Scale inhibitors and dispersants by Cytec Industries, Inc.

**cyanazine** A common and potentially carcinogenic herbicide sometimes found in drinking water.

**cyanide** A compound containing a CN group, usually extremely poisonous, often used in electroplating and other chemical processes.

**Cybreak™** Emulsion breaker by Cytec Industries, Inc.

**Cycle-Let®** Wastewater treatment and recycling system by Zenon Environmental, Inc.

**cycles of concentration (COC)** The ratio of the total dissolved solids concentration in a recirculating water system to the total dissolved solids concentration of the makeup water.

**Cyclesorb®** Granular activated carbon adsorption system by Calgon Carbon Corp.

**Cyclo®** Speed reducer and gearmotor product line by Sumitomo Machinery Corp.

**Cyclo Blower** Air blower by Gardner Denver Blower Division.

**Cyclo Grit Washer** Inclined screw type grit washer and dewatering unit by Baker Process.

**Cyclo/Phram®** Rotary plunger metering pump by BIF.

**CycloClean™** Hydrocyclone separator by Krebs Engineers.

**Cyclofloc** Method for increasing clarifier rise rates by USFilter/Krüger.

**Cy-Clo-Grit** Prefabricated cyclonic grit collector by Waste-Tech, Inc.

**Cyclo-Hearth** Multiple hearth furnace by USFilter/Zimpro.

**Cyclo-Jet™** Floating self-aspirating aerator by Waterlink Biological Systems.

**Cyclone™** Coarse bubble diffuser by Aeromix Systems, Inc.

**Cyclospora** A family of protozoan organisms that are thought to cause waterborne disease.

**CycloSpray®** Fixed media filter by Lighthouse Separation Systems, Inc.

**Cyclotherm** Sludge heat exchanger by USFilter/Envirex.

**Cyclo-Treat™** Cyclone separator by USFilter/Envirex.

**Cygnat** Rotary distributor for fixed film reactor by Simon-Hartley, Ltd.

**cyst** A resting stage formed by some bacteria and protozoa in which the whole cell is surrounded by a protective layer.

**cytotoxin** Any material toxic to cells.

**CZMA** See “Coastal Zone Management Act (CZMA).”

# D

- D Tech™** Environmental field test kits by Strategic Diagnostics, Inc.
- D/DBP** Disinfectant/disinfection by product.
- D/DBP Rule (D/DBPR)** Proposed U.S. EPA rule to limit the maximum contaminant level of trihalomethanes.
- D/T level** The dilution-to-threshold level of a water sample which indicates the number of dilutions of clean, odor-free air necessary to reduce an odor to a level that most people cannot detect.
- D-20** Filter underdrain nozzle by Infilco Degremont, Inc.
- Dac Floc** Polyelectrolyte used to enhance liquid/solid separation by Dacar Chemical Co.
- DAF** See “dissolved air flotation (DAF).”
- DAFT** Dissolved air floatation thickener.
- daily cover** Cover material spread and compacted on the top and side slopes of compacted solid waste at the end of each day to control fire, moisture, and erosion and to assure an aesthetic appearance.
- Dakota** Belt filter press by HydroCal, Inc.
- DALR** Dry adiabatic lapse rate. See “adiabatic lapse rate.”
- dalton** A nominal unit of weight equal to that of a single hydrogen atom;  $1 \times 10^{-24}$  grams.
- Dalton’s Law of Partial Pressure** In a mixture of gases, each gas exerts pressure independently of the others and the pressure of each gas is proportional to the amount of that gas in the mixture.
- Dangler** Fine bubble aeration system by MixAir Technologies, Inc.
- darcy** A unit of measure used to indicate permeability, standardized by the American Petroleum Institute.
- DataGator™** Sewer flow metering system by TN Technologies, Inc.
- DataRAM™** Continuous measurement airborne particulates monitor by MIE, Inc.
- Davco** Former name of USFilter/Davco.
- Davis Process** Former name of USFilter/Davis Process.
- Davis Water & Waste** Former name of USFilter/Davco.
- Davis-D<sup>2</sup>™** Coarse bubble diffuser by USFilter/Davco.
- Davis-OM™** Oval membrane air diffuser by USFilter/Davco.
- Davy Bamag** Former name of Lurgi Bamag GmbH.
- day tank** Tank used to store chemicals or diluted polymer solution for 24 hours or less.
- dB** See “decibel (dB).”
- dBA** See “A-scale sound level (dBA).”
- DBC Plus®** Bacterial culture for wastewater treatment by Enviroflow Inc.
- DBO** Design-build-operate. A method of project implementation where a contractor is responsible for a facility’s design, construction, and long-term operation.
- DBOO** Design-build-own-operate. A method of project implementation where a contractor is responsible for a facility’s design, construction, ownership, and operation.

**DBP** See “disinfection byproduct (DBP).”

**DBP<sub>0</sub>** Instantaneous disinfection byproduct concentration.

**DBPFP** See “disinfection byproduct formation potential (DBPFP).”

**DBPP** See “disinfection byproduct precursor (DBPP).”

**DBS™** Clarifier and thickener drive units by DBS Manufacturing, Inc.

**DC** Direct current.

**D-Chlor™** Dechlorination system using sodium sulfite tablets by Exceltec International Corp.

**DCI System Six™** Open channel UV system by Bailey-Fischer & Porter.

**DCP** Dissolved concentration potential.

**DCS** See “distributed control system (DCS).”

**DDT** Dichlorodiphenyltrichloroethane. A chlorinated hydrocarbon insecticide banned in many countries because of its persistence in the environment and accumulation in the food chain.

**DDW** Distilled deionized water.

**DE** See “diatomaceous earth (DE).”

**dead storage** The stored reservoir water remaining at a level below the reservoir’s lowest discharge level, and therefore unavailable for use.

**deadleg** The part of a pipeline in which fluid does not flow and may stagnate.

**deaerator** Device used to remove dissolved gases from solution.

**dealkalization** Any process that removes or reduces alkalinity of water.

**dealkalizer** Ion exchange unit with strong anion bed used to reduce bicarbonate alkalinity.

**DeAmine™** Odor control product by NuTech Environmental Corp.

**deashing** See “demineralizing.”

**decant** Separation of a liquid from settled solids by pouring or drawing off the upper layer of liquid after the solids have settled.

**decanter centrifuge** See “solid bowl centrifuge.”

**decarbonator** A device used to remove alkalinity from solution by conversion to CO<sub>2</sub> prior to air stripping.

**decat water** Water that has had the hardness minerals removed by a water softener.

**decay products** Degraded radioactive materials, often referred to as “daughters” or “progeny.”

**DeCelerating Flo** Gravity sand filter by CBI Walker, Inc.

**dechlorination** The partial or complete reduction of residual chlorine by any chemical or physical process.

**decibel (dB)** The unit for measuring sound pressure levels. It is the logarithm of the ratio of the sound’s intensity to the intensity of the weakest audible sound.

**declining-rate filtration** Filter operation where the rate of flow through the filter declines and the level of the liquid above the filter bed rises throughout the length of the filter run.

**decontamination** The process of reducing or eliminating the presence of harmful substances, such as infectious agents, so as to reduce the likelihood of disease transmission from those substances.

**Dee Fo®** Foam control additive by Ultra Additives, Inc.

**deep bed filter** Granular media filter with a sand or anthracite filter bed that is deeper than a conventional filter, i.e., 0.9m (3 feet), and often up to 1.8m (6 feet) deep.

**Deep Bubble™** Corrosion control aeration system by Lowry Aeration Systems, Inc.

**Deep Draw** Airlift diffuser for lagoons by Wilfley Weber, Inc.

**deep well injection** Technique where raw or treated wastes are discharged through a properly designed well into a geological stratum.

**DeepAer** Aeration system with rectangular eductor tubes by Walker Process Equipment.

**DeepBed** Granular media filter bed used as fixed film reactor by Tetra Process Technologies.

**Defined Substrate Technology™** Reagent system designed to promote growth of target microbe by Environetics, Inc.

**Deflectofuser®** Coarse bubble air diffuser by USFilter/Diffused Air Products Group.

**deflocculating agent** A material added to a suspension to prevent settling.

**defoliant** A chemical applied to plants which causes them to lose their leaves.

**deforestation** The permanent clearing of forest land and its conversion to nonforest uses.

**degasifier** Device used to remove dissolved gases from solution, usually by means of an air-stripping column.

**degradation** The biological breakdown of organic substances.

**dehydrate** The physical or chemical process where water in combination with other matter is removed.

**DeHydro®** Vacuum assisted sludge drying bed by Infilco Degremont, Inc.

**deinking** The process of removing ink from secondary fibers.

**deionization (DI)** The process of removing ions from water, most commonly through an ion exchange process.

**dekSPRAY** Cooling tower nozzles by Brentwood Industries, Inc.

**Delaval Filter** Precoat condensate polishing filter by Idreco USA, Ltd.

**deliquescent** The ability of a dry solid to absorb water from the air and soften or dissolve as a result.

**delist** The use of a petition process to have a facility's toxic designation rescinded.

**DeLPAC** Polyaluminum coagulants by Delta Chemical Corp.

**Delrin** High molecular weight acetal resin polymer material by E.I. Dupont De Nemours, Inc.

**Delt™** Traveling water screen chain by USFilter/Rex & Link-Belt Products.

**Delta™** Mixing technology by Calgon Carbon Corp.

**delta** The flat alluvial area at the mouth of some rivers where an accumulation of river sediment is deposited in a sea or lake.

**Delta G®** Parallel plate separator by Smith & Loveless, Inc.

**delta P** Differential pressure.

**delta T** Differential temperature.

**DeltaFlow™** Water purification plant by Ecolochem, Inc.

**Delta-Pak®** Mass transfer packing media by Delta Cooling Towers, Inc.

**Deltapilot** Hydrostatic level measurement device by Endress+Hauser.

**Delta-Stak**<sup>®</sup> Inclined plate clarifier by Baker Process.

**Delumper**<sup>®</sup> Solids disintegrator and crusher products by Franklin Miller, Inc.

**demin** Common abbreviation for “demineralizer.”

**demineralizing** The process of removing minerals from water, most commonly through an ion exchange process.

**Demister**<sup>®</sup> Mist eliminator by Koch-Otto York.

**dendrimer** Hyperbranch macromolecule to control inorganic water constituents to prevent crystal formation.

**Denite**<sup>®</sup> Denitrification process using a granular media fixed film reactor bed by Tetra Process Technologies.

**denitIR**<sup>®</sup> Biological denitrification system by Baker Process.

**denitrification** Biological process in which nitrates are converted to nitrogen.

**Denitri-Filt**<sup>™</sup> Biological denitrification filter by USFilter/Davco.

**Densadeg**<sup>®</sup> Thickener-clarifier unit with lamella zone and sludge recirculation by Infilco Degremont, Inc.

**Densator**<sup>®</sup> High density solids contact clarifier with primary and secondary mixing zones by Infilco Degremont, Inc.

**dense, nonaqueous phase liquid (DNAPL)** A liquid that is immiscible in and denser than water.

**density** The ratio of the mass of an object to its volume.

**density current** A flow of water through a larger body of water which retains its unmixed identity due to a difference in density.

**Densludge** Digestion system with primary thickening unit by GL&V/Dorr-Oliver, Inc.

**Dentrol** Sludge density controller by Walker Process Equipment.

**Deox/2000**<sup>®</sup> Dechlorination analyzer by USFilter/Wallace & Tiernan.

**Deox**<sup>®</sup> Oxygen and dissolved gas removal technology by Ecolochem, Inc.

**deoxyribonucleic acid (DNA)** The macromolecule that contains the hereditary material vital to reproduction.

**De-Pac**<sup>™</sup> Disposal dewatering filter by PacTec, Inc.

**Department of Energy (DOE)** U.S. federal agency responsible for research and development of energy technology.

**Department of Transportation (DOT)** U.S. federal agency responsible for regulating transport of hazardous and nonhazardous materials.

**depletion curve** In hydraulics, a graphical representation of water depletion from storage-stream channels, surface soil, and groundwater.

**Deplution** Wastewater treatment products by JDV Equipment Corp.

**Depolox**<sup>®</sup> Chlorine, pH, and fluoride analyzer USFilter/Wallace & Tiernan.

**depth filtration** Filtration classification for filters where solids are removed within a granular media bed.

**Depurator** Induced air flotation unit by Baker Hughes Process Systems.

**dermal** Used or applied to the skin.

**dermal exposure** Contact between a chemical and the skin.

**dermal toxicity** The ability of a pesticide or toxic chemical to poison people or animals by contact with the skin. See “contact pesticide.”

**DES** A synthetic estrogen, diethylstilbestrol is used as a growth stimulant in food animals. Residues in meat are thought to be carcinogenic.

**Desal<sup>TM</sup>** Desalination equipment and systems product line by Osmonics Desal.

**Desalator<sup>TM</sup>** Reverse osmosis product line by USFilter/Bekox.

**desalination** The process of removing dissolved salts from water.

**Desalination Systems** Former name of Osmonics Desal.

**desalinization** See “desalination.”

**desalting** See “desalination.”

**DeSander<sup>®</sup>** Hydrocyclone separator by Krebs Engineers.

**desert** A region characterized by a climatic pattern where evaporation exceeds precipitation.

**desertification** The process where the biological productivity of land is reduced, resulting in desert-like conditions.

**desiccant** A substance capable of absorbing moisture, used as a drying agent.

**design criteria** (1) Engineering guidelines specifying construction details and materials. (2) Objectives, results, or limits that must be met by a facility, structure, or process in performance of its intended functions.

**design storm** The magnitude of a storm upon which the design of a storm water facility is based, usually expressed in terms of the probability of the occurrence over a period of years.

**designated pollutant** Air pollutants including acid mist, total reduced sulfur, and fluorides which are neither criteria nor hazardous pollutants, as described in the Clean Air Act, but for which new source performance standards exist.

**designated uses** Those water uses, including cold water fisheries, public water supply, and irrigation, identified in state water quality standards that must be achieved and maintained as required under the Clean Water Act.

**designer bugs** Common term for microbes developed through biotechnology that can degrade specific toxic chemicals at their source in toxic waste dumps or in groundwater.

**desilting basin** A settling basin used for sedimentation of silt, usually for storm-water flows.

**desorption** The release of an adsorbed solute from an adsorbent.

**destination facility** The facility to which regulated medical waste is shipped for treatment and destruction, incineration, and/or disposal.

**destratification** Vertical mixing within a lake or reservoir to totally or partially eliminate separate layers of temperature, plant, or animal life.

**destroyed medical waste** Regulated medical waste that has been ruined, torn apart, or mutilated through thermal treatment, melting, shredding, grinding, tearing, or breaking so that it is no longer generally recognized as medical waste, but has not yet been treated.

**destruction and removal efficiency (DRE)** An expression of hazardous waste incinerator efficiency stated as the percentage of incoming principal organic hazardous components destroyed during incineration.

**Destrux<sup>®</sup>** Heavy duty rotary knife cutter to granulate scrap material by Franklin Miller, Inc.

**desulfurization** Removal of sulfur from fossil fuels to reduce pollution.

**detectable leak rate** The smallest leak from a storage tank expressed in terms of gallons-or liters-per-hour that a test can reliably discern with a certain probability of detection or false alarm.

**detention time** The theoretical time required to displace the contents of a tank or unit at a given rate of discharge.

**detergent** Synthetic washing agent that helps to remove dirt and oil and may contain compounds which kill useful bacteria and encourage algae growth when present in wastewater that reaches receiving waters.

**detoxification** Treatment to remove a toxic material.

**Detritor** Grit removal unit with reciprocating raking mechanism by GL&V/Dorr-Oliver, Inc.

**detritus** (1) Decaying organic matter such as root hairs, stems, and leaves usually found on the bottom of a water body. (2) Grit or fragments of rock or minerals.

**detritus tank** Square tank grit chamber incorporating a revolving rake to scrape settled grit to a sump for removal.

**Developure** Depth filter by Osmonics, Inc.

**dew** Water droplets that form on cool surfaces following condensation of atmospheric water vapor.

**dew point** The temperature to which air with a given concentration of water vapor must be cooled to result in condensation of the vapor.

**Dewa** Water and wastewater treatment systems by DWT-Engineering Oy.

**dewater** (1) To extract a portion of the water present in a sludge or slurry. (2) To drain or remove water from an enclosure.

**dewatered sludge** The solids remaining after the free water has been removed from a wet sludge.

**dewatering lagoon** A lagoon constructed with a sand and underdrain bottom.

**dewatering table** See “belt thickener.”

**Dewplan** Former name of USFilter/Dewplan.

**DF** Dilution factor.

**DFR** Dynamic fixed film reactor by Schreiber Corp.

**DFT** See “dry film thickness (DFT).”

**DFT Classic®** Wound fiber filter cartridge by USFilter/Filtration & Separation.

**DGF** Dissolved gas flotation. See “dissolved air flotation (DAF).”

**DHC** See “dirt holding capacity (DHC).”

**DHHS** Department of Health and Human Services.

**DI** See “deionization.”

**dialysis** The separation of substances from solution on the basis of molecular size by diffusion through a semipermeable membrane.

**Diamite Series™** Membrane-cleaning liquids for removal of organic and inorganic foulants by King Lee Technologies.

**Diamond Gate** Screenings press by Andritz-Ruthner, Inc. (Western Hemisphere) and USFilter/Contra-Shear.

**Diamond Seal™** Metering gate by Tetra Process Technologies.

**diarrhea** Frequent and excessive discharging of the bowels, producing abnormally thin, watery feces, usually a symptom of gastrointestinal upset or infection.



**diatom** A unicellular algae with a yellowish brown color and siliceous shell.

**diatomaceous earth (DE)** Skeletal deposits of diatoms used as filter aids and a filter medium.

**diatomaceous earth filter** Water treatment filter that uses a layer of diatomaceous earth as the filter medium.

**diatomite** See “diatomaceous earth.”

**diazinon** A common organophosphate insecticide.

**dibenzofurans** A group of highly toxic organic compounds.

**DIC** Dissolved inorganic carbon.

**dieldrin** A chlorinated hydrocarbon pesticide formerly used for moth-proofing and agricultural insect control, now banned in the U.S.

**dielectric heater** A solid waste treatment heating system where an alternating electric field of high frequency is used to generate heat in nonconductive or dielectric materials.

**Diemme** Membrane type filter press by Olds Filtration Engineering, Inc.

**Diffusadome®** Coarse bubble air diffuser by Amwell, Inc.

**Diffusair** Carbon dioxide diffuser system by Walker Process Equipment.

**diffused aeration** The introduction of compressed air into water by means of submerged diffusers or nozzles.

**diffuser** A porous plate or tube through which air, or another gas, is forced and divided into bubbles for diffusion in liquids.

**Diffuserator** Carbon dioxide diffusion system by Walker Process Equipment.

**diffusion** The movement of suspended or dissolved particles from a more concentrated to a less concentrated area.

**diffusion dialysis** An ion exchange membrane process that separates ionic, non-ionic or colloidal species from solution based on differing diffusion rates, using concentration differentials across the membrane as the driving force.

**diffusive air test** A high resolution test for detecting membrane integrity that measures the amount of air diffused through a wetted membrane.

**Digesdahl** Digestion apparatus for lab sample preparation for crude protein and mineral analysis by Hach Co.

**digester** A tank or vessel used for sludge digestion.

**digestion** The biological oxidation of organic matter in sludge resulting in stabilization.

**Digichem** Programmable titration analyzer by Ionics, Inc.

**Digi-Flo®** Flow rate meter and totalizer by Blue-White Industries.

**Dijbo** Hydraulically operated trash rake by Landustrie Sneek BV.

**dike** An embankment or ridge of materials used to prevent the movement of liquid or sludges.

**dilatant** Property of a liquid whose viscosity increases as agitation is increased.

**diluent** Any liquid, solid, or gaseous material used for diluting or dissolving.

**dilution** (1) Lowering the concentration of a solution by adding more solvent.

(2) The engineered mixing of discharged water with receiving water to lessen its immediate aesthetic and/or biochemical impact.

**dilution factor** See “dilution ratio.”

**dilution ratio** (1) The volumetric ratio of solvent to solute. (2) The ratio of the water volume in a stream to the waste volume introduced into the stream. The dilution ratio gives an indication of the capacity of a water body to assimilate a waste.

**dimitic** Lakes and reservoirs that freeze over and normally go through two stratification and mixing cycles a year.

**Dimminutor®** Open channel comminutor by Franklin Miller, Inc.

**DIN** Deutsche Industrie Normal.

**dinocap** A fungicide used primarily by apple growers to control summer diseases.

**dinoseb** A herbicide, also used as a fungicide and insecticide, that was banned by the EPA because it posed the risk of birth defects and sterility.

**dioxin** An aromatic halogenated hydrocarbon that is one of the most toxic compounds known.

**Dioxytrol** Centrifugal oxygenation system by Hazleton Environmental, Inc.

**DIP®** Dynamic inclined plane industrial skimmer by JBF Environmental Technology.

**Dipair™** Static tube aerator by Infilco Degremont, Inc.

**Diphonix™** Ion exchange resins by Eichrom Industries, Inc.

**Di-Prime™** Automatic trash pump by Goodwin Pumps of America.

**direct discharger** A municipal or industrial facility which introduces pollution through a defined conveyance or system such as outlet pipes; a point source.

**direct filtration** Filtration process that does not include flocculation or sedimentation pretreatment.

**direct reuse** The beneficial use of reclaimed water with transfer from a reclamation plant to the reuse site.

**Director™** Floating flow diversion baffle by Environetics, Inc.

**DirecTube** Eductor tube anaerobic gas mixing unit by Walker Process Equipment.

**dirt holding capacity (DHC)** The amount of contaminant fed to a filter on a weight basis that attains the filter's terminal differential pressure.

**disc screen** A screening device consisting of a circular disc fitted with wire mesh which rotates on a horizontal axis.

**Discfuser®** Coarse bubble air diffuser by USFilter/Diffused Air Products Group.

**discharge** The release of any pollutant, by any means, to the environment.

**Discor** Disc dryer by Andritz-Ruthner, Inc.

**Discostrainer** Fine screening device by Waterlink Separations, Inc.

**Discotherm** Thermal sludge processor by LIST, Inc.

**Disc-Pak** Cartridge filter by Alsop Engineering Co.

**Discreen®** Rotating disc screening device by Monoflo.

**discrete particle settling** Phenomenon referring to sedimentation of particles in a suspension of low solids concentration. Also called "type I settling."

**Disc-Tube™** Membrane filtration system by Rochem Environmental, Inc.

**Di-sep®** Filtration systems by Smith & Loveless, Inc.

**disinfectant** A substance used for disinfection and in which disinfection has been accomplished.

**disinfectant contact time** The travel time, in minutes, for water to move from the point of disinfectant application to a point where the "residual disinfectant concentration" is measured. See also "C × T."

**disinfection** The selective destruction of disease-causing microbes through the application of chemicals or energy.

**disinfection byproduct (DBP)** A byproduct which occurs or is anticipated to occur from the addition of commonly used water treatment disinfectants including chlorine, chloramine, chlorine dioxide, and ozone.

**disinfection byproduct formation potential (DBFPF)** An indirect measure of the amount of disinfection byproduct precursors in a sample.

**disinfection byproduct precursor (DBPP)** A substance that can be converted into a disinfection byproduct during disinfection.

**dispersant** An additive that prevents agglomeration of particulates or is used to break up concentrations of organic matter, such as oil spills.

**dispersed suspended solids (DSS)** The suspended solids remaining in a sample's supernatant 30 minutes after settling.

**dispersion model** A mathematical representation of the transport and diffusion processes that occur in the atmosphere.

**dispersion rate** A diffusion parameter of gas plumes or stack effluents.

**Disposable Waste Systems** Former name of JWC Environmental.

**Dispos-A-Filter™** Metals testing filter capsule by Geotech/ORS Environmental Systems.

**disposal** The discharge, deposit, injection, dumping, spilling, leaking, or placing of any liquid or solid waste on land or water so that it may enter the environment or be emitted into the air.

**Disposorbs** Self-contained disposable adsorption systems by Calgon Carbon Corp.

**dissociate** The process of ionization of an electrolyte or salt when dissolved in water, forming cations and anions.

**dissolved air flotation (DAF)** The clarification of flocculated material by contact with minute bubbles causing the air/floc mass to be buoyed to the surface, leaving behind a clarified water. Use of a gas other than air is referred to as "dissolved gas flotation" or "DGF."

**dissolved nitrogen flotation (DNF)** A variation of the DAF process where nitrogen, rather than air, is used to assist in the removal of suspended solids.

**dissolved organic carbon (DOC)** The fraction of TOC that is dissolved in a water sample.

**dissolved organic matter (DOM)** The fraction of organic matter in water that passes through a 0.45 micron filter.

**dissolved oxygen (DO)** The oxygen dissolved in a liquid.

**dissolved solids** Solids in solution that cannot be removed by filtration with a 0.45 micron filter. See "total dissolved solids (TDS)."

**distill** See "distillation."

**distillate** A liquid product condensed from vapor during distillation.

**distillation** The process of boiling a liquid solution followed by condensation of the vapor for the purpose of separating the solute from the solution.

**distributed control system (DCS)** A collection of modules, each having a specific function, interconnected to carry out an integrated data acquisition and control operation.

**distributor** See “rotary distributor.”

**diurnal** (1) Occurring during a 24 hour period. (2) Happening during the day time, rather than the night time.

**diurnal fluctuation** A daily fluctuation in flow or composition that is of a similar pattern from one 24 hour period to another.

**diversion chamber** A chamber used to divert all or part of a flow to various outlets.

**diversion dam** A dam constructed to divert part of all of the water from a stream away from its main course.

**diversity index** A mathematical expression that depicts the diversity of a species in quantitative terms.

**DLO™** Dynamic light obscuration technique used in a particle monitor by Chemtrac Systems, Inc.

**DNA** See “deoxyribonucleic acid (DNA).”

**DNAPL** See “dense, nonaqueous phase liquid (DNAPL).”

**DNF** See “dissolved nitrogen flotation (DNF).”

**DNR** Department of Natural Resources.

**DO** See “dissolved oxygen (DO).”

**DOAS** Differential Optical Absorption Spectrometry.

**DOC** See “dissolved organic carbon (DOC).”

**doctor blade** A scraping device used to remove or regulate the amount of material on a belt, roller, or other moving or rotating surface.

**DOE** See “Department of Energy (DOE).”

**DOI** U.S. Department of Interior.

**Dokwed** Back cleaned bar screen by USFilter/Hubert.

**dolomite** A natural mineral consisting of calcium carbonate and magnesium carbonate. Chemical formula is  $\text{CaMg}(\text{CO}_3)_2$ .

**dolomitic lime** Lime containing 30 to 50% magnesium oxide and 50 to 70% calcium oxide.

**DOM** See “dissolved organic matter (DOM).”

**domestic wastewater** Wastewater originating from sanitary conveniences in residential dwellings, office buildings and institutions. Also called “sanitary wastewater” and “domestic sewage.”

**domestic water use** Water use within private homes.

**Don-Press** Screw-type solids/screenings press by Dontech, Inc.

**DorrClone** Grit classifier unit by GL&V/Dorr-Oliver, Inc.

**Dorrco** Brand name of GL&V/Dorr-Oliver, Inc. products.

**dosage** A specific quantity of a substance applied to a unit quantity of liquid to obtain a desired effect.

**dose equivalent** A measure of effective radiation dose that considers differences in biological effectiveness due to the radiation type and its distribution in the body.

**dose-response relationship** The relationship between the dose of a pollutant and its effect on a biological system.

**dosfolat®** A folic acid micronutrient solution to improve wastewater settling marketed by Bioprime, Ltd.

**dosimeter** An instrument used for measuring radiation exposure.

**dosing siphon** A siphon that automatically discharges liquid onto a trickling filter bed or other wastewater treatment device.

**dosing tank** A tank into which raw or partly treated wastewater is accumulated and held for subsequent discharge and treatment at a constant rate.

**DOT** See “Department of Transportation (DOT).”

**Double Dish** Pressure filter underdrain by USFilter/Warren.

**Double Ditch** Oxidation ditch wastewater treatment process by USFilter/Krüger.

**double salt** Any salt containing two different cations or anions in a crystalline matrix.

**DoubleGuard™** Bar screen bar rack with two sets of offset bars by USFilter/Headworks Products.

**double-suction pump** A centrifugal pump with suction pipes connected to the casing from both sides.

**Dowex®** Ion exchange resin by Dow Chemical Co.

**downcomer** A pipe directed downward.

**downgradient** The direction that groundwater flows; similar to “downstream” for surface water.

**downstream** Toward the mouth of a stream or river in the direction of flow.

**dowsing** The scientifically unproven practice of locating groundwater or buried objects by walking above the area while holding a branch, wooden stick, or metal rods and noting where it appears to be drawn downward to a particular spot. Also called “witching.”

**DOX** Dissolved organic halogen.

**DP** Differential pressure.

**d-part®** Waste conditioner by Medina Products Bioremediation Division.

**DPD** N,N-diethyl-p-phenylenediamine. An indicator which produces red gradations in the presence of chlorine residuals.

**DPD-FAS** DPD-ferrous ammonium sulfate method of measuring all species of chlorine residuals in a water or wastewater.

**dracunculiasis** A waterborne, parasitic disease caused by the *Dracunculus medinensis* worm, and the only known disease solely associated with unhealthy drinking water. Also called “guinea worm disease.”

**draft tube** A centrally located vertical tube used to promote mixing in a sludge digester or aeration basin.

**Draft Tube Channel** Oxidation ditch process formerly offered by Lightnin.

**drag tank** A rectangular sedimentation basin that uses a chain and flight collector mechanism to remove dense solids.

**Drag-Star™** Rectangular clarifier sludge removal device utilizing a cable drive and scraper carriage by Smith & Loveless, Inc.

**Drainad™** Solids dewatering system by Waterlink/Aero-Mod Systems.

**drain tile** Short lengths of pipes laid in underground trenches to collect and carry away excess groundwater or to discharge wastewater into the ground.

**drainage basin** The area of land that drains water, sediment, and dissolved materials to a common outlet at some point along a stream channel.

**drainage water** Ground, surface, or stormwater collected by a drainage system and discharged into a natural waterway.

**drainage well** A well drilled to carry excess water off agricultural fields. Because they act as a funnel from the surface to the groundwater below, drainage wells can contribute to groundwater contamination.

**Drain-Dri**<sup>®</sup> Wet pit pump by Yeomans Chicago Corp.

**Drainpac**<sup>™</sup> Storm drain filtration system by PacTec, Inc.

**drawback** The reverse flow of water from the permeate side of a membrane to the feedwater or concentrate side as a result of osmosis.

**drawdown** (1) The drop in the water table or level of water in the ground when water is being pumped from a well. (2) The amount of water used from a tank or reservoir. (3) The drop in the water level of a tank or reservoir.

**DRE** See “destruction and removal efficiency.”

**dredge** To remove sediment or sludge from rivers or estuaries to maintain navigation channels.

**dregs** Small solid particles in a liquid that settle to the bottom of a container.

**Dresser/Jeffrey** Screening equipment product line acquired by Waste-Tech, Inc.

**Drewcor**<sup>®</sup> Corrosion inhibitor chemical additive by Ashland Chemical, Drew Industrial.

**Drewgard** Corrosion inhibitor by Ashland Chemical, Drew Division.

**Drewpac**<sup>®</sup> Coagulant used in water and wastewater treatment by Ashland Chemical, Drew Industrial.

**Drexelbrook** Former name of AMETEK Drexelbrook.

**drift** (1) Water lost from a cooling tower as mist or droplets entrain in the circulating air. (2) Pollutants entrained in a plant’s stack discharge.

**drift barrier** An artificial barrier designed to catch driftwood or other floating material.

**drift test** A part of an emissions certification process where the CEM must operate unattended for some period of time without the analyzers drifting out of calibration.

**Driftor**<sup>™</sup> Drift eliminator by Kimre Inc.

**drilling mud** A fluid, often containing bentonite, used to cool and lubricate a drilling bit and remove cuttings from the bit and carry them to the well’s surface.

**drinking water** Water safe for human consumption or which may be used in the preparation of food or beverages, or for cleaning articles used in the preparation of food or beverages.

**Drinking Water Contaminant Candidate List (DWCCCL)** A list of any chemical or microbial contaminant that is known or anticipated to occur in public water systems and which may be regulated in the future under the SDWA. The DWCCCL replaces the Drinking Water Priorities List.

**drinking water equivalent level (DWEL)** The lifetime exposure level at which adverse health effects are not anticipated to occur, assuming 100% exposure from drinking water.

**Drinking Water Priority List (DWPL)** A 1988 list of drinking water contaminants which has been replaced by the “Drinking Water Contaminant Candidate List.”

**drip irrigation** A micro-irrigation water management technique used primarily for landscaping, where drips of water are emitted near the base of the plant.

**drip proof** Designation for motor enclosure with ventilating openings so that drops of liquids or solids falling on the motor will not enter the unit directly or by running along an inwardly inclined surface.

**drought** An extended period of dry weather which, as a minimum, can result in a partial crop failure or an inability to meet normal water demands.

**drowned weir** See “submerged weir.”

**drum pulverizer** A rotating cylinder used to shred solid waste by the intermingling action of internal baffles acting on the wetted solid waste.

**drum screen** A cylindrical screening device used to remove floatable and suspended solids from water or wastewater.

**Drumm-Scale™** Drum weighing scale by Force Flow Equipment.

**Drumshear** Rotating fine screen by Aer-O-Flo Environmental, Inc.

**Drumstik** Feed tube for drum mounted chemical feed system by USFilter/Stranco.

**dry bulb temperature** The air temperature measured by a conventional thermometer.

**dry cleaning wastes** Wastewater from laundry cleaning operations that use non-aqueous chemical solvents to clean fabrics.

**dry film thickness (DFT)** Thickness of a dried paint or coating usually expressed in mils.

**dry ice** Solidified carbon dioxide frequently used as a refrigerant that vaporizes without passing through a liquid state.

**dry weather flow (DWF)** The flow of wastewater in a sanitary sewer during dry weather. The sum of wastewater and dry weather infiltration.

**dry well** (1) A dry compartment in a pumping station where pumps are located.  
(2) A well that produces no water.

**Dry-All** Vacuum belt press by Baler Equipment Co.

**DryCal®** Primary flow calibration instrument by BIOS International Corp.

**drying bed** See “sludge drying bed.”

**DSS** See “dispersed suspended solids (DSS).”

**DST™** Defined substrate technology. Reagent system designed to promote growth of target microbes by Environetics, Inc.

**dual flow screen** A traveling water screen arranged in a channel so that water enters through both the ascending and descending wire mesh panels and exits through the center of the screen.

**dual media filter** Granular media filter utilizing two types of filter media, usually silica sand and anthracite.

**Dualator®** Gravity sand filter by Tonka Equipment Co.

**dual-phase extraction** See “bioslurping.”

**Dubl-Safe** Measuring system for brine regeneration of softening unit by Culligan International Corp.

**Duckbill®** Wastewater sampler by Markland Specialty Engineering Ltd.

**duckweed** See “Lemnaceae.”

**duct** A tube or channel for gas or fluid flow.

**dump** A site used to dispose of solid waste without environmental controls.

**Dunkers** Flow balancing system by Munters.

**Duo-Clarifier** Wastewater treatment clarifier formerly offered by GL&V/Dorr-Oliver, Inc.

**Duo-Deck** Floating cover for anaerobic digester tank by USFilter/Envirex.

**Duo-Filter** Two-stage trickling filter formerly offered by GL&V/Dorr-Oliver, Inc.

**Duo-Fine**<sup>®</sup> Pleated media filter cartridge by USFilter/Filtration & Separation.

**Duo-Flo** Traveling mesh belt screen by Dontech, Inc.

**Duo-Pilot**<sup>®</sup> Coagulant control system using pilot filters by USFilter/Microfloc.

**DuoReel** Power cable reel system for clarifiers by Walker Process Equipment.

**DuoSparj** Coarse bubble diffuser by Walker Process Equipment.

**DuoTherm**<sup>®</sup> Biosolids production process by USFilter/Envirex.

**Duo-Vac** Inclined screen unit by the former Bowser-Briggs Filtration Co.

**DuoVAL** Automatically backwashed gravity sand filter by General Filter Co.

**duplex pump** A reciprocating pump having two side-by-side cylinders and connected to the same suction and discharge lines.

**duplex stainless steel** A high strength stainless steel containing two forms of iron, typically austenite and ferrite.

**Duplex**<sup>™</sup> Air scrubber with two modules by USFilter/Davis Process.

**Dupont**<sup>®</sup> Brand name of E.I. DuPont De Nemours, Inc.

**Dura-Disc** Fine bubble membrane diffuser by Wilfley Weber, Inc.

**Dura-Fuser**<sup>™</sup> Aeration piping system by USFilter/Davco.

**Dura-Mix** Mixer for aeration applications by Wilfley Weber, Inc.

**Dura-Pac** PVC sheet media by NSW Corp.

**Dura-Pleat**<sup>™</sup> Fabric dust collector filters by Farr Co.

**Durasan**<sup>™</sup> Reverse osmosis protective sleeve by Osmonics Desal.

**Duratherm**<sup>™</sup> Reverse osmosis membranes for hot water sanitizing by Osmonics Desal.

**Dura-Trac**<sup>™</sup> Sensor for streaming current transmitter by Chemtrac Systems, Inc.

**Durco** Filtration equipment by Aqua Care Systems.

**Durex**<sup>®</sup> Traveling water screen chain material by USFilter/Rex & Link-Belt Products.

**Duriron** Former name of Aqua Care Systems.

**DuroFlow**<sup>®</sup> Air blower by Gardner Denver Blower Division.

**Durotex**<sup>®</sup> Dewatering belts by Industrial Fabrics Corp.

**Duroy** Nonlubricated, metallic traveling water screen chain by USFilter/Rex & Link-Belt Products.

**dust** Fine-grained particles light enough to be suspended in air.

**dust mask** Face mask designed to provide relief from irritation of the nose, mouth, and throat caused by nontoxic dusts; not designed to be used when dust concentrations are greater than the PEL. Also called “nuisance mask.”

**dustfall jar** An open container used to collect large particles from the air for measurement and analysis.

**Dustube**<sup>®</sup> Fabric filter by Wheelabrator Air Pollution Control, Inc.

**DVB** Divinylbenzene, the common crosslinking agent for making resin beads.

**DVGW** German Association for Gas and Water Plants.

**DWCCL** See “Drinking Water Contaminant Candidate List (DWCCL).”

**DWEL** See “drinking water equivalent level (DWEL).”

**DWF** See “dry weather flow (DWF).”



**DWI** Drinking Water Inspectorate. Agency whose role is to enforce water quality/supply regulations for potable water which meets in England and Wales.

**DWPL** See “Drinking Water Priority List (DWPL).”

**DWS** Manufacturer of sewage grinders for JWC Environmental.

**Dynabeads®** Anti-*Cryptosporidium* by Dynal, Inc.

**DynaBlend™** Polymer blending and feeding system by Fluid Dynamics, Inc.

**DynaClear®** Packaged water treatment system incorporating contact filtration by Parkson Corp.

**DynaCycle®** Regenerative catalytic oxidizer by Monsanto Enviro-Chem Systems, Inc.

**DynaFloc Feedwell** Clarifier feedwell design to promote mixing of flocculants by GL&V/Dorr-Oliver, Inc.

**Dyna-Grind** Screenings and sewage grinder formerly offered by USFilter/Headworks Products.

**Dynalloy®** Filter cartridge with metal fiber media by USFilter/Filtration & Separation.

**dynamic head** See “total dynamic head.”

**dynamic membrane** A transient membrane formed on the surface of an established membrane by solids filtered from the feed stream.

**Dynamic Probe™** Filter control system by Roberts Filter Group.

**Dynamic Systems** Product group integrated within USFilter/Control Systems.

**DynaSand®** Continuously backwashed moving bed sand filter by Parkson Corp.

**Dynasieve™** Self-cleaning rotary fine screen by Andritz-Ruthner, Inc.

**Dynatherm** In-vessel composting system by Fairfield Service Co.

**Dynatrol®** Measurement level switches and liquid measurement devices by Automation Products, Inc.

**DynaWave®** Wet scrubbing system by Monsanto Enviro-Chem Systems, Inc.

**DynaZyme™** Odor control biofilter system by Monsanto Enviro-Chem Systems, Inc.

**dyne** A unit of measurement equal to the force that imparts an acceleration of 1 cm/s<sup>2</sup> to a 1 gram mass.

**Dyneco** Former bar screen manufacturer acquired by Parkson Corp.

**dysentery** A disease of the gastrointestinal tract usually resulting from poor sanitary conditions and transmitted by contaminated food or water.

**Dystor** Gas holder system for anaerobic digesters by USFilter/Envirex.

**dystrophic lakes** Acidic, shallow bodies of water that contain humus and/or other organic matter; contain many plants but few fish.

**dystrophy** A disorder caused by defective nutrition or metabolism.

## E

***E. coli*** See “*Escherichia coli* (*E. coli*).”

***E.A. Aerotor*** Packaged wastewater treatment plant by Lakeside Equipment Corp.

***E/ONE Sewer™*** Pressurized sewer system by Environment One Corp.

**EA** Endangerment assessment; enforcement agreement; environmental action; environmental assessment; environmental audit.

**EAD** Electro-acoustical dewatering.

**EAF** Electric arc furnace.

**EAFD** See “electric arc furnace dust (EAFD).”

**EAG** Exposure assessment group.

**EAP** Environmental action plan.

**earthen dam** A dam made primarily of soil, sand, silt, and clay.

**earthen reservoir** A reservoir constructed in earth using excavated materials to form embankments.

**Earthtec**<sup>®</sup> Liquid copper water treatment product used as algicide/bactericide by Earth Science Laboratories, Inc.

**easement** A legal right to the use of land owned by others.

**EaseOut** Pivoting air header and drop pipe arrangement by Walker Process Equipment.

**Eastern Econoline** Mixer product line by EMI, Inc.

**EasyLogger** Stormwater data logger by Wescor, Inc.

**EB** Emissions balancing.

**ebb** (1) The flowing back of water brought in by the tide. (2) To recede from a flooded state.

**ebb tide** Tide occurring at the ebb period of tidal flow.

**EBCT** See “empty bed contact time (EBCT).”

**e-beam** See “electron beam irradiation.”

**EBOD** See “effective BOD (EBOD).”

**EC** Environment Canada; effective concentration.

**E-Cell**<sup>™</sup> Modular electrodeionization process by E-Cell Corp.

**ecesis** The successful establishment of a plant or animal in a new locality.

**ECF** Elemental chlorine free.

**Echo-Lock** Automatic compensating device for flow/level meters by Marsh-McBirney, Inc.

**EchomaX**<sup>®</sup> Ultrasonic measurement transducer by Milltronics, Inc.

**ECI** Environmental Conditioners, Inc., a former manufacturer of packaged wastewater treatment plants.

**ECL** Electrochemiluminescence. A technology used for analyzing molecular and genetic material.

**ECL** Environmental chemical laboratory.

**Eclipse**<sup>®</sup> Dispersion polymers by Calgon Corp.

**EcoCare**<sup>™</sup> Odor eliminator by Nature Plus, Inc.

**Ecochoice** Catalytic oxidation system for dissolved organics by Eco Purification Systems USA, Inc.

**Ecodenit** Biological nitrate removal process using ion exchange technology by USFilter/Krüger.

**EcoDry** Sludge drying system by Andritz-Ruthner, Inc.

**Ecodyne** Former name of Transunion product group now known as Graver Co.

**ecoefficiency** Economically efficient use of resources by businesses.

**Ecolo-Chief** Packaged wastewater treatment plants by Chief Industries, Inc.

**Eco-Logic™** Combination aeration and ultraviolet/ozonation system by Atlantic Ultraviolet Corp.

**ecological indicator** A characteristic of the environment that, when measured, quantifies magnitude of stress, habitat characteristics, degree of exposure to stress, or ecological response to exposure.

**ecology** The relationship of living things to one another and their environment.

**Ecomachine** Belt filter press by WesTech Engineering, Inc.

**Econ-Abator®** Catalytic oxidation system by Huntington Environmental Systems, Inc.

**Econex** Counterflow regeneration ion exchange by Ionics, Inc.

**Econ-NOx™** Selective catalytic reduction system by Huntington Environmental Systems, Inc.

**Econo Silo™** Enclosed composting system by USFilter/Davis Process.

**EconoBAY™** Composting system by USFilter/Davis Process.

**Economixer** Solid bowl decanter centrifuge by Centrisys Corp.

**economizer** A heat exchanger in a furnace stack that transfers heat from the stack gas to the boiler feedwater.

**economy** In thermal desalination, the ratio of kilograms of distilled water produced per 2326 kJ of energy input.

**economy-of-scale** The reduction of unit capital cost as the size of the unit increases.

**Econopure** Reverse osmosis system by Osmonics, Inc.

**EconoSep** Oil/water separator by Hydro-Flo Technologies, Inc.

**Econ-O-Star®** Batch wastewater treatment system by Alar Engineering Corp.

**Econotreat** Package wastewater treatment plant by USFilter/Industrial Wastewater Systems.

**Econ-O-Vap** Wastewater evaporation system by Fen-Tech Environmental, Inc.

**Ecopure** VOC and particulate emission control product line by Dürr Environmental, Inc.

**ecorock** A hard, dense rock produced from the ash of incinerated sludge and municipal solid waste suitable for use as a road aggregate.

**Ecosorb®** Odor control neutralizer by Odor Management, Inc.

**ecosystem** The total community of living organisms together with their physical and chemical environment.

**EcoVap™** VOC control system by AMCEC, Inc.

**ECRA** (1) Economic Cleanup Responsibility Act. (2) Environmental Cleanup Responsibilities Act.

**ectotherm** An organism that cannot regulate its internal body temperature, and whose body temperature reflects the temperature of the environment. Fish and reptiles are ectotherms.

**ED** (1) See “electrodialysis (ED).” (2) Effective dose.

**EDAT** Environmental data acquisition telemetry.

**EDB** See “ethylene dibromide (EDB).”

**EDC** Endocrine-disruptive chemical.

**eddy** A vortex-like motion of a fluid running contrary to a main current.

**Eddyflow** High rate upflow clarifier by Gravity Flow Systems, Inc.

**EDF** Environmental Defense Fund.

**EDGE II™** Graded-cell catalyst by Alzeta Corp.

**EDGE Plus™** VOC concentrator by Alzeta Corp.

**EDGE QR™** Flameless VOC oxidizer by Alzeta Corp.

**EDGE SB™** Thermal oxidizer by Alzeta Corp.

**Edge Track** Drum filter cloth alignment mechanism by Baker Process.

**EDI** Environmental Dynamics, Inc.

**EDI** See “electrodeionization (EDI).”

**EDL** Estimated detection limit.

**EDR** See “electrodialysis reversal (EDR).”

**EDS** European Desalination Society.

**EDSTAC** Endocrine Disruptor Screening and Testing Advisory Committee.

**EDTA** Ethylenediaminetetraacetic acid. A chelating agent.

**Eductogrit** Aerated grit chamber by USFilter/Aerator Products.

**Edur** Centrifugal pump for dissolved air flotation by Stanley Pump & Equipment Inc.

**Edward & Jones** Filter press products marketed by USFilter/Asdor.

**EDZ** Emission density zoning.

**EEA** Energy and environmental analysis.

**EECs** Estimated environmental concentrations.

**EER** Excess emission report.

**EERU** Environmental emergency response unit.

**EESI** Environment and Energy Study Institute.

**EESL** Environmental ecological and support laboratory.

**EF** Emission factor.

**effect** One of several units of an evaporator, each of which operates at successively lower pressures.

**effective BOD (EBOD)** A measurement of wastewater strength which has been adjusted for elevated temperatures by increasing the standard BOD by 7% for each degree C rise above a temperature of 20°C.

**effective rainfall** A rainfall that produces surface runoff.

**effective size (ES)** A method of characterizing filter sand where the effective size is equal to the sieve size, in millimeters, which will pass 10%, by weight of the sand.

**effective stack height** The sum of the plume rise and physical stack height at which particulates in a stack emission begin to settle to the ground after discharge.

**Effizon®** Ozone production technology by PCI-Wedeco Environmental Technologies, Inc.

**effluent** Partially or completely treated water or wastewater flowing out of a basin or treatment plant.

**effluvium** Byproducts of food and chemical processes, usually in the form of wastes.

**EFTC** European Fluorocarbon Technical Committee.

**EG&G Biofiltration** Former name of AMETEK Rotron Biofiltration.

**egestion** The act of discharging undigested or indigestible waste material from the body.

**egg-shaped digester** Anaerobic digester characterized by an oval or egg shape which has been reported to promote efficient mixing.

**EGL** See “energy grade line (EGL).”

**EH** An expression of redox potential.

**EHAP** Extremely hazardous air pollutant.

**EHS** (1) Extremely hazardous substance. (2) Environmental health and safety.

**EI** Emissions inventory.

**EIA** Environmental impact assessment.

**EIC** European International Contractors.

**EIL** Environmental impairment liability.

**Eimco**<sup>®</sup> Water and wastewater treatment product line by Baker Process.

**EimcoBelt**<sup>®</sup> Continuous belt vacuum filter by Baker Process.

**EimcoMet** Molded polypropylene components by Baker Process.

**EIMIX**<sup>®</sup> Digester mixer by Baker Process.

**EIR** Environmental impact report.

**EIS** Environmental impact statement.

**EIS/AS** Emissions inventory system/area source.

**EIS/PS** Emissions inventory system/point source.

**EJ** See “environmental justice (EJ).”

**ejector** A device that uses steam, air, or water under pressure to move another fluid by developing suction through the use of a venturi. Sometimes referred to as an “eductor” or “jet pump.”

**EKA** See “electrokinetic analysis (EKA).”

**Ekman water bottle** A tubular device used to sample water at selected depths.

**EL** Exposure level.

**El Niño** A climatic cycle resulting in warm, stormy weather in the Pacific caused by the warming of surface waters in the eastern Pacific Ocean.

**El Niño/Southern Oscillation (ENSO)** The complete term for the “El Niño” climatic cycle which is thought to result from a “Southern Oscillation” circulation pattern in the atmosphere.

**El Tor** A biotype of the *Vibrio cholerae* bacterium which takes its name from the El Tor quarantine camp in Sinai, Egypt where it was first isolated in 1906.

**Elados**<sup>®</sup> Electronically controlled, electric motor-driven diaphragm pumps by PennProcess Technologies, Inc.

**Elasti-Liner**<sup>®</sup> Containment liner material by KCC Corrosion Control Co.

**elastomer** Synthetic material which is elastic or resilient and similar in structure, texture, and appearance to natural rubber.

**Elastox**<sup>®</sup> Membrane air diffuser by Baker Process.

**Elbac** Wastewater bioaugmentation product by Exceltec International Corp.

**Elbow Rake** Hydraulically operated trash rake by the former Acme Engineering Co., Inc.

**Elcat** Disinfection system product line by USFilter/Electrocatalytic.

**Electraflote** Sludge thickener using electrolysis-generated bubbles formerly offered by Ashbrook Corp.

**electric arc furnace dust (EAFD)** A byproduct of the production of steel using electric arc furnaces, usually containing heavy metals.

***Electrocatalytic, Inc.*** Former name of USFilter/Electrocatalytic.

**electrochemical corrosion** Corrosion brought about by electrode reactions.

**electrocoagulation** A wastewater treatment process where a direct current is used to precipitate heavy metals with ferrous hydroxides as metal hydroxides.

**electrodeionization (EDI)** A water treatment process combining an electro dialysis membrane process with an ion exchange resin process to produce high purity, demineralized water.

**electrodialysis (ED)** The separation of a solution's ionic components through the use of semipermeable, ion-selective membranes operating in a DC electric field.

**electrodialysis reversal (EDR)** A variation of the electro dialysis process using electrode polarity reversal to automatically clean membrane surfaces.

**electrokinetic analysis (EKA)** Method of measuring zeta potential at surface-liquid interfaces.

**electrolysis** The passage of electric current through an electrolyte resulting in chemical changes caused by migration of positive ions toward the cathode and negative ions toward the anode.

**electrolyte** A substance that dissociates into two or more ions when it dissolves in water.

***Electromat*** Electro dialysis equipment by Ionics, Inc.

***Electromedia***<sup>®</sup> Processed mineral filter media by Filtronic, Inc.

**electrometric titration** An acid or base titration where a pH meter is used for measuring end points.

**electron beam irradiation** An oxidation process where compounds present in an aqueous solution are irradiated with high energy electrons produced by an electron accelerator to form water, carbon dioxide, and inorganic salts as end products. Also called an "e-beam."

**electron microscope** A microscope that utilizes electromagnets as lenses and electrons instead of light rays to achieve a very high magnification.

**electronic-grade water** Water used in the production of microelectronic devices which meets ASTM D-19 standards for resistivity, silica concentration, particle count, and other criteria.

**electrophoresis** The movement of charged particles in a solution or suspension when an electric field is applied to them.

**electrostatic precipitator (ESP)** Air cleaning system that imparts an electrical charge to airborne particles so that they can be removed by attraction to elements of opposite polarity.

**electrotechnologies** Electrically-driven technologies used in waste source reduction, resource recovery, and end-of-pipe waste management and treatment.

**elevated storage tank** A water storage reservoir supported by a column or tower.

***Elf Atochem*** Former name of Atochem North America, Inc.

***Elf/Anvar*** Oil/condensate coalescer-type oil/water separator by Graver Co.

**ELI** Environmental Law Institute.

***EloxMonitor***<sup>™</sup> On-line COD monitor by Anatel Corp.

***Eltech*** Former name of Exceltec International Corp.

**eluant** A liquid used to extract one material from another.

**elutriation** The process of washing sludge with water to remove organic and inorganic components to reduce chemical dosages required for additional treatment.

**elutriator** An extension in an evaporator vapor body to thicken the solids slurry to minimize the loss of liquor.

**EM** See “Enhanced Monitoring (EM).”

**EMAS** Enforcement management and accountability system. Ecomanagement and auditing scheme.

**EMC** Emission reduction credits.

**emery** See “alumina.”

**Emery-Trailigaz** Ozone equipment supplier acquired by Praxair-Trailigaz Ozone Co.

**Emerzone<sup>®</sup>** Ozone-generating systems by Praxair-Trailigaz Ozone Co.

**EMI** Electromagnetic interference.

**emission** Gas-borne particles or pollutants released into the atmosphere.

**emission cap** A limit designed to prevent projected growth in emissions from existing and future stationary sources from eroding any mandated reduction.

**emissions trading** U.S. EPA policy allowing a company to decrease pollution emissions from a facility while increasing levels at another as long as the total results are equal to, or less than the previous limits.

**EMP** Electromagnetic pulse.

**emphysema** A chronic, irreversible disorder of the lungs characterized by destruction of the alveoli and resulting in shortness of breath.

**empty bed contact time (EBCT)** A measure of time that a water is in contact with the treatment medium calculated by dividing the empty volume in a contactor by the flow rate.

**EMR** Environmental management report.

**EMR<sup>TM</sup>** Electrolytic metal recovery system by Kinetico Engineered Systems, Inc.

**EMS** Environmental management system.

**Emscher fountain** Another term for the “Imhoff tank,” reflecting the part of Germany where this sewage treatment device was developed.

**EMSL** Environmental monitoring support laboratory.

**EMTS** (1) Environmental monitoring testing site. (2) Exposure monitoring test site.

**emulsifying agent** An agent that aids in creating and maintaining an emulsion by altering the surface charge of droplets to prevent their coalescence.

**emulsion** A heterogeneous mixture of two or more mutually insoluble liquids that would normally stratify according to their specific gravities.

**emulsion breaker** A demulsifying agent that breaks an emulsion by neutralizing the surface charge of the emulsified droplets to allow their coalescence.

**emulsion breaking** The use of heat, acids, oxidizing agents, or other chemicals to break an oil/water emulsion.

**emulsion polymer** Dispersions of polymer particles in a hydrocarbon oil or light mineral oil used for conditioning sludge.

**encapsulation** The complete enclosure of a waste in another material to isolate it from the external effects of air and water.

**Encore®** Mechanical diaphragm metering pump by USFilter/Wallace & Tiernan.

**encrustation** A covering, crust, or crust-like material on the surface of an object.

**end point** The final state after a chemical or biological reaction is complete.

**endangered species** Animals, birds, fish, plants, or other living organisms threatened with extinction by manmade or natural changes in their environment.

**endemic** Restricted to a particular area or locality.

**endocrine** Describing any gland that secretes hormones directly into the bloodstream rather than through a duct or directly into an organ.

**endocrine disruptor** An external chemical substance or mixture that alters the structure or function of the endocrine system and causes adverse effects.

**endogenous respiration** Bacterial growth phase where microbes metabolize their own protoplasm without replacement due to low concentrations of available food.

**endospore** A bacterial spore formed within a cell and extremely resistant to heat and other harmful agents.

**endotherm** An organism with the ability to maintain a constant body temperature. Mammals are endotherms.

**endothermic** A process or reaction that takes place with absorption of heat.

**endotoxin** A toxin, or poisonous substance, present in bacteria that is released during cell lysis.

**endrin** a pesticide toxic to freshwater and marine aquatic life that produces adverse health effects in domestic water supplies.

**Endura™** Wastewater treatment products by Aqua-Aerobic Systems Inc.

**Endurance™** Conductivity and resistivity sensor by Rosemount Analytical, Inc.

**Endurex** Coarse bubble diffuser by Parkson Corp.

**Enelco** Former Environmental Elements Co. water treatment product line acquired by Infilco Degremont, Inc.

**energy grade line (EGL)** The line joining the elevations of the energy heads.

**Energy Mix** Rapid mix unit by Walker Process Equipment.

**energy recovery** The retrieval of waste energy for some beneficial use.

**energy recovery turbine (ERT)** A device used to recover pressure energy from reverse osmosis brine streams.

**Engler** A scale for indicating viscosity.

**enhanced coagulation** A modified coagulation process relying on the addition of excess coagulants to achieve increased removals of natural organic matter.

**Enhanced Monitoring (EM)** Clean Air Act Amendment requirement for facilities to monitor emissions to certify compliance with permitted levels.

**Enhanced Surface Water Treatment Rule (ESWTR)** An EPA drinking water regulation under development to include *Cryptosporidium* within the scope of the Surface Water Treatment Rule.

**Enning ESD** Egg-shaped anaerobic digesters by CBI Walker, Inc. (U.S. licensee), Enning (German licensor).

**enrichment** The addition of nutrients such as nitrogen, phosphorus, or carbon compounds from sewage effluent or agricultural runoff to surface water, which greatly increases the growth potential for algae and other aquatic plants.

**ENRO™** Membrane elements by Osmosis Technology, Inc.

**ENSO** See “El Niño/Southern Oscillation.”



**EnSys** Immunoassay product line by Strategic Diagnostics, Inc.

**enteric** Intestinal, or of intestinal, origin.

**enteric bacteria** Bacteria that inhabit the gastrointestinal tract of warm-blooded animals.

**Enterolert™** Reagent for *enterococci* detection by IDEXX Laboratories, Inc.

**enterotoxin** A toxin or microbe that causes dysfunction in the human gastrointestinal tract.

**enterovirus** A group of viruses including polio and hepatitis A viruses that replicates initially in the cells of the enteric tract.

**Enterprise** Floating aspirating aerator by Air-O-Lator Corp.

**Enterprise™** Regenerative thermal oxidizer by Megtec Systems, Inc.

**enthalpy** The total heat content of a liquid, vapor, or body.

**entrainment** (1) The incorporation of small organisms, including the eggs and larvae of fish and shellfish, into an intake system. (2) The carryover of droplets of water with vapor produced during evaporation.

**entrainment separator** See “mist eliminator.”

**entropy** A measure of unavailable energy of an isolated thermodynamic system.

**En Vessel Pasteurization™** Lime stabilization and pasteurization sludge treatment process to further reduce pathogens by RDP Technologies, Inc.

**Enviro-Blend®** Specialty chemicals for heavy metal waste treatment by American Minerals, Inc.

**EnviroDisc** Rotating biological contactor by Walker Process Equipment.

**Envirofab** Former manufacturer of wastewater treatment equipment.

**ENVIROFirst™** Sodium carbonate peroxyhydrate granules by Solvay America.

**EnviroGard™** Chemical screening test kit by Strategic Diagnostics, Inc.

**Enviromat** Wastewater treatment systems by Ionics, Inc.

**environment** Water, air, and land and the interrelationship that exists among and between water, air, and land and all living things.

**environmental audit** An independent assessment of the current status of a party’s compliance with applicable environmental requirements or a party’s environmental compliance policies, practices, and controls.

**Environmental Elements** Equipment manufacturer whose Water Treatment Division product line was acquired by Infilco Degremont, Inc.

**environmental impact assessment (EIA)** A method of analysis that attempts to predict probable repercussions of a proposed development on the social and physical environment of the surrounding area.

**environmental impact statement** A detailed written report which identifies and analyzes the environmental impact of a proposed action.

**environmental indicator** A measurement, statistic, or value that provides a proximate gauge or evidence of the effects of environmental management programs or the state or condition of the environment.

**environmental justice (EJ)** The fair treatment and meaningful involvement of all people with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

**Environmental Protection Agency (EPA)** A U.S. agency with primary responsibility for enforcing federal environmental laws.

**environmental racism** A belief that racism, whether intentional or unintentional, underlies variation in the distribution of environmental pollution.

**Enviropac** Rotating biological contactor by Walker Process Equipment.

**Enviropax** Tube settlers by Enviropax, Inc.

**EnviroQuip International** Former name of USFilter/Diffused Air Products Group.

**Enviro-Seal™** Valve packing system to prevent fugitive air emissions by Fisher Controls International, Inc.

**Envirovalve** Telescopic valve by USFilter/Diffused Air Products Group.

**enzyme** Organic catalysts that convert a substrate or nutrient to a form which can be transported into a cell.

**EOP** End-of-pipe.

**EOS** Predecessor company of USFilter/Operating Services.

**EP** (1) Environmental profile. (2) European Pharmacopoeia.

**EPA** See “Environmental Protection Agency (EPA).”

**EPA200** The EPA 200 series of methods for chemical analysis (inorganic) of water and wastes.

**EPA500** The EPA 500 series of methods for organic compounds in drinking water.

**EPA600** The EPA 600 series of methods for analysis of pollutants under the Clean Water Act.

**EPAA** Environmental Programs Assistance Act.

**EPC** Engineer, procure, and construct.

**EPCO™** Rotating biological contactors by USFilter Corp.

**EPCRA** Emergency Planning and Community Right to Know Act.

**ephemeral** Short-lived.

**ephemeral streams** Streams in which no flow is common that only flow in response to precipitation.

**EPI** Environmental Policy Institute.

**EPIC™** Enhanced polymer control system by Norchem Industries.

**epidemic** An outbreak of disease affecting many people at one time.

**epidemiology** The study of the incidence, distribution, and control of disease in a population.

**epilimnion** The upper layer in a stratified lake that results from varying water densities.

**epm** See “equivalents per million (epm).”

**EPNL** Effective perceived noise level.

**EPRI** Electric Power Research Institute.

**EPS** Eco Purification Systems USA, Inc.

**Epsom salt** Hydrated magnesium sulfate having cathartic properties; also used in leather tanning and textile dyeing. Chemical formula is  $MgSO_4 \cdot 7H_2O$ .

**EPTC** Extraction procedure toxicity characteristic.

**EQ** See “equalization (EQ).”

**EQL** See “estimated quantitation limit (EQL).”

**equalization (EQ)** The process of dampening hydraulic or organic flow variations so that nearly constant conditions can be achieved.

**equalization basin** A basin or tank used for flow equalization.

**Equalizer®** Blower by Tuthill Pneumatics Group.

**equator** An imaginary circle around the earth that divides the earth's surface into the Northern and Southern Hemispheres and is equally distant at all points from the North and South Poles.

**equivalent weight** The weight of a compound that contains 1 gram atom of available hydrogen or its chemical equivalent, determined by dividing the molecular weight of a solute by the number of hydrogen or hydroxyl ions in the undissolved compound.

**equivalents per million (epm)** Ionic concentration determined by dividing an ion's concentration in ppm by its equivalent weight.

**ER** Energy recovery.

**ERAMS** Environmental radiation ambient monitoring system.

**ERC** (1) Emissions reduction credit. (2) Environmental Research Center.

**ERDA** Energy Research and Development Administration.

**erg** A unit of work or energy where 1 erg is equal to 10,000,000 joule.

**ERL** Environmental research laboratory.

**Erlenmeyer flask** A bell-shaped container used in laboratories to heat and mix chemicals.

**ERNS** Emergency response notification system.

**erosion** Wearing away of land by running water, waves, wind, or glacial activity.

**erosion corrosion** An attack on a material consisting of simultaneous erosion and corrosion through the effect of a rapidly flowing fluid.

**ERT** See "energy recovery turbine (ERT)."

**ES** See "effective size (ES)."

**ES<sup>TM</sup>** Electric straight-through thermal oxidizer by Thermatrix, Inc.

**ESA** Endangered Species Act.

**escarpment** A line of steep slopes or cliffs caused by erosion or faulting.

***Escherichia coli (E. coli)*** Coliform bacteria of fecal origin used as an indicator organism in the determination of wastewater pollution.

**ESD<sup>TM</sup>** Egg-shaped anaerobic digesters by CBI Walker, Inc. (U.S. licensee), Enning (German licensor).

**ESH** Environmental safety and health.

**ESP** See "electrostatic precipitator (ESP)."

**ESP<sup>®</sup>** Sludge drying and pelletization system by Wheelabrator Water Technologies, Inc.

**ESPA<sup>TM</sup>** Low pressure polyamide membrane products by Hydranautics.

**ESSD<sup>TM</sup>** Engineered stainless steel design filter washtroughs by USFilter/General Filter.

**ESSI** EnviroSystems Supply.

**esters** Organic compounds produced by the reaction of an acid with an alcohol. Esters are often used in synthetic fragrances, industrial solvents, and the synthesis of plastics. Animal fats and vegetable oils are also esters.

**estimated quantitation limit (EQL)** The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

**estuary** A semi-enclosed coastal water body at the mouth of a river in which the river's current meets the ocean's tide, mixing fresh and salt water.

**ESWTR** See “Enhanced Surface Water Treatment Rule (ESWTR).”

**ESZ** Electrical sensing zone technology used in some particle counter sensors.

**ET** (1) See “evapotranspiration (ET).” (2) Emissions trading.

**ethanoic acid** See “acetic acid.”

**ethanol** An inflammable organic compound formed during the fermentation of sugars. Chemical formula is  $C_2H_5OH$ .

**ethene** See “ethylene.”

**ethylene** A colorless, flammable, gas used in the manufacture of organic chemicals and plastics, and as a plant hormone to hasten the ripening of fruits. Chemical formula is  $H_2C:CH_2$ .

**ethylene dibromide (EDB)** A toxic, carcinogenic chemical used as an agricultural fumigant and in certain industrial processes.

**ethylene glycol** A colorless liquid used as an antifreeze and solvent. Chemical formula is  $HOCH_2CH_2OH$ .

**etiologic agent** A viable microorganism, or its toxin, that causes, or may cause, human disease.

**ETS** Environmental tobacco smoke.

**E-Tube®** Wet electrostatic precipitator by Geenergy International Corp.

**ETV Program** Environmental Technology Verification Program by the U.S. EPA to identify promising, commercially ready pollution prevention technologies.

**EU** Endotoxin units.

**EUP** End-use product.

**euphotic zone** The upper layer of water in a natural waterbody through which sunlight can penetrate.

**Euroform** Mist eliminators by Munters.

**eutectic** Easily melted.

**eutrophic lake** A lake with an abundant supply of nutrients, excessive growth of floating algae, and an anaerobic hypolimnion.

**eutrophication** Nutrient enrichment of water, causing excessive growth of aquatic plants and eventual deoxygenation of the water body.

**Ev\*ne/Scent™** Waterless vapor odor control system by Hinsilblon Laboratories.

**Eva** Back-raked bar screen by Brackett Geiger.

**Evap-O-Dry** Wastewater evaporation system by Fen-Tech Environmental, Inc.

**evaporation** The process in which water is converted to a vapor that can be condensed.

**evaporation pond** A natural or artificial pond used to convert solar energy to heat to accomplish evaporation.

**evaporation rate** The mass quantity of water evaporated from a specified water surface per unit of time.

**evaporator** A device used to heat water to create a phase change from the liquid to the vapor phase.

**evaporimeter** A meteorological instrument used to measure natural rates of evaporation.

**evaporite** A mineral produced as a result of evaporation.

**evapotranspiration (ET)** Water withdrawn from the soil by evaporation and plant transpiration.

**evapotranspiration treatment system** A wastewater treatment system utilizing surface evaporation and plant transpiration.

**Evita**<sup>®</sup> Dissolved oxygen meter by Danfoss/Instrumark.

**EVT** Belt filter press by Baker Process.

**Eweson**<sup>®</sup> Compartmentalized rotary digester by Bedminster Bioconversion Corp.

**EWPCA** European Water Pollution Control Association.

**ex situ** Treatment or disposal methods that require movement of contaminated material.

**Excel**<sup>®</sup> Cartridge filtration product line by Eden Equipment Co.

**Excel**<sup>®</sup> High charge cationic flocculant by Cytec Industries, Inc.

**excess lime-soda softening** The process of feeding excess lime and soda ash in addition to that required for lime-soda softening to further reduce hardness. Also called “railway softening.”

**exchange capacity** An ion exchanger unit’s limited capacity for storage of ions.

**excrement** Waste material from the bowels; feces.

**excreta** Waste material excreted from the body.

**excrete** To separate waste material from tissue or blood and eliminate it from the body.

**excretion** The act or process of expelling waste material from the body in urine, feces, perspiration, or expired air.

**excyst** To emerge from a cyst.

**ExEx** Expected exceedance.

**exfiltration** The wastewater leaking from breaks and cracks in a sewer line or manhole.

**exhaustion** The condition that results when activated carbon, ion exchange resin, or other absorbents have depleted their capacity by using all available sites.

**exothermic** A process or reaction which is accompanied by the evolution of heat.

**Exotox**<sup>®</sup> Multi-gas detector by Neotronics of North America.

**expanded metal** An open metal network produced by stamping or perforating sheet metal.

**expansion joint** A joint installed in a structure to allow for thermal expansion or contraction.

**explosion proof (XP)** Designation for a motor or electrical enclosure designed to withstand a gas or vapor explosion within the unit, and to prevent ignition of gas or vapor surrounding the unit by sparks, flashes, or explosions within the unit.

**explosive limits** The amounts of vapor in the air that form explosive mixtures; limits are expressed as lower and upper and give the range of vapor concentrations in the air that will explode if an ignition source is present.

**exposure** The amount of radiation or pollutant present in a given environment that represents a potential health threat to living organisms.

**exposure assessment** Identifying the pathways by which toxicants may reach individuals, estimating how much of a chemical an individual is likely to be exposed to and the number likely to be exposed.

**exposure indicator** A characteristic of the environment measured to provide evidence of the occurrence or magnitude of a response indicator’s exposure to a chemical or biological stress.

**ExpressClean™** Reverse osmosis cleaning service by Coster Engineering.  
**Expressor** Belt filter press by Baker Process.  
**extended aeration process** A variation of the activated sludge process with an increased detention time to allow endogenous respiration to occur.  
**Extendor** Detention tank for polymer mixing systems by Semblex, Inc.  
**extraction steam** Steam removed from a turbine at a pressure higher than the lowest pressure achieved in the turbine.  
**Extractor®** Horizontal belt press by Baker Process.  
**Extractoveyor** Composted sludge conveyor system by Fairfield Service Co.  
**Extreme Duty™** Mechanical digester sludge mixer by WesTech Engineering Inc.  
**extremely hazardous substances** Any of 406 chemicals identified by the EPA as toxic, and listed under SARA Title III. The list is subject to periodic revision.  
**Exxflow™** Crossflow microfiltration system by WesTech Engineering Inc.  
**E-Z™** Batch type centrifuge by Western States Machine Co.  
**E-Z Tray®** Air stripper by QED Environmental Systems, Inc.  
**EZ-BOD™** Sludge stability indicator by Bioscience, Inc.

## F

**F** See “Fahrenheit (F).”  
**F wastes** A class of hazardous wastes categorized from nonspecific sources as established by the EPA and identified in 40 CFR 261.31.  
**F.E.M.S.®** Relational database fugitive emissions management system by Enviro-Metrics.  
**F/M** See “food-to-microorganism ratio (F/M or F:M).”  
**fabric filter** A cloth device that catches dust particles from industrial emissions.  
**FAC** See “free available chlorine (FAC).”  
**face velocity** The linear velocity of air through a filter.  
**facultative bacteria** Microbes with the ability to survive with or without the presence of oxygen.  
**facultative lagoon** A lagoon or pond in which stabilization of wastewater occurs as a result of aerobic, anaerobic, and facultative bacteria.  
**facultative ponds** See “facultative lagoon.”  
**Fahrenheit (F)** A temperature scale on which water’s freezing point is 32° and boiling point is 212°.  
**Fairfield** In-vessel composting system by Fairfield Service Co.  
**falaj** System of surface or subsurface channeling of water fed by wells or springs to provide a community water supply (Arabic).  
**Falco** Catalytic oxidizer by Falmouth Products.  
**fall** A sudden change in the water surface elevation.  
**falling film evaporator** An evaporator with vertical heat transfer surfaces where liquor falling down the surfaces is heated by steam condensing on the other side of the surface.

**fallout** Radioactive debris that settles to earth after a nuclear explosion.

**Fallov<sup>TM</sup>** Sewage shredder by ZMI/Portec Chemical Processing.

**false positive** An erroneous test result indicating that something has a certain property when that property is not present.

**famine** An acute food shortage in an area that leads to malnutrition and starvation.

**Fan/Separator<sup>®</sup>** Fume scrubber by Tri-Mer Corp.

**FAO** Food and Agriculture Organization.

**Faraday's Law** A law stating that the amount of chemical change in an electrolysis process is proportional to the electrical charge passed.

**Farm Gas** Former equipment manufacturer now part of Rosewater Engineering Ltd.

**Fasflo** Floating oil skimmer by Vikoma International Ltd.

**FAST<sup>®</sup>** Fixed activated sludge wastewater treatment plant by Scienco/FAST Systems.

**Fast Flow<sup>®</sup>** Rotary strainer by Alar Engineering Corp.

**Fastek<sup>TM</sup>** Thin layer composite reverse osmosis membrane by Osmonics.

**fathom** A marine unit of length equal to 6 feet (1.8 m).

**fats** Triglyceride esters of fatty acids that are usually solid at room temperature.

**fatty acid** Any of a class of lipids consisting of organic acids having the general formula R.COOH.

**fauna** The animal life of an area or region.

**Favair<sup>®</sup>** Dissolved air flotation product by USFilter/Warren.

**FB<sup>®</sup>** Sodium percarbonate by Solvay America.

**FBC** Fluidized bed combustion.

**FBR** Fluid bed reactor.

**FBS** Fine bar screen by Waste-Tech, Inc.

**FBX** Fixed bed reactor.

**FC** See "fecal coliform (FC)."

**FC/FS** Ratio of fecal coliform to fecal streptococci that indicates if wastewater contamination results from animal or human wastes.

**FDA** Food and Drug Administration.

**FE** Fugitive emissions.

**Fe<sup>3+</sup>** Liquid ferric sulfate by FE3, Inc.

**fecal** Relating to feces.

**fecal coliform (FC)** Coliforms present in the feces of warm-blooded animals, and considered indicators of fecal contamination of water.

**Fecascrew** Screenings screw press by Hydropress Wallender & Co., AB.

**Fecawash** Screenings washing and conveying unit by Hydropress Wallender & Co., AB.

**feces** The excrement of humans and animals.

**Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)** 1972 federal law requiring toxicity testing and registration of pesticides.

**Federal Register** U.S. government daily publication detailing federal business including proposed and final rules and laws.

**Federal Water Pollution Control Act (FWPCA)** The U.S. water control legislation of 1972 amended by the Clean Water Act of 1977.

**feedlot wastes** Solid and liquid wastes from a facility where cattle or other animals are grown for market.

**Feedpac** Coagulant feed system by Nalco Chemical Co.

**feedwater heater** Heat exchangers in which boiler feedwater is preheated by steam extracted from a turbine.

**feedwell** A circular, partitioned section within a clarifier or thickener that receives the feedwater and uniformly distributes it to the basin for sedimentation.

**FEMA** Federal Emergency Management Agency.

**fen** A wetland covered by shallow, stagnant, and usually alkaline water originating from groundwater sources.

**fence-line concentration** Modeled or measured concentrations of air pollutants found at the boundaries of a property on which the pollution source is located.

**Fenton's reagent** A mixture of iron and hydrogen peroxide used in oxidation, coagulation, or metal complexation reactions.

**Feripac** Iron and manganese removal treatment plant by Vulcan Industries, Inc.

**fermentation** The conversion of organic matter to carbon dioxide, methane, and other low molecular weight compounds.

**Ferret™** Oil/water separating pump by QED Environmental Systems, Inc.

**ferric** Relating to or containing iron in which the iron is trivalent or in a higher state of oxidation.

**ferric chloride** An iron salt commonly used as a coagulant. The chemical formula is  $\text{FeCl}_3$ .

**ferric sulfate** An iron salt commonly used as a coagulant. The chemical formula is  $\text{Fe}_2\text{SO}_4$ .

**FerriClear®** Ferric sulfate product by Eaglebrook, Inc.

**Ferri-Floc** Ferric sulfate by Boliden Intertrade, Inc.

**Ferrosand®** Granular filter media used for removal of iron and manganese by Hungerford & Terry, Inc.

**ferrous** Relating to or containing iron in which the iron is divalent or in a lower state of oxidation.

**ferrous sulfate** An iron salt commonly used as a coagulant. The chemical formula is  $\text{FeSO}_4$ .

**Ferover** Reagent chemicals primarily used for iron analysis by Hach Co.

**Ferrozine** Spectrophotometric reagents for iron and iron compounds by Hach Co.

**Ferr-X** Iron removal process by Aquatrol Ferr-X Corp.

**fertilizer** Materials usually containing nitrogen and phosphorous that are added to soil to provide essential nutrients for plant growth.

**fetch** The distance traveled by a wind-generated wave before it reaches the coast-line.

**fetus** An animal embryo in the later stages of development; in humans from the beginning of the third month until birth.

**FFFSG** Fossil-fuel-fired steam generator.

**FGD** See "flue gas desulfurization (FGD)."

**FGH** See "flue gas humidification (FGH)."

**Fibercone Press** Cone-type dewatering press by Thermal Black Clawson.

**FiberFlo™** Cartridge filters by Minntech Fibercor.



**Fibrotex**<sup>®</sup> Backwashable depth filter with steam pasteurization cycle by Smith & Loveless, Inc.

**FID** Flame ionization detector.

**FIDIC** Federation International des Ingenieurs-Conseils.

**FIFRA** See “Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).”

**filamentous growth** Hair-like biological growth of some species of bacteria, algae, and fungi that results in poor sludge settling.

**filamentous sludge** Sludge characterized by excessive growth of filamentous bacteria that results in poor settling.

**Filawound**<sup>®</sup> Pressure vessel for reverse osmosis membranes by Spaulding Composites Co.

**fill-and-draw** Treatment process where a vessel is filled, the reaction occurs, and the contents are withdrawn. Typical of “sequencing batch reactors.”

**FilmShear** Coarse and fine bubble diffusers by USFilter/Aerator Products.

**Filmtec**<sup>®</sup> Reverse osmosis membranes by Dow Chemical Co.

**Filox**<sup>®</sup> Iron, hydrogen sulfide, and manganese removal media by Matt-Son, Inc.

**FiltaBand** Continuous self-cleaning fine screen by Longwood Engineering Co., Ltd.

**filter** A device utilizing a granular material, woven cloth, or other medium to remove suspended solids from water, wastewater, or air.

**Filter AG**<sup>®</sup> Granular filter media used to adsorb tastes and odors by Clack Corp.

**filter aid** A polymer or other material added to improve the effectiveness of the filtration process.

**filter area** The effective area of a filter through which liquid passes, usually expressed in square meters (square feet).

**filter backwash rate** The volume of water per unit of time per unit of area required to flow backwards through a filter for cleaning.

**filter bottom** See “underdrain.”

**filter cake** The layer of solids that is retained on the surface or upstream side of a filter.

**Filter Cel**<sup>®</sup> Diatomaceous earth filter media by Celite Corp.

**filter cloth** Cloth used as the filter media on a vacuum filter.

**filter cycle** The filter operating time between backwashes. Also called “filter run.”

**filter fly** See “*Psychoda* flies.”

**filter gallery** A passageway to provide access for installation and maintenance of underground filter pipes and valves.

**filter loading, hydraulic** The volume of liquid applied per unit area of the filter bed per unit of time.

**filter loading, organic** The pounds of BOD applied per unit area of the filter bed per unit of time.

**filter press** A dewatering device where water is forced from the sludge under high pressure.

**filter ripening** The gradual improvement in filter performance at the start of a filter run as solids deposition begins and serves to enhance filtration.

**filter run** See “filter cycle.”

**filter strip** Strip or area of vegetation used for removing sediment, organic matter, and other pollutants from runoff and wastewater.

**Filterrite®** Cartridge filter product line by USFilter/Filtration & Separation.

**Filtermate** Filtration coagulant by BetzDearborn-Argo District.

**FilterNet™** Net fabric composite by SLT North America, Inc.

**Filterpak™** Plastic biological filter media by USFilter/General Filter.

**Filter-Pak™** Gravity sand filter by Graver Co.

**FilterSil®** Filtration sands by Unimin Corp.

**filter-to-waste** An operational procedure in filtration where the filtrate is produced immediately after backwash is wasted.

**Filterworx™** Automated filter control system by F.B. Leopold Co., Inc.

**Filtomat®** Self-cleaning cooling water filters by Orival, Inc.

**Filtra-Matic™** Pressure leaf filter by USFilter/Whittier.

**FiltraPak** Packaged waste treatment and liquid-solids separation unit by Diagenex, Inc.

**Filtrisorb®** Granular-activated carbon adsorption manufactured by Calgon Carbon Corp.

**filtrate** Liquid remaining after removal of solids through filtration.

**filtration rate** A measurement of the volume of water applied to a filter per unit of surface area in a stated period of time.

**Filtroba®** Helical pressure filter element by Baker Process/Ketema.

**Filtros®** Fine bubbles diffusers by Ferro Corp.

**FIM** Friable insulation material.

**Fimat** Electronic pulse control fish repelling system by Brackett Geiger.

**final clarifier** See “secondary clarifier.”

**final closure** The closure of all hazardous waste management units at a facility in accordance with all applicable requirements.

**final cover** Cover material that is applied upon closure of a landfill and is permanently exposed to the surface.

**final effluent** The effluent from the final unit treatment process at a wastewater treatment plant.

**fine bubble aeration** Method of diffused aeration using fine bubbles to take advantage of their high surface areas to increase oxygen transfer rates.

**fine sand** Sand particles with diameters that usually range from 0.3 to 0.6 mm.

**fine screen** A screening device usually having openings less than 6 mm.

**FineAir** Ceramic fine bubble diffuser by Parkson Corp.

**finer** Particles at the lower end of a range of particle sizes.

**finished water** Water that has passed through a treatment plant in which all treatment processes are completed or “finished” and the water is ready to be delivered to consumers.

**Fipro** Electronic pulse control fish repelling system by Brackett Geiger.

**firetube boiler** Boiler in which the flame and hot gases are confined within tubes arranged in a bundle within a water drum.

**first draw** The water that comes out when a tap is first opened, likely to have the highest level of lead contamination from plumbing materials.

**first flush** Surface runoff at the beginning of a storm that often contains much of the pollution/solid matter washed from the streets and other surfaces.

**first order reaction** A reaction in which the rate of change is directly proportional to the first power of the concentration of the reactant.

**first-stage BOD** See “carbonaceous biochemical oxygen demand (CBOD).”

**firth** A river estuary or wide inlet to the sea (Scottish).

**Fischer & Porter** Former name of Bailey-Fischer & Porter.

**fish ladder** A structure that permits fish to bypass a dam using a series of baffled chambers installed at progressively lower elevations to provide a velocity against which fish can more easily swim.

**fish screen** (1) A screen at the head of an intake channel to prevent fish from entering. (2) A traveling water screen modified to remove impinged fish and return them to the water body.

**fisheyes** A condition resulting from the improper mixing of dry polymer and water which results in the formation of lumps of undispersed polymer that resemble fisheyes.

**fission** (1) The splitting of the nucleus of an atom into two or more nuclei with a concurrent release of energy. (2) A form of asexual reproduction where the parent organism splits into two independent organisms.

**Fitch Feedwell** Clarifier feedwell with three horizontal chambers by GL&V/Dorr-Oliver, Inc.

**FIX<sup>TM</sup>** Heavy metals treatment system by ATA Technologies Corp.

**fix, sample** A sample is “fixed” in the field by adding chemicals that prevent water quality indicators of interest in the sample from changing before laboratory measurements are made.

**fixation** The stabilization or solidification of a waste material by involving it in the formation of a stable solid derivative.

**fixed cover** Stationary anaerobic digester cover that allows a constant digester tank volume to be maintained.

**fixed film process** Biological wastewater treatment process where the microbes responsible for conversion of the organic matter in wastewater are attached to an inert medium such as rock or plastic materials. Also called “attached growth process.”

**fixed matter** See “fixed suspended solids.”

**fixed solids** Inorganic content of suspended and dissolved solids in a water or wastewater sample, determined after heating the sample to 600°C.

**fixed suspended solids** Inorganic content of suspended solids in a water or wastewater sample, determined after heating the sample to 600°C.

**fixed-bed porosity** The ratio of void volume to total bed volume of a granular media filter.

**fjord** A narrow inlet of the sea bordered by cliffs or highlands. Also called a “fiord.”

**flagellates** Microorganisms that move by the whipping action of a tail-like projection called a flagella.

**flammable** Easily set on fire.

**flammable liquid** Any liquid having a flash point below 38°C (100°F).

**flange** A projecting rim or edge used for attachment with another object.

**flap valve** A valve that is hinged on one edge and opens in the direction of normal flow and closes with flow reversal.

**flare** A control device that burns hazardous materials to prevent their release into the environment; may operate continuously or intermittently, usually on top of a stack.

**flash** The portion of a fluid converted to vapor when its pressure is reduced below the saturation pressure.

**flash distillation** See “multistage flash evaporation (MSF).”

**flash dryer** Sludge drying process that involves pulverizing sludge in a cage mill or by an atomized suspension technique in the presence of hot gases.

**flash evaporator** A distillation device where saline water is vaporized in a vessel under vacuum through pressure reduction. See also “multistage flash evaporation.”

**flash mixing** Motor-driven stirring devices designed to disperse coagulants or other chemicals instantly, prior to flocculation.

**flash point** The temperature at which a substance ignites.

**flashing** The process of vaporizing a fluid by pressure reduction rather than temperature elevation.

**Flashvap** Flash evaporator by Licon, Inc.

**flashy** Characterization of rapidly changing conditions.

**flavor profile analysis** An analysis profiling the matrix of odors in a water sample.

**Fletcher** Filtration division of Edwards & Jones, Inc.

**FlexAir™** Fine pore membrane diffuser by Environmental Dynamics Inc.

**Flex-A-Tube®** Fine bubble aeration diffuser by Parkson Corp.

**FlexDisc** Fine bubble membrane diffuser by USFilter/Diffused Air Products Group.

**FlexDome** Fine bubble membrane diffuser by USFilter/Diffused Air Products Group.

**Flexi Jet** Air sparging power mixer by USFilter/Aerator Products.

**Flexi-Fabric** Filter press filter fabric by Baker Process.

**Flexiflo** High speed surface aerator by USFilter/Aerator Products.

**Flexi-Jet** Spray nozzles for sand filter rotary surface skimmer by F.B. Leopold Co., Inc.

**Flex-i-liner®** Sealless self-priming rotary pumps by Vanton Pump & Equipment Corp.

**Fleximix** High speed surface aerator by USFilter/Aerator Products.

**Flexipak®** Submerged biofilm sewage treatment system by Gyulavari Consulting Kft.

**Flexishaft™** Progressing cavity pump by MGI Pumps, Inc.

**FlexKlear®** Inclined plate settler by Baker Process.

**FlexKleen™** Filter underdrain nozzles by Baker Process.

**FlexLine™** Nonbuoyant tubular diffuser by USFilter/Diffused Air Products Group.

**Flexmate®** Skid-mounted water purification vessel by USFilter/Rockford.

**Flexofuser**<sup>®</sup> Fine bubble diffuser with tube body and fine sheath by USFilter/Diffused Air Products Group.

**Flexoplate**<sup>™</sup> Membrane type medium bubble diffuser by USFilter/Diffused Air Products Group.

**Flex-O-Star**<sup>®</sup> Batch wastewater treatment and filtration system by Alar Engineering Corp.

**FlexRO**<sup>®</sup> Skid-mounted reverse osmosis system by USFilter/Rockford.

**FlexRO Mobile**<sup>®</sup> Mobile, skid-mounted reverse osmosis systems by USFilter/Rockford.

**Flexscour**<sup>®</sup> Stainless steel filter underdrain for air-water backwash by Baker Process and Anthratech Western, Inc.

**flight** (1) The horizontal scraper on a rectangular sludge collector. (2) The helical blade on a screw pump.

**Flight Guide** Nonmetallic wear shoes for sludge collector flights by Trusty Cook, Inc.

**Flint Rim** Cast sprocket with hardened chill rim by USFilter/Envirex.

**FLM** Federal land manager.

**float** The concentrated solids at the surface of a dissolved air flotation unit.

**float switch** An electrical or pneumatic switch operated by a float in response to changing liquid levels.

**floatables** See “floatables.”

**FloatAll** Dissolved air flotation system by Walker Process Equipment.

**floating cover** Anaerobic digester tank cover free to move up or down to change the total internal capacity of the tank in response to sludge additions or withdrawals.

**floating gas holder** Anaerobic digester tank cover that floats on a cushion of gas and moves up or down to change the total internal capacity of the tank in response to changes in gas volume.

**Floating Plate**<sup>®</sup> Ozone generation technology by Pacific Ozone Technology, Inc.

**Float-Treat**<sup>®</sup> Dissolved air flotation system by USFilter/Envirex.

**Flo-Buster**<sup>™</sup> Organic solids agitator/separator by Enviro-Care Co.

**floc** Small, gelatinous masses formed in water by adding a coagulant or in wastewater through biological activity.

**Floc Barrier**<sup>®</sup> Inclined settling tubes for clarifiers by Graver Co.

**Floc Tunnel**<sup>®</sup> Deep bed filter by Hazleton Environmental, Inc.

**flocculant** An organic polyelectrolyte used alone or with metal salts to enhance floc formation and increase the strength of the floc structure.

**flocculant settling** Phenomenon referring to sedimentation of particles in a dilute suspension as they coalesce or flocculate during sedimentation. Also called “type II settling.”

**flocculated suspended solids (FSS)** The suspended solids remaining in a sample’s supernatant after 30 minutes of settling with flocculation.

**flocculation** Gentle stirring or agitation to accelerate the agglomeration of particles to enhance sedimentation or flotation.

**flocculator** A device used to enhance the formation of floc through gentle stirring or mixing.

**Flocide**<sup>®</sup> Sanitizer additive by BioLab Inc.

**Floclean** Membrane cleaning product by BioLab Inc.

**Floclear** Solids contact clarifier by USFilter/Aerator Products.

**Flocon**<sup>®</sup> Reverse osmosis feedwater additive by BioLab Inc.

**Flo-Conveyor**<sup>™</sup> Screenings conveyor by Enviro-Care Co.

**Flocor** Crossflow random fill media by the USFilter/Smogless.

**Floc-Pac**<sup>™</sup> Compact flocculant packages by American Cyanamid Co.

**Flopress** Belt filter press formerly offered by Infilco Degremont, Inc.

**Flocsettler** Combination flocculator/clarifier by Amwell, Inc.

**Flocsillator** Horizontal oscillating flocculator by Baker Process.

**FlocTreator** Coagulation and flocculation unit by the former PWT Americas.

**Floctrol** Multiple stage, horizontal shaft, paddle flocculators by USFilter/Envirex.

**Flo-Dar**<sup>™</sup> Noncontact area/velocity flowmeter by Marsh-McBirney, Inc.

**Flodry**<sup>®</sup> Closed loop sludge drying process by USFilter/Smogless.

**Flofilter**<sup>™</sup> Water treatment system combining flotation and filtration by Waterlink Separations, Inc.

**FloGard**<sup>™</sup> Stormwater catch basin screen by KriStar Enterprises.

**Flo-Lift**<sup>™</sup> Vertical screenings lift device by Enviro-Care Co.

**Flo-Line** Fine mesh screening machine by Derrick Corp.

**FloMag**<sup>®</sup> Magnesium-based granular, powder, and slurry water treatment products by Martin Marietta Specialties, Inc.

**FloMaker**<sup>™</sup> Submersible mixer by ITT Flygt Corp.

**Flo-Mate** Portable flow meter by Marsh-McBirney, Inc.

**flood plain** The lowland area adjoining inland and coastal waters subject to a 1% or greater chance of flooding in a given year.

**floor sweep** Capture of heavier-than-air gases that collect at floor level.

**Flo-Poke** Portable flow rate instrument by Isco, Inc.

**flora** Plants and plant life of a particular region or period.

**Flo-Screen**<sup>™</sup> Reciprocating rake bar screen by Enviro-Care Co.

**floatables** The floating material in a water or wastewater which must be removed prior to treatment or discharge.

**flotation** A treatment process where gas bubbles are introduced to a water and attach to solid particles creating bubble-solid agglomerates that float to the surface where they are removed.

**flotation thickening** Sludge thickening by means of dissolved air flotation.

**Flotator**<sup>™</sup> Dissolved air flotation system by Baker Process.

**Flotherm**<sup>®</sup> Sludge incineration process by USFilter/Smogless.

**Flo-Tote** Computerized open-channel flow meter by Marsh-McBirney, Inc.

**flotsam** Floating debris resulting from human activity.

**Flottweg** Centrifuge product line by Krauss Maffei Corp.

**flow control valve** A device that controls the rate of fluid flow.

**flow equalization** Transient storage of wastewater for release to a sewer system or treatment process at a controlled rate to provide a reasonably uniform flow.

**Flow Logger** Flow measuring device by Isco, Inc.

**flow rate** The volume or mass of a gas, liquid, or solid material that passes some point in a stated period of time.

**flow splitter** A chamber that divides incoming flow into two or more streams.

**Flo-Ware** Data logging flow meter software by Marsh-McBirney, Inc.

**FlowMAX™** Reverse osmosis system by USFilter.

**Flowminutor™** Horizontal shaft comminutor by Enviro-Care Co.

**FlowSorb™** Granular-activated carbon canisters by Calgon Carbon Corp.

**Flowtrex** Pleated cartridge filter by Osmonics, Inc.

**FLP** Flash point.

**FLPMA** Federal Land Policy and Management Act.

**flue** Any passage designed to carry combustion gases and entrained particulates.

**flue gas** The gases and smoke released from an incinerator's chimney.

**flue gas desulfurization (FGD)** The process of removing sulfur dioxide from exhaust gas, usually by means of a wet scrubbing process.

**flue gas humidification (FGH)** A process to control SO<sub>2</sub> emissions by spraying a water/air mixture into flue gas.

**FluePac™** Powdered activated carbon by Calgon Carbon Corp.

**fluid** Any material or substance which flows or moves whether in a semisolid, liquid, sludge, or gaseous form or state.

**Fluid Dynamics®** Engineered filter system by USFilter/Filtration & Separation.

**Fluid Systems** Membrane products group of Koch Membrane Systems, Inc.

**Fluidactor** Fluid bed sludge incinerator formerly offered by Walker Process Equipment.

**fluidization** The upward flow of a gas or fluid through a granular bed at sufficient velocity to suspend the grains.

**fluidized bed combustion** A method of burning particulate fuel, such as powdered coal, where the fuel is burned after injection into a rapidly moving gas stream.

**fluidized bed furnace** An incinerator or furnace used to incinerate sludge by passing heated air upward through a fluidized sand bed.

**Fluidizer-Minor** Flash dryer by Niro, Inc.

**flume** A channel used to carry water.

**Flump** Floating lagoon pump units by SRS Crisafulli, Inc.

**Fluoretrack** Liquid water tracing dye by Formulabs, Inc.

**fluoridation** The addition of fluoride to drinking water to aid in the prevention of tooth decay.

**fluorimeter** An instrument used to measure the amount of fluorescent materials, dyes, or aromatic hydrocarbons in water.

**fluorocarbons (FCs)** Any of a number of organic compounds analogous to hydrocarbons in which one or more hydrogen atoms are replaced by fluorine. FCs containing chlorine are called chlorofluorocarbons (CFCs).

**fluorosis** A demineralization of tooth enamel caused by excessive ingestion of fluoride by children during the years of tooth calcification which is characterized by brown staining or mottling of the teeth.

**fluorspar** Common source of commercially available fluoride compounds which may be used as a direct source of fluoride for water fluoridation.

**Fluosolids** Fluid bed reactor for sludge disposal by GL&V/Dorr-Oliver, Inc.

**flush tank** A tank in which water is stored for rapid release.

**flush valve** A valve used to expel water and sediment from a pipeline.

**Flush-Kleen®** Nonclogging sewage ejector pump by Yeomans Chicago Corp.

**fluvial** Produced by or found in a river or stream.

**fluvial deposit** Sediment deposited by the actions of a river or stream.

**flux** (1) Flowrate per unit area. (2) Heat transfer rate per unit area.

**fly ash** The noncombustible particles in flue gas.

**Flygt** Pump and mixer products by ITT Flygt Corp.

**Flying Pig** Screenings compacting, dewatering, and conveying unit by Meurer Industries, Inc.

**Flymitec®** Submersible mixing concept by ITT Flygt Corp.

**FMA** Free mineral acidity. See “mineral acidity.”

**FMC Process Additives** Former name of BioLab Inc.

**FMC-MHS** Equipment product line acquired by USFilter/Envirex.

**FmHA** Farmers Home Administration.

**FML** Flexible membrane liner.

**Foam Ban™** Foam control additive by Ultra Additives, Inc.

**Foam-Abator** Foam abatement product by USFilter/Jet Tech.

**Foamtex™** Foam control additive by Ultra Additives, Inc.

**Foamtrol™** Foam control additive by Ultra Additives, Inc.

**fodder crop** A crop grown principally for animal food.

**FOG** Fats, oils, and grease.

**fogging** The application of a pesticide by rapidly heating the liquid chemical so that it forms very fine droplets that resemble smoke or fog.

**Folded Flow™** Enhanced flow scheme used in high rate water/wastewater treatment processes by USFilter/Envirex.

**fomite** Objects that have been contaminated by pathogens from a diseased person and may serve in their transmission.

**FONSI** Finding of no significant impact.

**Font'n Aire®** Floating decorative aerator/fountain by Air-O-Lator Corp.

**food chain** A feeding hierarchy where food energy is passed from primary producers (plants) to primary consumers (herbivores) to secondary consumers (carnivores).

**food chain crops** Crops grown for human consumption and for feed for animals whose products are used for human consumption.

**food crop** Crops grown primarily for human consumption.

**food poisoning** A gastrointestinal disorder caused by bacteria or their toxic products, occurring after consumption of contaminated food.

**food waste** Organic residues generated by the handling, storage, preparation, cooking, and serving of food.

**food web** The complex interconnected network of food chains in a community.

**food-to-microorganism ratio (F/M or F:M)** The ratio of the influent BOD or COD to the volatile-suspended solids concentration in a wastewater treatment aeration tank.

**foot-pound** Unit of measure of work performed by a force of 1 pound acting through a distance of 1 foot.

**forage crop** Crops that can be used as feed by domestic animals by being grazed or cut for hay.



**Forager™** Sponge containing a bonded polymer used to selectively remove heavy metals from water by Dynaphore, Inc.

**force main** The pipeline through which flow is transported from a point of higher pressure to a point of lower pressure.

**forced circulation evaporator** An evaporator in which circulation is maintained by pumping liquid through the heating element with relatively low evaporation per pass.

**forced draft deaerator** Device to remove dissolved gases from solution by blowing an air stream through a packed column countercurrent to downflowing water.

**forebay** A reservoir at the end of a pipeline or channel.

**formaldehyde** A colorless, pungent, and irritating gas, CH<sub>2</sub>O, used chiefly as a disinfectant and preservative and in synthesizing other compounds like resins.

**formalin** A clear, aqueous solution of 37% formaldehyde and a small amount of methanol used as a sanitant.

**FormAsorb™** Activated carbon product by Waterlink/Barnebey Sutcliffe.

**formazin turbidity unit (FTU)** Unit of measure used in turbidity measurement based on a known chemical reaction that produces insoluble particulates of uniform size.

**Fossil Filter™** Stormwater runoff filter by KriStar Enterprises.

**fossil fuel** Natural gas, petroleum, coal, and any form of solid liquid or gaseous fuel derived from such materials for the purpose of creating useful heat.

**fossil water** See “connate water.”

**Fotovap** Evaporator to treat photo processing lab wastewater by Licon, Inc.

**fouling** Condition caused when bacterial growth, colloidal material, or scale forms a deposit on a filter, membrane, or heat transfer surface.

**fouling factor** A design criteria used to allow for some variation of equipment performance due to fouling.

**4-Beam™** Turbidity and suspended-solids measuring instrument by BTG, Inc.

**4-log removal** The removal of 99.99% of a constituent.

**four 9s DRE** Common term for an incinerator destruction and removal efficiency of 99.99%.

**Fourier Transform Infrared Spectrometry (FTIR)** Continuous emissions monitoring system used to identify organic and inorganic compounds in liquids, solids, and gases.

**Fox-Pac** Sanitation system for marine applications by Red Fox Environmental, Inc.

**FP** Fine particulate.

**FPA** (1) Federal Pesticide Act (FPA). (2) See “flavor profile analysis.”

**FPEIS** Fine Particulate Emissions Information System.

**fpm** Feet per minute.

**FPPA** Federal Pollution Prevention Act.

**fps** Feet per second.

**FQPA** Food Quality Protection Act.

**FR** Federal Register.

**fractionation** A distillation method used to separate a mixture of several volatile components of different boiling points in successive stages with each stage removing some proportion of one component.

**Framco International** Product group of ABS Pumps, Inc.

**frazil ice** Granular or spike-shaped ice crystals that form in supercooled water which is too turbulent to permit coagulation into sheet ice.

**free available chlorine (FAC)** The amount of chlorine available as dissolved gas, hypochlorous acid, and hypochlorite ion that is not combined with ammonia or other compounds in the water.

**free available chlorine residual** The concentration of residual chlorine remaining at the end of a specific contact time which is available as dissolved gas, hypochlorous acid, or hypochlorite ion, not combined with ammonia or in another less readily available form.

**free carbon dioxide** The concentration of gaseous carbon dioxide present in water that is not combined in carbonates or bicarbonates.

**free chlorine** See “free available chlorine residual.”

**free chlorine residual** See “free available chlorine residual.”

**free liquids** Liquids which readily separate from the solid portion of a waste under ambient temperature and conditions.

**free mineral acidity (FMA)** See “mineral acidity.”

**free oil** Nonemulsified oil that separates from water, usually in 5 minutes or less.

**free product** A regulated substance present as liquid not dissolved in water.

**free radical** A chemical having an unpaired electron that makes it very reactive.

**free settling** The settling of discrete, nonflocculant particles in a dilute suspension.

**free water knockout (FWKO)** Gravity separation vessel used in an oil field to separate produced water from oil.

**freeboard** The vertical distance between the normal maximum liquid level in a basin and the top of the basin that is provided so that waves and other liquid movements will not overflow the basin.

**Free-Flow™** Ceramic diffuser plates for fine bubble aeration by USFilter/Davco.

**Free-Slide** Wire mesh basket configuration for traveling water screens by USFilter/Rex & Link-Belt Products.

**freeze concentration** A process involving the removal of heat from an aqueous mixture until one or more of the components crystallize.

**freeze distillation** Production of distillate by freezing a saline solution and washing salts from the pure water crystals prior to melting.

**Fre-Flo** Extruded cement underdrain for gravity filter by Infilco Degremont, Inc.

**Freon®** Refrigerant compound by E.I. Dupont De Nemours Inc.

**fresh water** Water that usually contains less than 1000 mg/L of dissolved solids.

**freshet** A stream or current of fresh water that flows into the sea.

**freshwater lens** An occurrence of fresh water found above salt water, usually found in coastal areas.

**Freundlich isotherm** Graphical representation of data related to the removal of colloidal matter from water as a result of adsorption.

**FREX** Freon extractable oil and grease.

**friable** Material that may be easily crumbled, pulverized, or reduced to powder.

**friction factor** A measure of the resistance to liquid flow that results from the wall roughness of a pipe or channel.

**FrictionFlex®** Containment liner texturing process by SLT North America, Inc.

**Fridgevap**<sup>®</sup> Package distillation/concentration system by Licon, Inc.

**Frontloader** Reciprocating rake bar screen by Schreiber Corp.

**Frontrunner** Reciprocating rake bar screen by Waste-Tech, Inc.

**froth** A mass of bubbles in or on the surface of a liquid.

**frothing** The formation of a thick layer of froth on an aeration basin.

**FRP** Fiberglass reinforced plastic.

**FRS** Formal reporting system.

**fry** Juvenile fish.

**FS** Feasibility study.

**FSA** Food Security Act.

**FSI**<sup>®</sup> Filter Specialists, Inc.

**FSS** See “flocculated suspended solids (FSS).”

**FTIR** See “Fourier Transform Infrared Spectrometry (FTIR).”

**FTO** Flameless thermal oxidation.

**FTU** See “formazin turbidity unit (FTU).”

**Fuchs ATAD** Autothermal aerobic digestion system by USFilter/Krüger.

**fuel economy standard** See “corporate average fuel economy standard (CAFE).”

**fuel efficiency** The proportion of the energy released on combustion of a fuel that is converted into useful energy.

**fugitive emission** Air pollutants emitted to the atmosphere other than those from chimneys, stacks, or vents.

**fugitive source** Any source of emissions not controlled by an air pollution control device.

**fuller’s earth** A fine, clay-like substance also called “diatomaceous earth.”

**Full-Fit**<sup>™</sup> Membrane separator by Osmonics, Inc.

**fulvic acid** Byproduct of decomposing organic matter that colors water and is a precursor of disinfection byproducts.

**fume** Finely divided solids trapped in vapor in a gas stream.

**fumigant** A pesticide vaporized to kill pests, commonly used in buildings and greenhouses.

**fungi** Small, multicellular nonphotosynthetic organisms that feed on organic matter.

**fungicide** A substance used to kill or inhibit the growth of fungi or molds.

**furans** A family of toxic, chlorinated organic compounds present in minute amounts in the air emissions from hazardous waste incinerators.

**FURS** Federal underground injection control reporting system.

**fusion** An energy-producing nuclear reaction that results from combining nuclei of small atoms to form larger atoms.

**Futura-Thane**<sup>®</sup> Potable water tank linings by Futura Coatings Inc.

**future liability** Refers to potentially responsible parties’ obligations to pay for additional response activities beyond those specified in the Record of Decision or Consent Decree.

**Fuzzy Filter**<sup>®</sup> Upflow filter system by Schreiber Corp.

**fuzzy logic** A process control system intended to replace a skilled human operator by using multi-level logic to adjust process operation based on a set of approximate, rather than exact, rules.

**FWCA** Fish and Wildlife Coordination Act.

**FWER** Final water effect ratio. The test procedure where a Water Effect Ratio test is repeated three times under different stream flow conditions. See also “water effect ratio (WER).”

**FWKO** See “free water knockout (FWKO).”

**FWPCA** See “Federal Water Pollution Control Act (FWPCA).”

**FXB** Fixed bed reactor.

**FY** Fiscal year.

## G

**g** See “gram (g).”

**G value** See “velocity gradient (G value).”

**G.T.M.<sup>TM</sup>** Gas transfer membrane separation technology by Ecolchem, Inc.

**GAAP** Generally accepted accounting principles.

**gabion** A wire mesh container filled with rocks used to prevent soil erosion.

**GAC** Granular-activated carbon.

**GAC10** Granular-activated carbon with an empty bed contact time of 10 minutes and a carbon reactivation frequency of no more than 6 months.

**GACT** Granular-activated carbon treatment.

**gain output ratio (GOR)** A measure of evaporator performance which represents the ratio of mass flow of distillate to steam input.

**gallon (U.S.)** A unit of volume for liquid substances equal to 231 cubic inches and approximately equivalent to 3.785 liters.

**gallon, Imperial** A unit of volume for liquid substances approximately equal to 1.2 gallons (U.S.) or 4.546 liters.

**gallons per flush** The number of gallons used to flush a toilet.

**galvanic corrosion** Corrosion that occurs when two dissimilar metals are connected electrically and immersed in a conductive liquid.

**galvanic series** The ranking of the relative nobility of different conducting materials in a certain environment.

**galvanize** An electrolytic or hot dipping process to coat steel products with zinc to increase corrosion resistance.

**gamma ray** A short wavelength, high energy form of electromagnetic radiation.

**garbage** Solid wastes generated by the handling, storage, preparation, cooking, and serving of food.

**GARD** Gravity-activated rotary trickling filter distributor by USFilter/General Filter.

**Gardiner Equipment** Chemical induction system product line by USFilter/Stranco.

**Gar-Dur** Ultra high molecular weight plastic products for chain and flight sludge collectors by Garland Manufacturing Co.

**garnet** A dense mineral often used as media in a granular media filter.

**Garra** Membrane bioreactor by USFilter/Memcor.

**gas** One of the three states of matter having no fixed shape or volume and capable of expanding indefinitely.

**gas blanket** The use of an inert gas in an enclosed tank's vapor space to minimize vapor formation or keep out unwanted air and moisture.

**gas chlorination** The application of chlorine gas to water.

**gas chromatography (GC)** An analytical technique used to determine the molecular composition and concentrations of various chemicals in water and soil samples.

**gas tight** Operating with no detectable emissions.

**gaseous emission** Volatile or uncondensed compounds discharged into the atmosphere.

**gasification** See "coal gasification."

**GasLifter** Anaerobic digester circulation and mixing system by Walker Process Equipment.

**gasohol** A motor vehicle fuel containing 80-90% unleaded gasoline and 10-20% ethanol.

**gasoline oxygenate** Combustible liquids containing oxygen that are added to gasoline to reduce atmospheric pollutants.

**gastroenteritis** An inflammation of the stomach and intestinal tract that is usually accompanied by symptoms that include diarrhea, fever, and vomiting.

**gastrointestinal** Related to the stomach or intestines.

**gate valve** A valve with a disk-shaped closing element that slides over the opening through which water flows.

**GBT** See "gravity belt thickener (GBT)."

**GC** See "gas chromatography (GC)."

**GC/MS** Gas chromatography/mass spectrometry.

**GCL** See "geosynthetic clay liner."

**GDT** Gas dissolution technology.

**GDT Process™** Gas-degas treatment process for VOC removal by GDT Corp.

**gear pump** A positive displacement pump where cavities created between the gear teeth of two meshing gears move from the suction to discharge side of the pump.

**GEHO®** Piston-type pump for heavy sludges by Envirotech Pumpsystems.

**Geiger counter** An instrument used to detect radiation.

**gel polymer** High molecular weight monomers produced with gamma radiation.

**gel zeolite** A synthetic sodium aluminosilicate ion exchanger.

**Gelex** Standards used to standardize turbidimeters by Hach Co.

**GelGester™** Bacterial additive for grease and odor applications by NuTech Environmental Corp.

**Gemco** Spent liquor filter by Gauld Equipment Sales Co.

**Gemini** Self-cleaning basket strainer by S.P. Kinney Engineers, Inc.

**Gemini™** Granular-activated carbon contactors by Roberts Filter Group.

**Gemini Polymaster** Emulsion and solution polymer blending equipment by Neptune Chemical Pump Co.

**GEMS** Global environmental monitoring system.

**Gen2®** Chemical feed system formerly offered by USFilter/Stranco.

**General Filter** Former name of USFilter/General Filter.

**generator** (1) Any person, group, or organization whose activities produce hazardous waste. (2) A rotating device used to produce electrical power.

**Generon**<sup>®</sup> On-site gaseous nitrogen generator by MG Generon.

**Generox**<sup>®</sup> On-site gaseous chlorine dioxide generator by MG Generon.

**Genesis** Package gravity filter system by Roberts Filter Group.

**Genesis** Sewage shredder by ZMI/Portec Chemical Processing.

**genome** All the genetic material in an organism.

**genotoxic** The ability of a chemical to cause adverse effects in the genetic material of a living organism.

**Gen-Ozi** Ozone generator by Matheson Gas Products.

**GeoCarb 6** Engineered granular carbon media by Geoenergy International Corp.

**GeoCat**<sup>™</sup> Recuperative catalytic oxidizer by Geoenergy International Corp.

**geodetic head** The total head without deducting velocity head or other losses.

**geographic information system (GIS)** A computer system designed for storing, manipulating, analyzing, and displaying data in a geographic context.

**Geoguard**<sup>®</sup> Groundwater sampling product by American Sigma, Inc.

**geosmin** A trace organic chemical produced by certain algae which may impart an earthy/musty odor in surface waters. Chemical formula is C<sub>12</sub>H<sub>22</sub>O.

**geosynthetic clay liner (GCL)** A landfill liner manufactured of bentonite clay supported by geotextiles.

**Geothane**<sup>®</sup> Wastewater containment lining by Futura Coatings, Inc.

**GeoTherm**<sup>™</sup> Regenerative thermal oxidizer by Geoenergy International Corp.

**geothermal** Energy produced by the transfer of heat from the earth's interior and conducted to the surface by hot water or steam.

**GEP** Good engineering practice.

**germ** A disease-producing microbe.

**germ cell** A reproductive cell; in humans, sperm or eggs.

**germicide** Any compound that kills disease-causing microorganisms.

**Gewe** Inclined plate settler by Waterlink Separations, Inc.

**GFC** USFilter/General Filter.

**GFF** Glass fiber filter.

**GFS** Gravity Flow Systems, Inc.

**ghanat** See "falaj."

**GHG** See "greenhouse gases (GHG)."

**Giardia lamblia** A protozoan parasite responsible for giardiasis.

**giardiasis** A gastrointestinal disease caused by the ingestion of waterborne *Giardia lamblia*, often resulting from the activity of beavers, muskrats, or other warm-blooded animals in surface water used as a potable water source.

**gill net** A vertical net used to capture fish of a certain size by allowing their heads to pass through the openings while catching their gills in the mesh.

**Girasieve**<sup>®</sup> Externally fed rotating drum screen by Andritz Sprout-Bauer S.A.

**GIS** See "geographic information system (GIS)."

**glacial water** Bottled water originating from a glacier.

**glacier** A large mass of accumulating ice and compacted snow that slowly moves down mountain valleys.

**Gladiator** Groundwater remediation pump by Ejector Systems, Inc.

**GLASdek** Synthetic media for evaporative cooling systems by Munters.

**Glauber's salt** Sodium sulfate with ten waters of hydration.

**GLC** Gas liquid chromatography.

**GLERL** Great Lakes Environmental Research Laboratory.

**GLI** See “Great Lakes Initiative (GLI).”

**global warming** A theory that predicts the warming of the atmosphere as a result of an accumulation of atmospheric carbon dioxide.

**globe valve** A valve where closure is accomplished by a spherical plug lowered onto a matching seat in the center of the valve.

**GLP** Good laboratory practices.

**GLWQA** Great Lakes Water Quality Agreement.

**Glydaseal** Sluice gate by Rodney Hunt Co.

**GM foods** Genetically modified foods made from plants that have been genetically altered.

**GMCC** Global monitoring for climatic change.

**Golfwater<sup>®</sup>** Aeration system for golf course ponds by Aeration Industries, Inc.

**Gooch crucible** A heat resistant container fitted with a filter mat used for determination of suspended and total solids.

**Goodfil** Rotary drum thickener by Gootech ASA.

**GOP** General operating procedures.

**GOR** See “gain output ratio (GOR).”

**Gore-Tex<sup>®</sup>** Microporous membrane material by W.L. Gore & Associates, Inc.

**Gould clarifier** A rectangular, secondary clarifier with dual chain and flight sludge collector mechanisms traveling toward a single sludge hopper at or near the middle of the tank.

**GOX** Gaseous oxygen.

**gpd** Gallons per day.

**gpf** Gallons per flush.

**gpg** See “grains per gallon (gpg).”

**gpg imp** Grains per imperial gallon.

**gpm** Gallons per minute.

**GPS** Groundwater protection strategy.

**gr** See “grain (gr).”

**GR<sup>TM</sup>** Gas recuperative thermal oxidizer by Thermatrix, Inc.

**grab sample** A single water or wastewater sample taken at a time and place representative of total discharge.

**Grabber** Tramp metal and heavy object catcher by Franklin Miller, Inc.

**Grabber<sup>®</sup>** Reciprocating rake bar screen by Waterlink Separations, Inc.

**Grace TEC** Former name of Megtec Systems, Inc.

**grade** (1) The finished surface of a civil structure. (2) The inclination or slope of a surface or structure. (3) To rate according to a standard or size.

**gradient** The rate of change of an elevation, velocity, pressure, temperature, or other parameter.

**graduated cylinder** A glass cylinder with fine gradations used in a laboratory to measure liquid contents.

**GrahamTek<sup>TM</sup>** Filtration and desalination water treatment systems by MWD Technologies Ltd.

**grain (gr)** A unit of mass equal to 0.0648 gram.

**grains per gallon (gpg)** A unit of measure where 1 gpg (U.S.) = 17.1 mg/L and 1 gpg (Imp) = 14.3 mg/L, frequently used in water hardness calculations.

**gram (g)** A unit of mass equal to the weight of 1 cubic centimeter (1 milliliter) of water or 0.03527 ounces.

**Gram stain** A staining procedure used to differentiate and categorize bacteria as either Gram negative or Gram positive.

**granular activated carbon (GAC)** A granular form of activated carbon used in filter beds or contactor vessels to absorb organic compounds.

**granular media** Grains of sand or other granular material used for filtering water or wastewater.

**granular media filtration** A tank or vessel filled with sand or other granular media to remove suspended solids and colloids from a water or wastewater that flows through it.

**GRAS** Generally regarded as safe.

**Gravabelt** Gravity belt thickener by Komline-Sanderson Engineering Corp.

**gravel** Rock fragments measuring 2 mm to 70 mm, often used as support material in granular media filters.

**Gravex** Zeolite softener by Graver Co.

**Gravilectric** Sludge wasting system using load cells to determine excess sludge accumulations by Patterson Candy International, Ltd.

**Gravi-Merik™** Gravimetric belt feeder by Merrick Industries Inc.

**gravimetric** Pertaining to the measurement of the weight of samples or materials.

**gravimetric feeder** Dry chemical feeder that supplies a constant weight of chemical over a preset time period.

**Gravipak** Crossflow inclined plate clarifier by USFilter/Aerator Products.

**Gravi-Pak** Oil/water separator by the former Bowser-Briggs Filtration Co.

**Gravisand™** Traveling bridge filter components by USFilter/Davco.

**gravitational acceleration** The acceleration of a free-falling body caused by the force of the earth's gravity, equal to 9.8 meters (32 feet) per second.

**Gravitator™** Clarifier/thickener by DAS International, Inc.

**gravity belt thickener (GBT)** A sludge dewatering device utilizing a porous filter belt to promote gravity drainage of water.

**gravity filter** Granular media filter that operates at atmospheric pressure.

**gravity spring** See "seepage spring."

**gravity system** A hydraulic system that relies on gravity flow and does not require pumping.

**gravity thickening** A sedimentation basin designed to operate at high solids loading rates, usually with vertical pickets mounted to the revolving sludge scrapers to assist in releasing entrained water.

**gray (Gy)** An international standard dose unit of radiation equal to an absorption of 1 joule per kilogram; 1 Gy = 100 rads.

**Gray Engineering** Former equipment manufacturer.

**gray water** All nontilet household water including the water from sinks, baths, and showers.

**GRCDA** Government Refuse Collection and Disposal Association.



**grease** Common term used to include fats, oils, waxes, and related constituents found in wastewater.

**Grease Grabber** Grease and oil skimmer by Abanaki Corp.

**grease trap** A receptacle used to collect grease and separate it from a wastewater flow.

**GreaseBurn** Grease and skimmings incinerator by Walker Process Equipment.

**Great Lakes Environmental<sup>®</sup>** Equipment product line by Waterlink Separations, Inc.

**Great Lakes Initiative (GLI)** Proposed guidelines to develop uniform water quality requirements for the U.S. Great Lake's basin.

**Great Lakes Instruments** Former name of GLI International.

**green belt** An undeveloped area immediately surrounding a town or development for the purpose of restricting indiscriminate outward expansion.

**green liquor** The liquor resulting from dissolving molten smelt from the kraft recovery furnace in water.

**greenhouse effect** The effect of CO<sub>2</sub> and other gases on the earth's atmosphere that is analogous to greenhouse glass as it restricts the outflow of radiative energy which results in the warming of the lower atmosphere.

**greenhouse gases (GHG)** Gases including carbon dioxide, methane, nitrous oxide, and CFCs which have been recognized to contribute to the greenhouse effect.

**Greenleaf Filter Control** Multiple cell rapid sand gravity filter using a central control and backwashing system by Infilco Degremont, Inc.

**greensand** A filter sand containing glauconite with ion exchange properties, often used to remove iron or manganese from water.

**GRGL** Groundwater residue guidance level.

**Griductor<sup>®</sup>** Comminutor by Infilco Degremont, Inc.

**Griffin Generator** Ozone generator by Ozonia North America.

**Grifter<sup>®</sup>** Packaged pumping/grinding station by Ingersoll-Dresser Pump (U.S.) and H2O Waste-Tec (U.K.).

**Grind Hog<sup>™</sup>** Mechanical shredding products by G.E.T. Industries, Inc.

**grit** Sand, gravel, cinders, and other heavy solid matter that have settling velocities substantially higher than those of organic putrescible solids in wastewater.

**grit chamber** A settling chamber used to remove grit from organic solids through sedimentation or an air-induced spiral agitation.

**grit classifier** Mechanical device utilizing an inclined screw or reciprocating rake to wash putrescible organics from grit.

**Grit King<sup>™</sup>** Grit removal unit by H.I.L. Technology, Inc.

**grit removal** A preliminary wastewater treatment process to remove grit from organic solids.

**Grit Snail<sup>™</sup>** Fine grit removal system by Eutek Systems, Inc.

**grit washer** A device used to wash organic matter from grit.

**GritLift** Air lift pump for grit removal by Walker Process Equipment.

**Gritmeister<sup>™</sup>** Grit separator/screw conveyor by Waterlink Separations, Inc.

**Gritreat** Aerated grit chamber by USFilter/Headworks Products.

**Gritreator<sup>™</sup>** Grit treatment unit by Baker Process.

**Gritt Mitt<sup>™</sup>** Grit removal and conveyor unit by WesTech Engineering Inc.

**grizzly** A coarse screen used to prevent debris from entering a water intake.

**Grizzly™** Grinder pump by F.E. Myers Co.

**ground cover** Plants grown to keep soil from eroding.

**groundwater** Subsurface water found in porous rock strata and soil.

**groundwater infiltration (GWI)** The seepage of groundwater into shafts and tunnels.

**groundwater recharge** The replenishment of a groundwater source, often by injection of tertiary treated wastewater.

**grout** Fluid, or semi-fluid, cement slurry for pouring into joints of brickwork or masonry.

**GRP** Glassfiber reinforced plastic.

**grubbing** The process of removing tree stumps or roots.

**GTO** Gas turbine oxidizer.

**Guardian™** Strainer product line by Tate Andale, Inc.

**guide vane** A device used to direct or guide the flow of a liquid or vapor.

**guinea worm disease** See “dracunculiasis.”

**gunbarrel** A vertical settling tank used to separate free oil from water in the production of crude oil.

**Gundline®** Containment liner by Gundle Lining Systems, Inc.

**Gundnet** Drainage net by Gundle Lining Systems, Inc.

**Gundseal** Geocomposite liner by Gundle Lining Systems, Inc.

**Gutling** Former name of USFilter/Gutling.

**GW** Groundwater.

**GWDR** Ground Water Disinfection Rule.

**GWI** Groundwater infiltration.

**GWM** Groundwater monitoring.

**GWUI** Groundwater under the direct influence of surface water.

**gypsum** The mineral consisting primarily of fully hydrated calcium sulfate. Chemical formula is  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ .

**Gyrazur™** Softening clarifier by Infilco Degremont, Inc.

## H

**H. pylori** See “*Helicobacter pylori*.”

**H<sub>2</sub>O** See “water.”

**H<sub>2</sub>O<sub>2</sub>** See “hydrogen peroxide.”

**H<sub>2</sub>S** See “hydrogen sulfide.”

**HA** Health advisory.

**ha** See “hectare (ha).”

**HAA** See “haloacetic acid (HAA).”

**HAA5** The sum of the concentration of five haloacetic acid compounds which include mono-, di-, and trichloroacetic acids and mono- and dibromoacetic acids.

**HAA6** The sum of the concentration of six haloacetic acid compounds which include mono-, di-, and trichloroacetic acids, mono- and dibromoacetic acids, and bromochloroacetic acid.

**HAAFP** Haloacetic acid formation potential.

**habitat** The place where a human, animal, plant, or microorganism population lives, and its surroundings, both living and nonliving.

**Hach One** pH Electrode by Hach Co.

**hadal zone** The ecological zone of the ocean floor that lies in a deep trench below the abyssal zone, generally deeper than 6000 meters.

**Halberg** Digester draft tube sludge mixer by Sterling Fluid Systems (USA).

**half life** The time required for half of the atoms of a particular radioactive substance to transform or decay to another nuclear form.

**half life, chemical** The time required for the concentration of a chemical being tested to be reduced to one half of its initial value.

**halides** A compound containing a halogen.

**haloacetic acid (HAA)** A type of disinfection byproduct formed during the chlorination of water containing natural organic matter.

**halocline** A well-defined salinity gradient in an ocean.

**halogen** One of the chemical elements of the group containing fluorine, chlorine, bromine, iodine, and astatine.

**halogenated organic compounds (HOC)** Compounds having a halogen-carbon bond.

**halon** Bromine-containing compounds with long atmospheric lifetimes whose breakdown in the stratosphere causes depletion of ozone.

**halophyte** Plants capable of living in salt water or salty soil.

**Hamburg Rotor** Surface aerator by Brackett Geiger.

**HammerHead™** Groundwater pump by QED Environmental Systems, Inc.

**hammermill** A device with hammer-like arms used to shred or grind solids to facilitate further treatment or disposal.

**handler** A facility that accumulates and generates universal wastes or receives and/or sends universal wastes to a destination facility.

**HAP** Hazardous air pollutant.

**HAPEMS** Hazardous Air Pollutant Enforcement Management System.

**HAPPS** Hazardous Air Pollutant Prioritization System.

**Harbor Bosun** Dye tablets by Formulabs, Inc.

**Harborlite®** Perlite material by Celite Corp.

**hard water** Alkaline water containing dissolved salts that interfere with some industrial processes and prevent soap from sudsing.

**HaRDE®** Electrostatic precipitator by Wheelabrator Air Pollution Control, Inc.

**Hardinge** Manufacturer of traveling bridge filter whose product line was acquired by Infilco Degremont, Inc.

**hardness** The total concentration of calcium and magnesium ions in water expressed as calcium carbonate.

**hardpan** A compacted, impermeable layer of soil at or near the surface.

**Hastelloy®** Corrosion resistant, nickel-based alloy by Haynes International, Inc.

**HATREMS** Hazardous and Trace Emissions System.

**HAV** Hepatitis A virus.

**Hawker Siddeley Brackett** Former parent company of Brackett Geiger.

**Hazardous and Solid Waste Amendments (HSWA)** The 1984 amendments to RCRA regulating underground tank storage and land disposal of certain hazardous wastes.

**hazardous area, class 1** Locations where flammable gases or vapors may be present in the air in sufficient quantities to produce explosive or ignitable mixtures.

**hazardous material** A solid, liquid, or gaseous material that is detrimental to human health.

**Hazardous Ranking System (HRS)** The method used to evaluate the relative potential of hazardous substance releases to cause health or safety problems or ecological or environmental damage.

**hazardous waste** Any waste or combination of wastes which pose a substantial present or potential hazard to human health or living organisms because they are nondegradable, persistent in nature, or may otherwise cause detrimental cumulative effects.

**Hazen-Williams coefficient** A roughness coefficient related to the influence of pipe material on the velocity characteristics of a fluid.

**HAZMAT** Hazardous materials.

**HAZOP** Hazard and operability study.

**HAZWOPER** Hazardous Waste Operations and Emergency Response.

**HBV** Hepatitis B virus.

**HC** (1) Hydrocarbon. (2) Hazardous constituents.

**HCFCs** See "hydrochlorofluorocarbons (HCFCs)."

**HCV** Hepatitis C virus.

**HDPE** See "high density polyethylene (HDPE)."

**HDT** (1) Hydraulic detention time. (2) Highest dose tested in a study.

**HDXLPE** High density crosslinked polyethylene.

**head** (1) A measure of the pressure exerted by a fluid expressed as the height of an enclosed column of the fluid which could be balanced by the pressure in the system. (2) The source or upper end of a system, e.g., headwater.

**header** A pipe manifold fitted with several smaller lateral outlet pipes.

**headloss** The difference in water level between the upstream and downstream sides of a treatment process attributed to friction losses. Sometimes called "pressure drop."

**headwater** The source or upper reaches of a stream.

**headworks** The initial structure and devices located at the receiving end of a water or wastewater treatment plant.

**HEAL** Human exposure assessment location.

**health advisory level** A nonregulatory health-based reference level of chemical traces in drinking water at which there are no adverse health risks when ingested over various periods of time.

**health assessment** An evaluation of available data on existing or potential risks to human health posed by a Superfund site.

**hearth** The bottom of a furnace upon which waste materials are exposed to the flame.

**heartwood** The oldest, dense wood in the center of a tree which often contains an accumulation of resins and oils.

**heat balance** An accounting of the distribution of a system's heat loss and heat gain.

**heat exchanger** A device used to transfer heat from one substance to another. See also "shell-and-tube heat exchanger."

**heat island** An urban phenomenon where air pollutants and the heat from a combination of tall buildings, concrete pavement, and other materials combine to create a localized haze dome that traps rising hot air resulting in higher temperatures and air pollution.

**heat of condensation** The amount of heat released when a vapor changes state to a liquid.

**heat of sublimation** The amount of energy required to convert ice directly to a vapor.

**heat of vaporization** The amount of heat required to change a volume of liquid to a vapor.

**heat pump** A device for transferring heat from a cooler reservoir to a hotter one by mechanical means involving the compression and expansion of a fluid.

**heat recovery** The capture and use of heat that would otherwise be lost as waste heat.

**heat sink** Any material that is used to absorb heat.

**Heat Systems** Former name of Misonix, Inc.

**heat tracing** The electrical or steam heating of piping and equipment to prevent freezing.

**heat transfer** The transfer of heat from one body to another by means of radiation, conductance, or convection.

**heat value** The quantity of heat that can be released from a sludge per unit mass of the sludge solids.

**Heatamix** Heating and recirculation system for anaerobic sludge digesters by Simon-Hartley, Ltd.

**heater treater** Oil field produced water treatment unit used to break water-in-oil emulsions with heat and chemicals.

**HeatX** Anaerobic digester gas heating unit by Walker Process Equipment.

**heavy metals** Metals that can be precipitated by hydrogen sulfide in an acid solution and which may be toxic to humans above certain concentrations.

**heavy water** Water with a hydrogen isotope having an atomic weight of 2.

**hectare (ha)** A unit of area equal to 10,000 square meters. One hectare is equal to 2.471 acres.

**HEEB** High-energy electron beam irradiation.

**HEI** Health Effects Institute.

**Hela-Flow** Plastic laterals for water and wastewater treatment by Liquid-Solids Separation Corp.

**Helaskim** Helical surface skimmer by Walker Process Equipment.

**HeliCarb** Carbon dioxide contactor by CBI Walker, Inc.

**Heliclean**<sup>®</sup> Open channel spiral screen with screenings washer by Waterlink Separations, Inc.

**Helico** Screw type screenings press by Infilco Degremont, Inc.

**Heliflow**<sup>®</sup> Spiral tube bundle heat exchangers by Graham Manufacturing Co.

**helio-** A prefix referring to the sun or sunlight.

**Heliobacter pylori** A bacterium that causes stomach ulcers and has been identified as an emerging waterborne health threat. Also known as *H. pylori*.

**Heli-Press** Screenings compactor by Vulcan Industries, Inc.

**Helisieve Plus**<sup>™</sup> Septage receiving station by Waterlink Separations, Inc.

**Helisieve**<sup>®</sup> Open channel spiral screen by Waterlink Separations, Inc.

**HeliSkim** Helical surface skimmer by Walker Process Equipment.

**HeliThickener** Interrupted flight screw conveyor for sludge collectors by Walker Process Equipment.

**Helixpress** Screenings dewatering press/conveyor by Waterlink Separations, Inc.

**Hellmut Geiger** Former name of Brackett Geiger.

**helminth** A parasitic worm.

**HEM** Human exposure modeling.

**hemi-hydrate** A crystalline compound having one molecule of water of crystallization per two molecules of compound.

**Henry's Law** The weight of any gas that will dissolve in a given volume of a liquid at constant temperature is directly proportional to the pressure that the gas exerts above the liquid.

**HEPA filter** See "high efficiency particulate air filter (HEPA)."

**hepatitis** An acute viral disease which results in liver inflammation and may be transmitted by direct contamination of a water supply by sewage.

**heptachlor** An insecticide banned for use on food products and seed treatment.

**herb** A seed plant whose stem is not woody and whose leaves, stems, or roots are often used for seasoning, medicine, or fragrance.

**herbicide** A synthetic organic compound used to control plant growth.

**Hercules** Screening equipment product line of Moyno Industrial Products.

**Hercules**<sup>®</sup> Pressure leaf filters by Liquid-Solids Separation Corp.

**HES** Huntington Environmental Systems, Inc.

**heterotrophic bacteria** Bacteria that derives its cell carbon from organic carbon; most pathogenic bacteria are heterotrophic bacteria.

**heterotrophic plate count (HPC)** A laboratory method of determining the level of heterotrophic bacteria in a sample. Formerly known as "standard plate count."

**Hevi-Duty** Traveling water screen replacement parts products by USFilter/Rex & Link-Belt Products.

**hexavalent chrome** A toxic form of chrome used in plating operations, usually reduced to the trivalent form and precipitated as a hydroxide.

**HFCs** See "hydrofluorocarbons (HFCs)."

**HGL** Hydraulic grade line.

**HHC** Highly hazardous chemical.

**HHE** Human health and the environment.

**HHW** Household hazardous waste.

**Hi-Cap**<sup>®</sup> High rate thickener by Baker Process.

**Hidrostal** Screw/centrifugal impeller pump by Envirotech Pumpsystems.

**Hi-Flo**<sup>®</sup> Depth filter and water softener products by Culligan International Corp.

**HiFlo**<sup>™</sup> Thickener by WesTech Engineering, Inc.

**Hi-GARD**<sup>®</sup> Rotary trickling filter by USFilter/General Filter.

**high density polyethylene (HDPE)** A synthetic organic material often used as landfill liner because of its low permeability.

**high efficiency particulate air filter (HEPA)** A filtering system capable of trapping and retaining at least 99.97% of all monodispersed particles 0.3 micrometer in diameter or larger.

**High Flux Series**<sup>™</sup> Membrane cleaning products for restoring membrane flux by King Lee Technologies.

**high performance liquid chromatography (HPLC)** Instrumental technique for measuring trace levels of organics by means of UV adsorption.

**High Resolution Redox**<sup>®</sup> Disinfection and dechlorination control technology by USFilter/Stranco.

**high velocity air filter (HVAF)** An air pollution control filtration device for the removal of sticky, oily, or liquid aerosol particulate matter from exhaust gas streams.

**High-Flux TF**<sup>™</sup> Oil control chemical for use in membrane treatment system by King Lee Technologies.

**high-level radioactive waste (HLW)** The highly radioactive waste material resulting from the reprocessing of spent fuel, the spent fuel itself, and much of the waste generated from nuclear weapons production, with activities measured in curies per liter.

**high-test calcium hypochlorite** Calcium hypochlorite product containing at least 70% available chlorine.

**high-to-low dose extrapolation** The process of prediction of low exposure risk to humans from the measured high exposure-high risk data involving rodents.

**Hi-Iron** Closed pressure contact-aeration iron removal process by Aquatrol Ferr-X Corp.

**Hi-Lift** Reciprocating rake bar screen by Longwood Engineering Co., Ltd.

**Hi-Lucid** High rate coagulation and sedimentation process by Hitachi Metals America, Ltd.

**hindered settling** Phenomenon referring to sedimentation of particles in a suspension of intermediate concentration where interparticle forces hinder the settling of neighboring particles. Also called "type III settling."

**HIOPs** Heated iron oxide particles.

**HiOx**<sup>™</sup> Aeration system by Parkson Corp.

**HIP** High intensity belt press by Andritz-Ruthner, Inc.

**Hi-Pass** In-line motionless mixer by Komax Systems, Inc.

**Hiperfilter** Media filter by Axsia Serck Baker, Inc.

**Hi-Rate Thickener** Circular gravity sludge thickening system with ancillary equipment by GL&V/Dorr-Oliver, Inc.

**Hi-Tork** Portable mixer by Philadelphia Mixers.

**HIV** Human immunodeficiency virus. See "AIDS (Acquired Immune Deficiency Syndrome)."

**Hi-V®** Depth filter cartridge by USFilter/Filtration & Separation.

**HLL** High liquid level.

**HLW** See “high-level radioactive waste (HLW).”

**HMIP** Her Majesty’s Inspectorate of Pollution (U.K.).

**HMIS** Hazardous Materials Information System.

**HMR** Hazardous materials regulations.

**HMTA** Hazardous Materials Transportation Act.

**HMTR** Hazardous Materials Transportation Regulations.

**HOA** Hand-off-automatic.

**HOBr** See “hypobromous acid (HOBr).”

**HOC** See “halogenated organic compounds (HOC).”

**HOG™** Halogenated organic gas destruction process formerly offered by Quantum Technologies, Inc.

**hogging ejector** A steam jet ejector which produces a vacuum in a vessel by evacuating the contents in a single stage to the atmosphere.

**holding tank** A tank used to receive and store wastewater prior to its ultimate disposal.

**Hollosave** Reverse osmosis system by Toyobo Co., Ltd.

**Hollosep** Hollow fiber configuration reverse osmosis module by Toyobo Co., Ltd.

**hollow fiber membrane** Type of reverse osmosis and ultrafiltration membranes formed into small diameter tubes.

**homeowner water system** Any water system which supplies piped water to a single residence.

**Homomix** Propeller type rapid mixer by Amwell, Inc.

**HON** Hazardous organic NESHAP. A rule regulating emissions of listed organic chemicals from new and existing manufacturing sources.

**honey wagon** Common term for vacuum truck used to remove accumulated septic tank solids.

**hood capture efficiency** Ratio of the emissions captured by a hood and directed into a control or disposal device, expressed as a percent of all emissions.

**hormone** A substance such as adrenaline or insulin which is formed in an organ of the body and which controls other organs or metabolic activities.

**Hose pump** A peristaltic pump used for metering or fluid transfer.

**host** Any plant or animal on, or in which, another lives for nourishment, development, or protection.

**Hot Bottom®** Steam-powered evaporator by Lakeview Engineered Products, Inc.

**Hot Box** Wastewater evaporator by Landa, Inc.

**hot lime softening** Lime softening process conducted at temperatures of 104 to 125°C.

**Hot Shot®** Electric powered evaporator by Lakeview Engineered Products, Inc.

**Hot Tube®** Evaporator by Lakeview Engineered Products, Inc.

**hot zone** The area immediately surrounding a hazardous materials accident site.

**HOV** High-occupancy vehicle.

**hp** Horsepower. A standard unit of power equal to 745.7 watts.

**HPC** See “heterotrophic plate count (HPC).”

**HPD** Former name of USFilter/HPD.



**HP-Hybrid** Automatic filter press by Heinkel Filtering Systems, Inc.

**HPI/CPI** Hydrocarbon processing industry/chemical processing industry.

**HPLC** See “high performance liquid chromatography (HPLC).”

**HPV** High priority violator.

**HRB<sup>®</sup>** Solid waste baler by Harris Waste Management Group, Inc.

**HRC<sup>™</sup>** Hydrogen release compound for bioremediation by Regenesis.

**HRGC** High resolution gas chromatography.

**HRMS** High resolution mass spectrometry.

**HRS** See “Hazardous Ranking System (HRS).”

**HRSG** Heat recovery steam generator.

**HRT** See “hydraulic residence time (HRT).”

**HRUP** High-risk urban problem.

**HSC<sup>™</sup>** High pressure centrifugal pump for reverse osmosis by Pump Engineering, Inc.

**HSDB** Hazardous Substance Database.

**HSL** Hazardous substance list.

**HSWA** See “Hazardous and Solid Waste Amendments (HSWA).”

**HTA** High temperature additive.

**HTC** Heat transfer coefficient.

**HTC<sup>™</sup>** Hydraulic turbocharger for reverse osmosis pump system by David Brown Union Pumps Co.

**HTH** High-test calcium hypochlorite product by Arch Chemicals.

**HTO<sup>®</sup>** Regenerative thermal oxidizer by Dürr Environmental, Inc.

**HTP** Heat-treated peat. A polymer spill encapsulation and cleanup product by American Products.

**HTP** High temperature and pressure.

**HTW** Hazardous toxic wastes.

**Hubair<sup>®</sup>** Surface aerator by USFilter/Hubert.

**Hubert** Former name of USFilter/Hubert.

**Huisman** Oxidation ditch wastewater treatment system by USFilter/Envirex.

**human equivalent dose** A dose that when administered to humans produces an effect equal to that produced by a dose in animals.

**human exposure evaluation** Describing the nature and size of the population exposed to a substance and the magnitude and duration of their exposure. The evaluation could concern past, current, or anticipated exposures.

**human health risk** The likelihood that a given exposure or series of exposures may damage the health of individuals.

**Humboldt Decanter** Sludge dewatering equipment product line of Baker Process.

**humic acid** Organic acids that are byproducts of decomposing organic matter which colors water.

**humidity** The amount of water vapor within the atmosphere.

**humidity ratio** The ratio of the mass of water vapor to the mass of dry air in the atmosphere.

**humification** The decomposition of organic matter from plants and animals into soil.

**Hummix<sup>™</sup>** Polymer blending system by Hinsilblon Laboratories.

**humus** Dark or black decomposing organic matter in soil.

**Hurox™** Spent caustic oxidation system by Huron Tech Corp.

**Hurricane** Mixer by Franklin Miller, Inc.

**Hurricane** Submersible aspirating aerator by Aeromix Systems, Inc.

**Hurricane®** Combination centrifuge and cartridge filtration system by Harmsco Filtration Products.

**HVAC** Heating, ventilating, and air conditioning.

**HVAC/R** Heating, ventilating, air conditioning, and refrigeration.

**HVAF** See “high velocity air filter (HVAF).”

**HVIO** High volume industrial organics.

**HVLC** High volume, low concentration.

**HW** Hazardous waste.

**HWCL** Hazardous Waste Control Law.

**HWDMs** Hazardous Waste Data Management System.

**HWF** Hazardous waste-derived fuel.

**HWGTF** Hazardous Waste Groundwater Task Force.

**HWIR** Hazardous Waste Identification Rule.

**HWIS** Hazardous Waste Information System.

**HWL** High water level.

**HWLT** Hazardous Waste Land Treatment

**HWM** Hazardous waste management.

**HWTC** Hazardous Waste Treatment Council.

**HX** (1) Heat exchanger. (2) Hydrogen halide.

**Hy Flo Super-Cel®** Diatomaceous earth filter media by Celite Corp.

**hyacinth** Floating aquatic plants whose roots provide a habitat for a diverse culture of aquatic organisms who metabolize organics in wastewater.

**hybrid system** A system incorporating multiple processes or technologies.

**Hycor®** Product line of Waterlink Separations, Inc.

**Hydecat™** Hypochlorite destruction product by Syntex.

**HYDRA** Sludge removal system by Hazleton Environmental, Inc.

**Hydracap™** Ultrafiltration system by Hydranautics.

**Hydradenser** Inclined screw thickener by Thermal Black Clawson.

**Hydra-Mix®** Hydraulic mixer by Air-O-Lator Corp.

**Hydrapaint** Ultrafiltration spiral membrane by Hydranautics.

**Hydra-Press™** Hydraulic screenings compactor by Vulcan Industries, Inc.

**Hydrasand®** Continuous cleaned moving bed sand filter by Andritz-Ruthner, Inc.

**Hydrasep®** Oil/water separator by GNESYS, Inc.

**Hydrasieve®** Static fine screen by Andritz-Ruthner, Inc. (Western Hemisphere) and Andritz Sprout-Bauer S.A. (Eastern Hemisphere).

**hydrate** A compound formed by the union of water with another substance.

**hydrated lime** The calcium hydroxide product that results from mixing quicklime with water. Chemical formula is  $\text{CaOH}_2$ .

**hydration** The process of combining or uniting water with another substance.

**Hydratower™** Static fine screen by Brandt Co.

**Hydra-Tracker™** Self-tracking oil, grease, and sludge removal device by Dontech, Inc.

**Hydraucone** Diffuser plate used with down flow mechanical aerator by Amwell, Inc.

**hydraulic classification** A process of grading particles of the same specific gravity according to size by fluidization or backwashing.

**hydraulic gradient** The slope of the hydraulic grade line which indicates the change in pressure head per unit of distance.

**hydraulic jump** The sudden rise in water surface level which may occur when water flowing through an open channel at a high velocity is retarded.

**hydraulic loading** Total volume of liquid applied per unit of time to a tank or treatment process.

**hydraulic radius** The ratio of the area of a conduit in which water is flowing to its wetted perimeter.

**hydraulic residence time (HRT)** Vessel volume (L) divided by the liquid removed (L/d).

**hydraulics** The branch of science and engineering that deals with the mechanics of fluids.

**hydrazine** A chemical compound used as an oxygen scavenger. Chemical formula is  $H_2NNH_2$ .

**Hydro Grid™** Fine screening device by Schreiber Corp.

**Hydro Group** Former name of Layne Christensen, Ranney Division.

**Hydro Scour** Pulsed bed filter backwashing system by USFilter/Zimpro.

**Hydro-Aerobics** Wastewater treatment equipment product line by Ashbrook Corp.

**Hydrobend®** Water level control device by Grande, Novac & Associates, Inc.

**hydroblast** The use of high pressure water jets to clean or remove debris.

**Hydroburst™** Passive screen air backwash system by USFilter/Johnson Screens.

**hydrocarbons** Organic compounds consisting predominantly of carbon and hydrogen.

**HydroCeal** Mixed bubble diffuser by Ashbrook Corp.

**Hydrocell®** Induced air flotation separators by USFilter/Whittier.

**Hydro-Chek** Coarse bubble diffuser by Pollution Control Systems, Inc.

**hydrochloric acid** An aqueous form of hydrogen chloride that is a strong corrosive agent. Chemical formula is HCl.

**hydrochlorofluorocarbons (HCFCs)** Substances used as temporary alternatives to CFCs.

**Hydro-Circ®** Nonmechanical sludge recirculation system by Graver Co.

**Hydroclean®** Fine screening of combined sewer overflows by Grande, Novac & Associates, Inc.

**Hydrocleaner** Dissolved air flotation aeration system by Baker Hughes Process Systems.

**Hydro-Clear®** Pulsed bed gravity sand filter by USFilter/Zimpro.

**HydroClor-Q™** Organic chlorine test kit by Dexsil Corp.

**Hydro-Cone** Underdrain for sand filter by BIF.

**hydrocyclone** A device used to separate grit and other solids from a liquid using centrifugal force.

**Hydrodarco®** Activated carbon by Norit Americas Inc.

**HydroDri™** Screenings press by Serpentix Conveyor Corp.

**Hydrofilt™** Anthracite filter media by Lang Filter Media Co.

**Hydroflo®** Metering pump product line by PennProcess Technologies, Inc.

**HydroFlo™** Disposable in-line filter for groundwater monitoring by Schlicher & Schuell.

**HydroFloat** Dissolved air flotation system by Hydro-Flo Technologies, Inc.

**Hydro-Float** Flotation system for removal of fat, grease, and suspended solids by HydroCal, Inc.

**Hydrofloc** Polyelectrolyte used to enhance liquid/solid separation by Aqua Ben Corp.

**HydroFloc™** Rotating screen thickener by Klein America, Inc.

**Hydrofluor Combo** *Cryptosporidium* and *Giardia* detection reagents by Meridian Diagnostics, Inc.

**hydrofluoric acid** An aqueous form of hydrogen fluoride. Chemical formula is HF.

**hydrofluorocarbons (HFCs)** Replacements for CFCs and HCFCs which contain no chlorine and have no ozone-depletion potential.

**hydrofluosilicic acid** An acidic liquid used to fluoridate drinking water. Chemical formula is  $H_2SiF_6$ .

**Hydroflush** Cable operated bar screen by Beaudrey Corp.

**HydroForce™** Motorless polymer mixing system by USFilter/Stranco.

**hydrogen ion concentration** See “pH.”

**hydrogen peroxide** An oxidizing agent used for odor control and disinfection. Chemical formula is  $H_2O_2$ .

**hydrogen sulfide** A toxic gas formed by the anaerobic decomposition of organic matter containing sulfur. Chemical formula is  $H_2S$ .

**hydrogenate** To combine hydrogen with a compound in a chemical reaction.

**hydrograph** A graphical representation of a stream discharge at a single location.

**Hydro-Grit™** Vortex degritter by Fluidyne Corp.

**Hydrogritter** Grit washing system by Envirotech Pumpsystems.

**Hydro-Jet** Self-cleansing screen by H.I.L. Technology, Inc.

**Hydro-Lance™** Wet dust collector by Duall Division, Met-Pro Corp.

**Hydro-Lift** Pre-fabricated steel lift stations by Ashbrook Corp.

**Hydro-lite** Biological filter media by Ashbrook Corp.

**hydrologic cycle** The natural cycle of continuous evaporation and condensation.

**hydrology** The science dealing with the properties, distribution, and circulation of water.

**hydrolysis** A chemical change or decomposition of matter produced by the combination with water.

**Hydromation** Deep bed filter with walnut shell media by Filtra-Systems Hydromation.

**hydrometer** An instrument used to measure the specific gravity of liquids.

**Hydron®** Dissolved air flotation technology by Colloid Environmental Technologies Co.

**hydronium ion** The hydrated hydrogen ion,  $H_3O^+$ .

**Hydroperm®** Crossflow microfiltration system formerly offered by USFilter/Microfloc.

**hydrophilic** Having an affinity for water.

**hydrophobic** Having an aversion to water.

**hydrophyte** A plant that grows in water or saturated soils.

**Hydropillar™** Elevated water storage tank by Pitt-Des Moines, Inc.

**hydropneumatic water system** A water system, usually small, in which a water pump is automatically controlled by the air pressure in a compressed air tank.

**hydroponics** The science of growing plants in nutrient-rich solutions or moist inert material instead of soil.

**Hydropress** Belt filter press by the former Clow Corp.

**Hydro-Press** Belt filter press by HydroCal, Inc.

**HydroPunch®** Groundwater sampler by QED Environmental Systems.

**Hydrorake** Trash rake by Atlas Polar Co., Hydrorake Division.

**HydroRanger** Ultrasonic level measuring system by Milltronics, Inc.

**Hydro-Rotor** Brush type aerator by Amwell, Inc.

**Hydro-SAFe** Biological aerated filter by Ashbrook Corp.

**Hydroscreen** Static fine screen by Waterlink Separations, Inc.

**HydroSeal®** Anaerobic digestion gasholder cover by Baker Process.

**Hydrosely®** Sewer and retention tank flushing device by Grande, Novac & Associates, Inc.

**Hydrosep** Shallow basin, nonaerated grit removal system by USFilter/Aerator Products.

**Hydroseparator** Industrial wastewater gravity thickener by GL&V/Dorr-Oliver, Inc.

**Hydroshear** Aeration tank for low flow package treatment plant formerly offered by USFilter/Envirex.

**Hydro-Shear** Internally fed rotary fine screen by Dontech, Inc.

**Hydrosil** Static screen with brush/water jet cleaning device by Spirac.

**Hydroslide®** Constant flow regulating device by Grande, Novac & Associates, Inc.

**Hydro-Sock** Upflow cartridge filtration system by Ashbrook Corp.

**hydrosphere** The aqueous environment of the earth including rivers, lakes, oceans, and glaciers.

**hydrostatic pressure** The pressure exerted by water due to depth alone.

**hydrostatic test** A test procedure in which a vessel or system is subjected to water pressure and examined for leaks, distortion, and/or mechanical failure.

**hydrotest** The testing of piping, tubing, or vessels by the filling of water and the pressurization to test for integrity.

**Hydrovex®** Flow control product line by John Meunier, Inc.

**Hydrowash** Down flow recycling pump/aerator for grit removal by Amwell, Inc.

**hydroxide alkalinity** Alkalinity caused by hydroxyl ions.

**hydroxide ion** A negatively charged ion consisting of a hydrogen atom and an oxygen atom. Chemical formula is OH.

**hydroxyl** A chemical group consisting of one hydrogen and one oxygen atom.

**Hydro-Zap®** Ultra-violet wastewater disinfection systems by Ashbrook Corp.

**Hydrozon®** Ozone system by Carus Chemical Co.

**Hydrymax** Sludge dryer by D.R. Sperry & Co.

**hyetograph** (1) A graphic representation of a rainfall that plots time vs. rainfall.  
(2) A rain recording gage.

**HyFlo™** Continuous self-cleaning screenings belt by Waterlink Separations, Inc.

**Hygene** Bacteriostatic filter media by Ionics, Inc.

**hygrometer** An instrument for measuring the relative amount of moisture in the air.

**hygroscopic** Readily absorbing moisture from the atmosphere.

**hygroscopic water** Water in soil that is in equilibrium with the atmospheric water vapor and cannot be lost to evaporation or drain freely by gravity.

**Hymergible®** Hydraulically driven submersible pump by Crane Pumps & Systems.

**Hyper+Ion®** Cationic coagulants and flocculants by General Chemical Corp.

**hyperfiltration** Filtration using a dense membrane that is often used synonymously with “reverse osmosis.”

**HyperFlex®** HDPE containment liner by SLT North America, Inc.

**Hyperfloc®** Polyelectrolyte used to enhance liquid/solid separation by Hychem, Inc.

**HyperNet™** Net fabric composite by SLT North America, Inc.

**Hyperpress™** Combination belt filter/plate and frame press by Klein.

**Hypersperse** Antiscalant for use in reverse osmosis systems by BetzDearborn-Argo District.

**hypobromous acid (HOBr)** An effective biocide.

**hypochlorite** Chlorine anion commonly used as an alternative to chlorine gas for disinfection. Chemical formula is  $\text{OCl}_3^-$ .

**Hypo-Gen®** Sodium hypochlorite generation systems by Capital Controls Co.

**hypolimnetic aeration** Aeration of water at the bottom of a lake.

**hypolimnion** The lower layer of a stratified lake that results from varying water densities.

**hypoxia** The condition that exists when a body of water has a very low dissolved oxygen level, usually less than 2 mg/L.

**Hypress** Screenings dewatering press by Waterlink Separations, Inc.

**Hy-Q** Flush bottom sluice gate closure by Rodney Hunt Co.

**Hysep®** Decanter centrifuge by Westfalia Separator, Inc.

**Hy-Speed®** Mixer by Alsop Engineering Co.

**Hytrex®** Cartridge prefilters and prefilter housings by Osmonics, Inc.

**Hyveyor** Troughing conveyor by Waterlink Separations, Inc.

# I

**I&C** Instrumentation and control.

**I&M** Inspection and maintenance.

**I/A** Innovative and alternative.

**I/I** See “inflow/infiltration (I/I).”

**I/O** Input/output.

**IAF** See “induced air flotation (IAF).”

**IAP** Indoor air pollution.

**IAQ** Indoor air quality.

**IAS<sup>TM</sup>** Induced air scour system for sand filters by USFilter/Davco.

**IATDB** Interim air toxics data base.

**IBT** Industrial biotest laboratory.

**IBWA** International Bottled Water Association.

**IC** See “ion chromatography (IC).”

**ICBN** International Commission on the Biological Effects of Noise.

**ICE** (1) Institute of Civil Engineers. (2) Internal combustion engine.

**ice** The solid, crystalline form of water.

**ice apron** A wedge-shaped structure for protecting a pier or intake from floating ice.

**ice fog** An atmospheric suspension of reflective ice crystals which affects visibility.

**ICEAS<sup>®</sup>** Intermittent cycle extended aeration system for wastewater treatment by ABJ product group of Sanitaire Corp.

**Ice-Away<sup>®</sup>** Ice melter by Air-O-Lator Corp.

**ICOLD** International Commission on Large Dams.

**ICR** See “Information Collection Rule (ICR).”

**ICRE** Ignitability, corrosivity, reactivity, and extraction.

**ICRP** International Commission on Radiological Protection.

**ICS** Intermittent control strategies.

**ID** Inside diameter.

**ID<sub>50</sub>** See “infectious dose 50 (ID<sub>50</sub>).”

**IDA** International Desalination Association.

**IDI<sup>®</sup>** Infilco Degremont, Inc.

**IDL** See “instrument detection limit (IDL).”

**IDLH** See “immediately dangerous to life or health (IDLH).”

**IDP** Ingersoll Dresser Pump Co.

**Idrex** Pressure leaf filter by USFilter/Zimpro.

**IDS Drumshear** Rotating fine screen by Aer-O-Flo Environmental, Inc.

**IE** See “ion exchange (IX or IE).”

**IEC** International Electrotechnical Commission.

**IEEE** Institute of Electrical and Electronics Engineers.

**IESWTR** Interim Enhanced Surface Water Treatment Rule.

**IFA** Immunofluorescence assay.

**IGCC** Integrated coal gasification combined cycle.

**IGF** Induced gas flotation. See “induced air flotation (IAF).”

**igneous rock** A type of rock formed from cooled magma.

**ignitability** The characteristic of having a flash point less than 60°C.

**ignition temperature** The lowest temperature at which combustion of a material becomes self-sustaining.

**IIA** Incinerator Institute of America.

**II-PLP<sup>®</sup>** Double-pass reverse osmosis system with interstage chemical feeds for pH adjustment by USFilter/Rockford.

**ilmenite** A dense mineral often used as filter media in a granular media filter.

**IMAC<sup>TM</sup>** Ion exchange resins by Rohm & Haas, Co.

**imbibition** The absorption or adsorption of water by a solid or colloid that results in swelling.

**IMF Protector™** Drinking water treatment system by Smith & Loveless, Inc.

**Imhoff cone** Cone-shaped container used to determine the volume of settleable solids in a specific volume of water.

**Imhoff tank** A two-story wastewater treatment tank developed by Karl Imhoff in which sedimentation occurs in the upper compartment and anaerobic digestion occurs in the lower compartment. Also called an “Emscher fountain.”

**immediately dangerous to life or health (IDLH)** The maximum environmental concentration of a substance from which one could escape from a 30 minute exposure without irreversible adverse health effects.

**immiscible** Incapable of being mixed.

**immunoassay** The identification of a substance based on its capacity to act as an antigen.

**immunodeficiency** A lack of one or more immune functions.

**Impac™** Packing media for air stripping towers by Lantec Products, Inc.

**Impact™** Ion exchange resins by Sybron Chemicals, Inc.

**impact fee** Fee assessed new connections to a water or sewer system intended to recover a portion of the capital cost of the system.

**impeller** The rotating set of vanes in a turbine, blower, or centrifugal pump designed to cause rotation of a fluid mass.

**Imperial gallon** See “gallon, Imperial.”

**impermeable strata** Layers of clay or dense stone in the earth through which water cannot penetrate in measurable quantities.

**impervious** Not allowing the passage of water at ordinary hydrostatic pressure.

**impingement** (1) The entrapment of fish and other marine life on the surface of an intake screen when a high water velocity prevents escape. (2) The striking of a surface by a moving fluid.

**impoundment** A pond, lake, or reservoir created through the use of a structural barrier such as a dam, levee, or dike.

**impressed voltage cathodic protection** The use of an impressed current to prevent or reduce the rate of corrosion of a metal in an electrolyte by making the metal the cathode for the impressed current.

**Impulse®** Counter-current water softeners by USFilter/Lowell.

**impulse turbine** An energy recovery device used to recover pressure energy from reverse osmosis brine streams.

**impurity** A chemical substance which is unintentionally present with another chemical substance or mixture.

**IMR** Infant mortality rate.

**IMS** See “Ion Mobility Spectrometry (IMS).”

**IMS®** Filter media support cap for sand filters by F.B. Leopold Co., Inc.

**in situ** Treatment or disposal methods that do not require movement of contaminated material.

**in vitro study** A laboratory study conducted in glassware.

**in vivo study** A study conducted in a living organism.

**in-channel storage** The water storage volume in a channel or canal above the minimum water level required for conveyance.



**incidence of illness** The rate of occurrence of new cases of disease in a defined population over a specified period of time.

**incidental recharge** Groundwater recharge occurring as a result of human activities such as irrigation which are unrelated to a recharge project.

**incineration** The process of reducing the volume of a solid by burning of organic matter.

**incinerator** A furnace or device for incineration.

**inclined plate separator** A series of parallel inclined plates that can be used to increase the efficiency of clarifiers and gravity thickeners.

**incompatible waste** A hazardous waste that may cause corrosion or decay of containment materials or is unsuitable for comingling with another waste under uncontrolled conditions because of the hazardous reactions that may result.

**incrustant** Solids formed as a crust on the inside wall of a pipe.

**incubate** To maintain optimum environmental conditions for growth and reproduction of viable microbes.

**Incutrol** Biochemical oxidation measuring and temperature control apparatus for BOD incubation by Hach Co.

**index organism** See "indicator organism."

**indicator organism** Microbes that indicate the absence or presence of a specific pollutant.

**indirect discharger** Water treatment plants that discharge pollutants to publicly owned treatment works.

**indirect reuse** The beneficial use of reclaimed water after releasing it for storage or dilution into natural surface waters or groundwater.

**indirect source** Any facility, building, property, road, or parking facility that attracts motor vehicle traffic and, indirectly, causes pollution.

**induced air flotation (IAF)** The clarification of suspended material using dispersed air bubbles that attach to hydrophobic surfaces causing materials to collect as a froth on the surface.

**induced draft cooling tower** A cooling tower in which the air flow through the tower is induced by means of an electrically operated fan.

**industrial waste** Waste generated by manufacturing or industrial practices that is not a hazardous waste regulated under Subtitle C of RCRA.

**industrial wastewater** Liquid wastes resulting from industrial practices or processes.

**inert** Lacking active properties and unable to react with other substances.

**inertial separator** A device that uses centrifugal force to separate waste particles.

**infectious agent** Any organism that is capable of being communicated in body tissues and causing disease or adverse health impacts in humans.

**infectious dose 50 (ID<sub>50</sub>)** The microbe dose that will infect 50% of a population to which it is applied.

**infectious waste** Equipment, instruments, pathological specimens, or other disposable wastes that may be contaminated from persons who are suspected to have a communicable disease or have been diagnosed with a communicable disease.

**infiltration** (1) Water entering a sewer system through broken or defective sewer pipes, service connections, or manhole walls. (2) Wind-induced air movement into a building through openings in walls, doors, or windows.

**infiltration gallery** A horizontal underground conduit of screens, perforated pipes, or porous material which collects percolating water, often under a river bed.

**Infinity™** Continuous later filter underdrain by Roberts Filter Group.

**inflammable** Easily set on fire.

**inflow** Surface and subsurface water or stormwater discharged into a sewer system.

**inflow/infiltration (I/I)** The total quantity of water from inflow and infiltration without distinguishing the source.

**influent** Water or wastewater flowing into a basin or treatment plant.

**Information Collection Rule (ICR)** An EPA rule requiring water utilities serving more than 10,000 customers to conduct monitoring which will aid in the gathering of data for use in developing the D/DPB Rule and ESWTR.

**infrared furnace** A furnace using infrared radiant heat emitted from silicon carbide resistance heating elements to rapidly heat organic wastes to combustion temperatures.

**infrared radiation** Low energy radiation with wavelengths longer than visible light and shorter than radio waves.

**infrastructure** The fundamental network of facilities, installations, and utility systems serving a community.

**infuse** (1) To pour a liquid into or upon. (2) To steep in water or liquid without boiling so as to extract soluble constituents.

**inhalable diameter** The diameter of a particle considered to be less than 15 micrometers for humans which are capable of being inhaled and deposited anywhere within the respiratory tract.

**inhalation LC<sub>50</sub>** The concentration of a substance expressed as milligrams per liter of air which is lethal for 50% of the test population.

**inhibitor** A chemical that interferes with a chemical reaction.

**Inipol™** Oil slick dispersant by Elf Atochem North America, Inc.

**initiator** A chemical that can cause the initial step in the carcinogenesis process.

**injection well** A hole drilled below the ground surface into which wastewater or treated effluent is discharged.

**inlet** (1) A surface connection to a drain pipe. (2) A structure at the diversion end of a conduit. (3) The upstream end of any structure through which water may flow. (4) A form of connection between the surface of the ground and a drain or sewer for the admission of surface or storm water. (5) An intake.

**innovative technology** A process or technique which has not been fully proven under the circumstances of its contemplated use and which represents an advancement over the state of the art.

**inoculum** (1) Bacterium placed in compost to start biological action. (2) A medium containing organisms that is introduced into cultures or living organisms.

**inorganic carbon** The carbon present in an inorganic compound such as carbon dioxide or calcium carbonate.

**inorganic compound** Compounds that contain no carbon or contain only carbon bound to elements other than hydrogen.

**inorganic contaminant (IOC)** An inorganic substance regulated by the EPA for compliance with drinking water requirements.

**inorganic matter** Substances of mineral origin that do not contain hydrocarbons and are not subject to decay.

**insecticide** A pesticide compound specifically used to kill or prevent the growth of insects.

**In-Situ Oxygenator™** Mechanical floating aerator by Praxair, Inc.

**insoluble** A compound that has very low solubility.

**InSpectra™** UV analyzer by Azur Environmental.

**Instant Ocean®** Mineral concentrate used to simulate seawater salinity by Aquarium Systems.

**InstoMix** In-line and in-channel mixers by Walker Process Equipment.

**instrument detection limit (IDL)** Lowest concentration of a chemical that can be detected by an instrument without correction for the effects of a sample matrix or method-specific parameters.

**instrumentation** Use of technology to control, monitor, or analyze physical, chemical, or biological parameters.

**intake** (1) The works or structures at the head of a conduit into which water is diverted. (2) The process or operation by which water is absorbed into the ground and added to the saturation zone. (3) The flow or rate of flow into a canal, conduit, pump, stack, tank, or treatment process before treatment.

**Integra®** Bladder pumps by Solinst Canada Ltd.

**integrated exposure assessment** Cumulative summation (over time) of the magnitude of exposure to a toxic chemical in all media.

**Intellisieve** Rotary fine screen filter by Smith & Loveless, Inc.

**IntensAer** Radial surface aerator formerly offered by Walker Process Equipment.

**inter-** Prefix meaning between or among.

**interceptor sewer** A sewer that receives flow from a number of other sewers or outlets for disposal or conveyance to a treatment plant.

**intercondenser** A condenser used between stages to reduce steam consumption in the steam jet vacuum system in an evaporator system.

**interconnecting piping** Piping, usually field-installed, that connects equipment skids or unit processes to one another.

**interface** The common boundary between two substances such as water and a solid and water and a gas, or between two liquids such as water and oil.

**interfacial tension** The tension that occurs at the interface between two fluids or a liquid and a solid.

**intergranular corrosion** Corrosion at or near the grain boundaries.

**Inter-Mix®** Slow speed mixer by Air-O-Lator Corp.

**Internalift®** Enclosed screw pump by USFilter/CPC.

**International Process System** Former supplier acquired by USFilter/CPC.

**International Shredder** Sewage shredder by ZMI/Portec Chemical Processing.

**Interox America** Former name of Solvay America.

**Inter-Sep™** Rotary screen by Dontech, Inc.

**interstate waters** Waters that flow across or form part of state or international boundaries, or coastal waters.

**interstice** An open space in granular material that is not occupied by solid material.

**interstitial monitoring** The continuous surveillance of the space between the walls of an underground storage tank.

**interstitial water** (1) Water contained in the interstices of rocks. (2) Extracellular water between cells.

**intra-** Prefix meaning within or inside.

**Intracid®** Water tracing dye by Crompton & Knowles Colors, Inc.

**inverse solubility** The characteristic attributed to a substance that becomes less soluble with increasing temperature.

**inversion** The abnormal atmospheric condition that occurs when the air temperature increases with elevation.

**invert** The lowest point of the internal surface of a drain, sewer, or channel at any cross section.

**inverted siphon** A u-shaped pipe used to convey flow under a river, road, or other obstruction. Also called a “sag line.”

**in-vessel composting** Composting system with integral material handling and in-vessel mixing and aeration.

**IOC** (1) See “inorganic contaminant (IOC).” (2) Inorganic chemicals.

**iodinator** A mechanical device used to introduce iodine into water for sanitization purposes.

**iodine** A nonmetallic element in the halogen group sometimes used as a disinfectant.

**iodine number** A surrogate value indicating an activated carbon’s ability to adsorb low molecular weight organics.

**iodometric titration** See “Winkler titration.”

**ion** An electrically charged atom, molecule or radical.

**ion chromatography (IC)** A technique for separating and measuring the quantities of different ions present in a sample based on their affinity for an adsorption medium.

**ion exchange (IX or IE)** A chemical process involving the reversible exchange of ions between a liquid and a solid.

**Ion Grabber** Electrolytic purification unit by Hoffland Environmental Inc.

**Ion Mobility Spectrometry (IMS)** Continuous emissions analyzer used to measure pollutants in gases.

**Ion Stick®** Electrostatic water treater for prevention of scale and fouling by York Energy Conservation.

**Ionac®** Ion exchange resins by Sybron Chemicals, Inc.

**ionic strength** A measure of solution strength based on both the concentrations and valences of the ions present.

**ionization** The process by which an atom or molecule acquires a positive or negative electrical charge through the loss or gain of electrons.

**ionization chamber** A device that measures the intensity of ionizing radiation.

**ionizing radiation** Radiation that can strip electrons from atoms.

**ionosphere** The upper level of the earth’s atmosphere beginning at an altitude of approximately 80 km.

**Ionpure®** High purity water treatment products and services by USFilter/Lowell.

**Iopor** Low pressure ultrafiltration system formerly offered by GL&V/Dorr-Oliver, Inc.

**IP** Inhalable particulates.

**IPA** Isopropyl alcohol.

**IPCC** Intergovernmental Panel on Climate Change.

**IPLP<sup>®</sup>** Double-pass reverse osmosis system by USFilter Corp.

**IPP** Independent power producer.

**IPS Composting System** In-vessel composting system by USFilter/CPC.

**IQS/3<sup>™</sup>** Programmable controller used to operate and monitor water treatment systems by Culligan International, Corp.

**iron** A common naturally occurring metallic element found in dissolved form in most water supplies. Chemical formula is Fe.

**iron bacteria** Bacteria capable of metabolizing ferrous iron often from water or steel pipes. See also “crenothrix polyspora.”

**Iron Humate<sup>®</sup>** An iron source for agricultural soils and turf grasses produced from water treatment plant sludges by Kemiron.

**Iron Remover** Contact bed type iron removal system by Walker Process Equipment.

**iron salt** An iron-based coagulant used in water and wastewater treatment.

**irradiated food** Food subject to brief radioactivity, usually gamma rays, to kill insects, bacteria, and mold, and to permit storage without refrigeration.

**irradiation** Exposure to radiation of wavelengths shorter than those of visible light for medical purposes, to sterilize foodstuffs, or to induce polymerization of monomers or vulcanization of rubber.

**irreversible effect** An effect characterized by the inability of the body to partially or fully repair injury caused by a toxic agent.

**irrigation** The artificial application of water to meet the requirements of growing plants or grass that are not met by rainfall alone.

**irrigation efficiency** The amount of water stored in the crop root zone compared to the amount of irrigation water applied.

**irritant** A substance that can cause irritation of the skin, eyes, or respiratory system. Effects may be acute from a single high level of exposure or chronic from repeated low-level exposures to such compounds as chlorine, nitrogen dioxide, and nitric acid.

**ISA** Instrument Society of America.

**ISCO** In-situ chemical oxidation.

**ISEP<sup>®</sup>** Ion exchange systems by Advanced Separation Technologies.

**ISF<sup>™</sup>** Induced air flotation unit by Baker Hughes Process Systems.

**ISO** International Organization for Standardization.

**ISO 9000** Certification conferred to a manufacturer that has demonstrated the capability of running an integrated business from initial design through manufacture.

**ISO 14000** A series of guidance standards to provide businesses with a structure for managing varied environmental concerns.

**ISO 14001** Environmental management system standards for manufacturing and service industries.

**isobar** A line on a weather map that joins all points of equal barometric pressure.

**isobath** A line on a map connecting all points of equal depth above the surface of a water-bearing formation or aquifer.

**isochrone** A line on a map connecting all points having the same time of travel for contaminants to move through the saturated zone and reach a well.

**isohaline** A line on a map connecting points having equal amounts of salinity.

**isohyet** A line on a map connecting points that receive equal average amounts of precipitation.

**isomer** A chemical compound that has the same molecular formula but different molecular structure, as another compound.

**isopleth** A line on a map connecting points at which a certain variable has the same value.

**isotherm** A line on a weather map connecting points that have the same temperature.

**isothiazalon** A high molecular weight non-oxidizing biocide used to control membrane biofouling.

**isotopes** Atoms with the same atomic number but different atomic weights.

**isthmus** A narrow strip of land bounded by water on both sides and connecting two large land masses.

**ITT Marlow** Former name of ITT A-C Pump.

**IU** Industrial user.

**IWEM** See “CIWEM.”

**IWPF** Industrial wastewater pretreatment facility.

**IWS** USFilter/Industrial Wastewater Systems.

**IWT**<sup>®</sup> Illinois Water Treatment product line of USFilter/Rockford.

**IX** See “ion exchange (IX or IE).”

**IXPER**<sup>®</sup> Calcium peroxide by Solvay America.

## J

**J** See “joule (J).”

**J&A** Jones and Attwood product division of Waste-Tech, Inc.

**JAC Oxyditch** Oxidation ditch treatment system formerly offered by Chemineer, Inc.

**Jackbolt**<sup>™</sup> Aluminum clarifier cover by Enviroquip, Inc.

**jacking** A method of installing pipe by forcing it into a horizontal opening with horizontal jacks.

**JackKnife** Pivoting air header and drop pipe arrangement by Walker Process Equipment.

**Jackson turbidity unit (JTU)** An obsolete unit of measure used to quantify the water turbidity by observing the outline of a candle flame viewed through a water sample. Replaced by “NTU.”

**Jacquelyn**<sup>™</sup> Corrosion and zebra mussel resistant coating by Cook Screen Technologies, Inc.

**JAPCA** Journal of Air Pollution Control Association.

**jar test** A test procedure using laboratory glassware for evaluating coagulation, flocculation, and sedimentation in a series of parallel comparisons.

**Jayfloc** Polyelectrolyte used to enhance liquid/solid separation by Vulcan Performance Chemicals.

**J-Belt** Belt filter press by USFilter/Dewatering Systems.

**Jeffrey** Screening equipment product line offered by Jones & Attwood, Inc.

**Jeffrey®** Chain, sprocket, and related component products by Jeffrey Chain Corp.

**JelClear™** Granular filtration media having a coagulant bonded directly to the media grains by BetzDearborn-Argo District.

**jet** A stream of pressurized liquid or vapor from a nozzle or orifice.

**jet aeration** Wastewater aeration system using floor-mounted nozzle aerators that combine liquid pumping with air diffusion.

**Jet Breaker™** Screenings washer/compactor by Headworks, Inc.

**Jet Plant** Package wastewater treatment plant by Jet, Inc.

**Jet Shear** Continuous mixing system using jet nozzles by Flo Trend Systems, Inc.

**jet stream** A strong, thermally driven, high altitude wind.

**Jet Tech** Former name of USFilter/Jet Tech.

**Jet Tray** Deaerator by Cochrane Inc.

**Jet VIP™** Pulsed fabric filter by Wheelabrator Air Pollution Control, Inc.

**JETA** Vortex type grit collector by Waste-Tech, Inc.

**Jeta-Matic** Spray jet pressure leaf filter cleaning system by USFilter/Whittier.

**Jet-Chlor®** Tablet chlorine disinfection system by Jet, Inc.

**JETIII®** Fabric filter by Wheelabrator Air Pollution Control, Inc.

**JetMix™** Vortex mixing system for sludge storage basins by Liquid Dynamics Corp.

**jetsam** Floating jettisoned material.

**Jet-Tex** Leach bed filter fabric by Jet, Inc.

**jetty** A structure that extends into an open body of water to influence currents or tides or protect a harbor.

**Jet-Wet™** Dry polymer feeding system by Fluid Dynamics, Inc. and Ciba Specialty Chemicals.

**J-Flow** Gravity belt thickener by USFilter/Dewatering Systems.

**JH™** Series of air scrubbers for odor control by USFilter/Davis Process.

**Jigrit** Screw-type grit washer by Jeffrey Chain Corp.

**J-Mate®** Sludge volume reduction system by USFilter/Dewatering Systems.

**Johnson Filter** Former name of USFilter/Johnson Screens.

**Johnson Screen** Wedgewire screen media by USFilter/Johnson Screens.

**Jones and Attwood** Environmental product division of Waste-Tech, Inc.

**joule (J)** An SI unit of energy or work equal to the work done by the application of 1 newton acting through a distance of 1 meter.

**Joule™** Electrochemical flocculation system by Ecoloquip Inc.

**journal bearing** A cylindrical bearing that supports a rotating shaft.

**J-Press®** Plate and frame filter press by USFilter/Dewatering Systems.

**J-Spin** Centrifuge by USFilter/Dewatering Systems.

**J-Track™** Nonmetallic return track for chain and flight sludge collectors by USFilter/Envirex.

**JTU** See “Jackson turbidity unit.”

**JUD** Belt tracking system for belt filter press by Klein America, Inc.

**junction box** An enclosure within which electrical cables are connected and/or terminated.

**J-Vap™** Mechanical sludge dewatering and drying system by USFilter/Dewatering Systems.

**JWI** Dewatering equipment product line by USFilter/Dewatering Systems.

## K

**K soil horizon** A soil horizon in which the grains are cemented with  $\text{CaCO}_3$  to form a hardpan layer.

**K wastes** A class of hazardous wastes categorized from specific sources as established by the EPA and identified in 40 CFR 261.32.

**K<sup>2</sup> Modular™** Volumetric screw feeder by K-Tron North America.

**Kaldnes System** Biological wastewater treatment system by Waterlink Biological Systems.

**kame** A ridge or hill of stratified drift deposited by glacial meltwater.

**KAMET** Municipal effluent treatment system by Krofta Engineering Corp.

**Kan-Floc™** Wastewater flocculant/coagulant by Kem-Tron.

**kaolin** A type of fine white clay material.

**karst** A geologic formation of irregular limestone deposits with sinks, underground streams, and caverns.

**katabatic wind** A localized wind that flows down valley or mountainous slopes — usually at night — caused by the descent of cold air as the valley slopes undergo rapid nocturnal cooling.

**Katec®** Thermal oxidizer by Megtec Systems, Inc.

**Kat-Floc™** Wastewater flocculant/coagulant by Kem-Tron.

**Katox** Catalytic oxidizer by Adwest Technologies, Inc.

**KD-HF™** Deionization system by Kinetico Engineered Systems, Inc.

**Kebab™** Disc-type oil skimmer by Vikoma International Ltd.

**Keene** Former equipment manufacturer acquired by Amwell, Inc.

**Kenics®** Static mixer product line by Chemineer, Inc.

**Kenite®** Diatomite material by Celite Corp.

**Ketema** Product group of Baker Process/Ketema.

**Key-Pac** Package water/wastewater treatment plants by Pacific Keystone Technologies.

**Keystone** Former name of Pacific Keystone Technologies.

**K-Floc™** Wastewater flocculant/coagulant by Kem-Tron.

**K-Floor** Suspended monolithic filter floor by the former PWT Americas.

**kg** See “kilogram (kg).”

**kiln** A heated enclosure for processing a substance by drying or burning.

**kiln dust** See “cement kiln dust.”



**kilocalorie** See “calorie.”

**kilogram (kg)** A unit of mass equivalent to 1000 grams or approximately 2.205 pounds.

**kilopascal (kPa)** A unit of pressure equal to 1000 pascals, 0.3346 feet of hydraulic head, or 0.145 psi.

**kilowatt (kW)** A measure of power equal to 1000 watts; 1 hp equals 0.746 kilowatts.

**kilowatt-hour (kWh)** A unit of energy equal to that expended by 1 kilowatt in 1 hour.

**kinematic viscosity** A fluid’s absolute viscosity divided by its mass density.

**kinesis** An organism’s involuntary movement or reaction to an environmental stimulus.

**kinetic energy** Energy that is possessed by a body of matter as a result of its motion.

**kinetic head** The theoretical vertical height that a liquid may reach due to its kinetic energy.

**KIWA** Netherlands Waterworks Testing and Research Institute.

**Kiwi** Centrifuge conveyor by Alfa Laval Separation, Inc.

**Kjeldahl nitrogen** The sum of the organic plus ammonia nitrogen in a water sample.

**KL Series™** Cleaning powders for removal of membrane foulants by King Lee Technologies.

**Klampress®** Belt filter press by Ashbrook Corp. (U.S.) and Simon-Hartley, Ltd. (U.K.).

**Kleer Flow** Spiral wound reverse osmosis membranes by Great Lakes International, Inc.

**Klenphos-300** Zinc phosphate corrosion inhibitor by Klenzoid, Inc.

**Klensorb** Oil and grease absorbent by Calgon Carbon Corp.

**Knight-Botec** Auger compost mixer by Knight Manufacturing Corp.

**knot** A unit of speed equal to one nautical mile per hour (approximately 1.15 mph) used to describe the speed of winds or ships.

**Koagulator** Solids contact clarifier by USFilter/Zimpro.

**Koch Corrosion Control** Former name of KCC Corrosion Control Co.

**KochKleen®** Reverse osmosis cleaning chemicals by Koch Membrane Systems, Inc.

**KochTreat®** Antiscalants, stabilizers, and anti-microbial chemicals by Koch Membrane Systems, Inc.

**Koflo®** In-line static mixers by Koflo Corp.

**Komara™** Floating oil skimmer by Vikoma International Ltd.

**Kompakt** Tubular block media by NSW Corp.

**Kompress®** Belt filter press by Komline-Sanderson, Engineering Corp.

**Komprimat** Fish/screenings separation system by Brackett Geiger.

**Konsolidator** Wet scrubber solids filter by CMI-Schneible Co.

**Kopcke** Former name of REKO Industrial Equipment B.V.

**Koppers** Former manufacturer of traveling bridge filters whose product line was acquired by Infilco Degremont, Inc.

**Koro-Z** PVC biological filter media formerly offered by B.F. Goodrich Co.

**kPa** See “kilopascal (kPa).”

**kraft** An alkaline chemical pulping process using salt cake as makeup.

**Kraus-Fall** Peripheral feed clarifier by Smith & Loveless, Inc.  
**krill** A small, shrimp-like marine crustacean that is a major food source for whales, seals, and squid.  
**Krüger** Former name of USFilter/Krüger.  
**Kruger/Fuchs** Autothermal thermophilic aerobic digestion system by USFilter/Krüger.  
**KUBE<sup>3</sup>** Belt filter press by Klein America, Inc.  
**kW** See “kilowatt (kW).”  
**K-W Products** Former equipment manufacturer acquired by Smith & Loveless, Inc.  
**kWh** See “kilowatt-hour (kWh).”  
**Kyoto Protocol** A global agreement among 150 nations who met in Kyoto, Japan in 1997 to discuss a comprehensive plan to reduce greenhouse gas emissions in hopes of improving climatic conditions.

## L

**L\*ARO** Reverse osmosis system by the former L\*A Water Treatment Corp.  
**L/d** Liters per day.  
**L/d ratio** A simple parameter used to aid in sizing granular media filters based on the bed depth and effective size of media.  
**L-10 life** See “B-10 life.”  
**La Niña** A climatic cycle that results in what climatologists believe is the most normal wind, pressure, and current patterns in the tropics.  
**LADD** Lowest acceptable daily dose.  
**LAER** Lowest achievable emission rate.  
**Lagco** Parshall flume by F.B. Leopold Co., Inc.  
**lagoon** An excavated basin or natural depression that contains water, wastewater, or sludge.  
**Lagoonator<sup>TM</sup>** Submerged, fine bubble aeration diffusion device by USFilter/Envirex.  
**laid length** The total length of a pipe or pipeline after it has been placed in position.  
**lake** A large, inland body of water, usually more than 200,000 square meters.  
**Lake Aid Systems** Former name of LAS International.  
**Lakos IPC** Self-cleaning pump intake screen by Claude Laval Corp.  
**LAL test** See “Limulus Amebocyte Lystate test (LAL test).”  
**lamel** A thin plate.  
**Lamella<sup>®</sup>** Gravity settler/thickener using inclined plates by Parkson Corp.  
**LamGard** Automated oxygen control system by Gardner Denver Blower Division.  
**laminar flow** A flow situation in which fluid moves in smooth parallel layers with essentially no mixing or turbulence, usually with a Reynolds number less than 2000.  
**LAMP** Lake Acidification Mitigation Project.  
**Lam-Pak<sup>®</sup>** Package treatment plant by Graver Co.

**Lamson**<sup>®</sup> Centrifugal blower products by Gardner Denver Blower Division.

**Lanco Environmental**<sup>™</sup> Equipment product line of Waterlink Separations, Inc.

**Lancom**<sup>™</sup> Flue gas monitoring system by Land Combustion.

**Lancy**<sup>™</sup> Wastewater treatment product line offered by USFilter/Industrial Wastewater Systems.

**land application** The disposal of wastewater or municipal solids onto land under controlled conditions.

**land ban** RCRA provisions prohibiting land disposal of specific toxic materials unless they meet applicable treatment standards.

**land disposal** Application of municipal wastewater solids to the soil without production of usable agricultural products.

**Land Disposal Restrictions (LDR)** EPA-promulgated rules implementing the land ban.

**landfarming** Application of organic waste onto surface soil for the purpose of controlled biodegradation.

**landfill (LF)** A land disposal site that employs an engineering method of solid waste disposal to minimize environmental hazards and protect the quality of surface and subsurface waters.

**Landox**<sup>™</sup> Aeration system by WesTech Engineering Inc. (North America) and Landustrie Sneek BV.

**landscaping** The enhancement of the appearance of land by changing its contours and planting decorative vegetation.

**Landy**<sup>™</sup> Surface aerator product line by WesTech Engineering Inc. (North America) and Landustrie Sneek BV.

**Langelier Saturation Index (LSI)** A measure of the degree of saturation of calcium carbonate in water based on pH, alkalinity, and hardness. A positive LSI indicates that calcium carbonate may precipitate from solution to form scale.

**Lanpac**<sup>®</sup> Packing media for air stripping towers by Lantec Products, Inc.

**lapse rate** The rate at which temperature decreases as altitude increases.

**Laran**<sup>®</sup> An anaerobic wastewater pretreatment process by Lotepro Corp (Western Hemisphere) and Linde-KCA-Dresden GmbH.

**large calorie (Cal)** See “calorie.”

**large dam** Criteria established by ICOLD to categorize dams whose height 15 meters or more; or whose height is between 10-15 meters with a crest length of at least 500 meters with a reservoir volume of at least 1 million cubic meters.

**large quantity generator** Person or facility generating more than 1000 kilos (2200 pounds) of hazardous waste per month and subject to all RCRA requirements.

**large water system** A water system that serves more than 50,000 persons.

**large-quantity handlers (LQHs)** Universal waste handlers who accumulate more than 5000 kilograms of wastes.

**LAS** See “linear alkyl sulfonate (LAS).”

**Lasaire**<sup>®</sup> Lagoon aeration system by A.B. Marketech, Inc.

**latency period** The time elapsing from the first exposure of a chemical until the appearance of a toxic effect.

**latent heat** The heat required to cause a change of state at constant temperature, such as the vaporization of water or the melting of ice.

**lateral** A secondary pipe that extends from a main water pipe or header.

**Lateral Flow Sludge Thickener™** Gravity sludge thickener by Gravity Flow Systems, Inc.

**lateral sewer** A sewer which connects the collection main to the interceptor sewer.

**launder** A trough used to transport water.

**laundering weir** A v-notched overflow weir used to promote uniform flow rates.

**laundry wastes** Wastewater from industrial laundries that may be characterized by the presence of lint, fibers, oils, and greases.

**Lavaso!™** Liquid reverse osmosis membrane cleaners by Professional Water Technologies, Inc.

**LC** (1) Lethal concentration. (2) Liquid chromatography.

**LC<sub>50</sub>** See “lethal concentration.”

**LCL** Lower control limit.

**LCR** Lead and Copper Rule.

**LCRS** Leachate collection and removal system.

**LD** See “lethal dose.”

**LD<sub>50</sub>** See “lethal dose (LD).”

**LDC** London Dumping Convention.

**LDCRS** Leachate detection, collection, and removal system.

**LDR** See “Land Disposal Restrictions (LDR).”

**LDS** Leak detection system.

**leach field** The area of land into which a septic tank drains or wastewater is discharged.

**leachate** Fluid which percolates through solid materials or wastes and contains suspended or dissolved materials or products of the solids.

**leachate collection system** A system that gathers leachate and pumps it to the surface for treatment.

**leaching** The process by which soluble materials are washed out of soil, ore, or buried waste, and into a water source.

**lead** A trace element and cumulative poison that may be inhaled or ingested in food or water. Chemical formula is Pb.

**Leadtrak** Test kits used to determine lead content of water by Hach Co.

**leaf filter** A precoat filter with flat elements or leaves.

**leakage** (1) The presence of an ionic species in an ion exchanger effluent that usually indicates bed exhaustion. (2) The uncontrolled loss of water from a tank or aquifer.

**Leakwise®** Oil on water monitoring systems by Agar Corp.

**L'eau Claire®** Upflow filter products by USFilter/Whittier.

**Lectra/San** Marine sanitation system by Exceltec International Corp.

**left bank** The left hand bank of a river or stream when facing downstream.

**Legionella** A genus of bacteria, some species of which have caused a type of pneumonia called Legionnaires Disease.

**LEL** See “lower explosive limit (LEL).”

**Lemna®** Biological wastewater treatment system utilizing aquatic duckweed by Lemna Corp.

**Lemnaceae** Floating aquatic plants that provide a habitat for aquatic organisms capable of metabolizing wastewater organics. Also known as “duckweed.”

**LemTec™** Biological wastewater treatment system and products by Lemna Corp.

**lentic water** Standing or stagnant pond, swamp, or marsh water.

**Leo-Lite** Fiberglass effluent and scum trough by F.B. Leopold Co., Inc.

**Leopold®** Water and wastewater treatment products by F.B. Leopold Co., Inc.

**LeoVision** PC-driven graphics display of treatment plant operating conditions by F.B. Leopold Co., Inc.

**LEPA** The designation for a low-energy, precision application irrigation sprinkler.

**lethal** Causing, or being able to cause, death.

**lethal concentration** The concentration of a substance which is fatal to a specified percentage of the population, usually expressed at the 50% level as LC<sub>50</sub>.

**lethal dose (LD)** The quantity of a substance which is fatal to a specified percentage of the population, usually expressed at the 50% level as LD<sub>50</sub>.

**LEV** Low emissions vehicle.

**levee** A dike or embankment along a river built to prevent flooding of the surrounding land.

**Level Bed Agitator** Agitator used in composting system by USFilter/CPC.

**Level Mate™** Level measurement instrument by Ametek, PMT Products.

**Level of Concern (LOC)** The concentration in air of an extremely hazardous substance above which there may be serious immediate health effects to anyone exposed for short periods.

**levigation** The separation of fine particles from coarser ones by suspending them in a liquid.

**Lewatit®** Ion exchange resin by Bayer Corp.

**LF** See “landfill (LF).”

**LFG** Landfill gas.

**LFL** Lower flammability limit.

**LHW** Liquid hazardous waste.

**LI** See “Langelier Saturation Index (LSI).”

**lichen** A sponge-like plant growing on wood, stone, or soil which is formed by an association of a fungus and alga, and often used as an air pollution indicator species.

**life cycle cost** A method of comparing costs of various alternatives which considers capital, operations, and maintenance costs.

**Lifeserver™** Built-in-place wastewater treatment plants by USFilter/Davco.

**lifetime exposure** Total amount of exposure to a substance which a human would receive in a lifetime, usually assumed to be 70 years.

**Lift Screen** Reciprocating rake bar screen by USFilter/Headworks Products.

**lift station** A chamber that contains pumps, valves, and electrical equipment necessary to pump water or wastewater.

**ligand** An atom, ion, or molecule bound to a central atom of a molecule to form a complex.

**Lightspeed** Digital fiber optic flowmeter by Newport Electronics.

**lignin** An organic substance that forms the chief part of wood tissue.

**lignite** A type of coal with a low energy content; also called “brown coal.”

**LIMB** Limestone-injection multistage burner.

**Limberflo** Precast filter bottom system by USFilter/Aerator Products.

**lime** The term generally used to describe ground limestone (calcium carbonate), hydrated lime (calcium hydroxide), or burned lime (calcium oxide).

**lime kiln** A unit used to calcine lime.

**lime recalcining** Recovery of lime from water or wastewater sludge, usually with a multiple hearth furnace.

**lime scale** Scale formed by hard water containing a high percentage of calcium carbonate.

**lime slaker** A device used to hydrate quicklime.

**lime softening** The addition of sufficient lime to raw water to achieve a reduction of carbonate hardness.

**lime stabilization** The addition of lime to untreated sludge to raise the pH to 12 for a minimum of 2 hours to chemically inactivate microorganisms.

**lime-and-settle** Common term for treatment technologies that utilize chemical precipitation and sedimentation processes.

**lime-soda softening** The addition of sufficient lime and soda ash to raw water to achieve a reduction of carbonate and noncarbonate hardness.

**limestone** A sedimentary rock composed primarily of calcium carbonate.

**limestone scrubbing** Use of a limestone and water solution to remove gaseous stack-pipe sulfur before it reaches the atmosphere.

**limit of detection (LOD)** The minimum concentration that can be detected by an analytical method. Generally the same as “instrument detection limit.”

**limnology** The study of fresh water lakes and their flora and fauna.

**LIMS** Laboratory information management system.

**Limulus Amebocyte Lystate test (LAL test)** A test used to determine presence of endotoxins in treated water, commonly used on water to be used for pharmaceutical purposes.

**lindane** A pesticide that causes adverse health effects in domestic water supplies and is toxic to freshwater fish and aquatic life.

**Lindox<sup>®</sup>** A pure oxygen, activated sludge wastewater treatment process by Lotepro Corp. (Western Hemisphere) and Linde-KCA-Dresden GmbH.

**linear alkyl sulfonate (LAS)** A family of chemical compounds widely used as detergents, sometimes called “soft detergents” because they are readily degraded to simpler substances by biological action.

**liner** (1) A barrier of plastic, clay, or other impermeable material which prevents leachate from contacting surface or subsurface water. (2) A protective, corrosion resistant layer attached or bonded to the inside of a tank.

**Link-Belt<sup>®</sup>** Environmental equipment product line by USFilter/Envirex.

**Linpor<sup>®</sup>** An activated sludge wastewater treatment process by Lotepro Corp. (Western Hemisphere) and Linde-KCA-Dresden GmbH.

**LinX<sup>™</sup>** A spool valve used in reverse osmosis energy recovery devices by Desal Co. Ltd.

**lipids** A group of organic compounds including fats that are water insoluble and important in the structure of cell walls and membranes.

**lipophilic** Having an affinity for oil.

**Liquaclone**<sup>®</sup> Hydrocyclonic solids separation unit for removal of granular solids from liquid discharges by Sanborn Environmental Systems.

**Liquapac**<sup>™</sup> Solids removal unit for spent coolant/oil clarification applications by Sanborn Environmental Systems.

**liquefaction** The process of making or converting a solid or gas to a liquid.

**Liqui/Jector**<sup>®</sup> Liquid/gas coalescer by Osmonics, Inc.

**Liqui-Cel**<sup>®</sup> Membrane contactors by Celgard LLC.

**liquid** The state of matter between the solid and gaseous states in which matter possesses a definite volume and flows freely but has no definite shape.

**Liquid A**<sup>™</sup> Sludge stabilization process by RDP Technologies, Inc.

**Liquid Carbonic** Product line acquired by Praxair, Inc.

**liquid chlorine** Chlorine compound that contains no water and results from gaseous chlorine under high pressure and which is stored in steel drums and cylinders.

**liquid sludge** Sludge which contains sufficient water flow by gravity or permit pumping.

**liquid-liquid extraction (LLE)** See “solvent extraction.”

**Liquid-Miser** Activated carbon odor absorbers by Westport Environmental Systems.

**Liquidow**<sup>®</sup> Calcium chloride products by Dow Chemical Co.

**LiquidPure** Small, low-cost activated carbon drum adsorber by American Norit Company, Inc.

**Liqui-Fuge**<sup>™</sup> Internally fed rotary fine screen by Vulcan Industries, Inc.

**LiQuilaz**<sup>®</sup> In-line sensor for particle measurement by Particle Measuring Systems, Inc.

**Liquiphant** Liquid level indicator by Endress+Hauser.

**Liqui-pHase**<sup>®</sup> Carbon-dioxide neutralization system by Praxair, Inc.

**LiquiPro**<sup>™</sup> Metering pumps by Liquid Metronics, Inc.

**Liquipure** Company acquired by USFilter/Lowell.

**Liqui-Strainer** Externally fed rotating drum screen by Vulcan Industries, Inc.

**Liquitron**<sup>®</sup> pH/ORP controllers by Liquid Metronics, Inc.

**liquor** A aqueous solution of one or more chemical compounds.

**listed hazardous waste** The designation for a waste material that appears on an EPA list of specific hazardous wastes or hazardous waste categories.

**liter (L)** A unit of volume equal to 1000 cubic centimeters or 1.057 quarts. One liter of water weighs 1000 grams. Also called “litre.”

**lithology** The character or description of rocks in terms of their physical and chemical characteristics.

**lithosphere** The solid portion of earth composed of rocks and soil.

**Litmustik**<sup>®</sup> Pocket pH tester by Omega Engineering, Inc.

**litre** See “liter (L).”

**litter** Solid waste or garbage from human activity deposited indiscriminately.

**Little Fox** Modular wastewater treatment plant for marine applications by Red Fox Environmental, Inc.

**littoral zone** The area of the shore line between high and low tides where rooted water plants can grow.

**live bottom bin** A storage bin in which controlled bottom discharge is facilitated by a vibrating device or other mechanical mechanism.

**LLD** Lower limit of detection. Generally the same as “instrument detection limit.”

**LLE** Liquid-liquid extraction. See “solvent extraction.”

**LLL** Low liquid level.

**LLQ** Lower limit of quantitation. Generally the same as “estimated quantitation limit.”

**LLW** See “low-level radioactive waste (LLW).”

**LME<sup>®</sup>** Inclined plate separator by USFilter/Zimpro.

**LMI** Liquid Metronics, Inc.

**LNG** Liquefied natural gas.

**Lo/Pro<sup>™</sup>** Packaged odor control system by USFilter/RJ Environmental.

**Load Limitor** Automatic chain tensioning system for traveling water screens by USFilter/Rex & Link-Belt Products.

**loading rate** The flow rate per unit area of treatment process through which water flows.

**LOAEL** See “lowest-observed-adverse-effect level (LOAEL).”

**loam soil** A rich soil consisting of organic material, sand, silt, and clay.

**Lobe-Aire<sup>®</sup>** Rotary lobe blower by Spencer Turbine Co.

**Lobeflo<sup>™</sup>** Rotary lobe pump by MGI Pumps, Inc.

**Lobestar<sup>®</sup>** Mixing eductor by Vortex Ventures.

**LOC** See “Level of Concern (LOC).”

**local ventilation** The drawing off and replacement of contaminated air directly from its source.

**localized corrosion** Corrosion taking place at a relatively high speed in limited sections of the area exposed to the corrosive medium.

**Lo-Cat<sup>®</sup>** Hydrogen sulfide oxidation process for anaerobic bio-gas systems by USFilter/Gas Technologies.

**loch** A lake or narrow body of water surrounded by land and stretching to the sea (Scottish).

**lock** A short section of a canal equipped with gates at both ends so that the water level can be changed to raise or lower boats from one level to another.

**LOD** See “limit of detection (LOD).”

**LOEL** Lowest-observed-effect concentration.

**log boom** A floating structure of logs or timber used to protect an intake, dam, or other structure by deflecting floating material.

**log reduction** See “log removal.”

**log removal** A means of indicating the level of  $\log_{10}$  removal, inactivation, or kill of pathogenic organisms through physical-chemical treatment of water. For example, 1-log removal equals a 90% reduction of the specified organism; a 2-log reduction equals a 99% reduction; and a 3-log reduction equals a 99.9% reduction.

**log-death phase** Bacterial growth phase where the microbe death rate exceeds the production of new cells.

**LogEasy<sup>™</sup>** Particle counter by Hach Co.



**log-growth phase** Bacterial growth phase where cells divide at a rate determined by their generation time and their ability to process food.

**Lo-Head™** Traveling bridge filter by Agency Environmental, Inc.

**Lo-Hi™** Low pressure, high intensity ultraviolet lamps by PCI-Wedeco Environmental Technologies, Inc.

**LOI** Loss on ignition.

**long ton** A unit of weight equal to 2240 pound.

**Longopac** Screenings bagging system by Spirac.

**LoNox™** Combustion burner by John Zink Co.

**LOOP** Package wastewater treatment process using oxidation ditch process by Smith & Loveless, Inc.

**Loop Chain** Nonmetallic, filament wound sludge collector chain by USFilter/Envirex.

**Lo-Pro™** Air stripper by Geotech/ORS Environmental Systems.

**LOQ** Limit of quantitation. Generally the same as “estimated quantitation limit.”

**loss of head** A decrease in head energy that results from a bend, obstruction, or expansion in a channel or pipeline.

**lotic water** Rapidly flowing water of a river or stream.

**Love Canal** An industrial chemical waste site in Niagara Falls, NY which contaminated a residential area and contributed to public furor resulting in the 1980 enactment of Superfund.

**low NOx burners** One of several combustion technologies used to reduce emissions of nitrogen oxides.

**low sodium water** Bottled water containing 140 mg or less of sodium per serving.

**low sulfur coal** See “compliance coal.”

**lower explosive limit (LEL)** The concentration of a compound in air below which the mixture will not catch on fire.

**lowest-observed-adverse-effect level (LOAEL)** The lowest dose of a substance to cause an increase in the frequency or severity of an adverse effect in an exposed population.

**low-flow toilet** A toilet that uses no more than 1.6 gallons of water per flush.

**low-level radioactive waste (LLW)** Wastes less hazardous than most of those associated with nuclear reactor, usually generated by hospitals, research laboratories, and certain industries.

**LOX** Liquid oxygen.

**LP Block™** Low profile filter underdrain by Tetra Process Technologies.

**lpf** Liters per flush.

**LPG** Liquefied petroleum gas.

**LQG** Large quantity generator.

**LQHs** See “large-quantity handlers (LQHs).”

**LSC™** Package spray-type deaerating heater by Graver Co.

**LSI** See “Langelier Saturation Index (LSI).”

**LSTK** Lump sum turnkey.

**LTA** Low temperature additive.

**LTESWTR** Long-Term Enhanced Surface Water Treatment Rule.

**LUFT** Leaking underground fuel tank.

**lumen** (1) The bore or axial hole through the center of a hollow fiber membrane or tubular structure. (2) A unit of light measurement equal to the light given off in a unit solid angle from a uniform point source of one candela.

**LUST** Leaking underground storage tank.

**LVHC** Low volume, high concentration.

**LWL** Low water level.

**LWT**<sup>®</sup> Liquid Waste Technology, Inc.

**LX** Leachability index.

**Lycotm** Wastewater treatment equipment product line by USFilter/Industrial Wastewater Systems.

**Lynx**<sup>®</sup> Chain driven bar screen by Waterlink Separations, Inc.

**lyse** To undergo lysis.

**lysimeter** A device used to measure or obtain samples of water draining through soil.

**lysis** The rupture of a cell that results in loss of its contents.

## M

**m<sup>3</sup>** See “cubic meter (m<sup>3</sup>).”

**mA** Milliampere.

**MacerAcer**<sup>TM</sup> Screenings conditioning equipment by Brackett Geiger.

**macerate** To chop or tear.

**Macho Monster**<sup>®</sup> In-channel sewage grinder by JWC Environmental.

**MacPac** Chemical feed package by Milton Roy Co.

**Macro-Cat** Ion exchange resin by Sybron Chemicals, Inc.

**macroencapsulation** Isolation of waste by embedding or surrounding it with a material that acts as a barrier between the waste and air, water, or other materials.

**macrofloc** Destabilized floc particle that is too large to penetrate a granular media filter bed.

**macrofouling** The biological fouling of a water system with macroorganisms including clams, barnacles, and mussels.

**Macrolite**<sup>®</sup> Ceramic filter media by Kinetico Engineered Systems, Inc.

**macroorganisms** All organisms larger than microscopic and visible to the unaided eye.

**macrophyte** A type of macroscopic plant life.

**macroporous resin** An ion exchange resin with a high resistance to oxidation and organic fouling used primarily in applications with high molecular weight organic matter.

**macroreticular resin** An ion exchange resin having a pore structure even after drying.

**macroscopic** Capable of being seen with the naked eye.

**MACT** See “maximum achievable control technology (MACT).”

**MACTherm<sup>®</sup>** Regenerative oxidizer by Applied Regenerative Technologies Co.

**MADAM** Methacryloyl ethyl dimethyl amine.

**MAF** Million acre feet.

**Magicblock<sup>™</sup>** Fluid control system by Osmonics, Inc.

**Magna** Rotor aerator by Lakeside Equipment Corp.

**Magna Cleaner<sup>™</sup>** Liquid cyclone by Andritz-Ruthner, Inc.

**Magnafloc<sup>®</sup>** Coagulant aid by Ciba Specialty Chemicals

**Magnasol<sup>®</sup>** Inorganic and organic coagulant products by Ciba Specialty Chemicals

**MagneClear<sup>®</sup>** Magnesium hydroxide water treatment products by Martin Marietta Specialties, Inc.

**magnetite** A black, iron oxide mineral also known as “lodestone.”

**Magnifloc<sup>®</sup>** Polyelectrolyte used to enhance liquid/solid separation by Cytec Industries, Inc.

**Magnum** Ultraviolet disinfection equipment by Atlantic Ultraviolet Corp.

**Magnum<sup>®</sup>** Belt filter press by Parkson Corp.

**Magnum<sup>™</sup>** Catalytic oxidizer by Megtec Systems, Inc.

**Magox<sup>®</sup>** Magnesium oxide by Premier Chemicals.

**Mahr<sup>™</sup>** Mechanically cleaned bar screen by Headworks, Inc.

**makeup water** Fluid introduced in a recirculating stream to maintain an equilibrium of temperature, solids concentration, or other parameter(s).

**malathion** A common organophosphate insecticide.

**M-alkalinity** See “methyl orange alkalinity.”

**Mallard** Bridge-mounted clarifier scum removal system by NSW Corp. (U.S.) and Copa Group (U.K.).

**malodor** An odor which causes annoyance or discomfort to the public and which has been determined to be objectionable.

**Mammoth<sup>®</sup>** Brush aerator by USFilter/Zimpro.

**mandatory recycling** Programs which by law require consumers to separate trash so that some or all recyclable materials are recovered for recycling rather than going to landfills.

**manganese greensand** See “greensand.”

**Manganex Process** Manganese greensand filtration process by Roberts Filter Group.

**Manhattan Process** High rate filtration process by Roberts Filter Group.

**manhole** See “personnel access opening.”

**manifest** A form used to identify the origin, quantity, and composition of a hazardous waste during its transportation from the point of generation to the point of final treatment or disposal.

**manifest system** Tracking of hazardous waste from generation through disposal with accompanying documents known as manifests.

**mannich polymer** Sludge conditioning polymer produced by using a formaldehyde catalyst to promote a chemical reaction to create the organic compound.

**Manning’s formula** Formula used to measure flow in an open channel based on the cross-sectional area of the flowing stream and the hydraulic radius, slope, and roughness of the channel.

**manometer** A u-tube device filled with a liquid used to measure pressure differentials in liquids or gases.

**Manor**<sup>®</sup> Filter press by Simon-Hartley, Ltd.

**Manu-Matic** Manual pressure leaf filter cleaning system by USFilter Corp.

**Manver** Chemical composition used in analysis of water hardness by Hach Co.

**Manville Filtration** Former name of Celite Corp.

**manway** See “personnel access opening.”

**MARD**<sup>™</sup> Motor-actuated rotary distributor for trickling filters by USFilter/General Filter.

**marine sanitation device** Any equipment or process installed on board a vessel to receive, retain, treat, or discharge sewage.

**Marox** Pure oxygen wastewater treatment system by USFilter/Zimpro.

**MARS** Membrane-controlled biological wastewater treatment technology by USFilter/Krüger.

**marsh gas** Methane gas produced by the anaerobic decomposition of organic matter in wetland areas. Also called “swamp gas.”

**marshland** An area of soft wet land vegetated by reeds and grasses.

**masking** The blocking out or covering of a sound or smell with another.

**Maspac**<sup>®</sup> Plastic packing media by Clarkson Controls & Equipment Co.

**mass balance** An analysis that delineates changes that take place in a reactor or system by quantifying system inputs and outputs. Also known as “material balance.”

**mass burn** Solid waste incineration of garbage with a minimum of pretreatment or sorting.

**mass loading** The total amount of mass of a constituent flowing into a system.

**mass spectrometer** An instrument used for the analysis of organic materials in environmental samples by sorting ions according to their masses and electrical charges.

**Master-Flo** Bladder pump by American Sigma, Inc.

**material balance** See “mass balance.”

**Material Safety Data Sheet (MSDS)** Data sheet containing descriptive information required by OSHA for hazardous materials.

**materials recovery facilities (MRFs)** A central facility where recycled materials are prepared and sorted.

**maturation pond** An aerobic waste stabilization pond used for polishing treated wastewater effluent.

**MAX**<sup>™</sup> Reverse osmosis system product line by USFilter.

**MaxAir**<sup>™</sup> Wide band coarse bubble diffuser by Environmental Dynamics Inc.

**Maxflo**<sup>™</sup> Mixer by S&N Airoflo, Inc.

**Maxi-Flo**<sup>®</sup> Pressurized sand filter product line by USFilter Corp.

**Maxim**<sup>®</sup> Seawater conversion evaporator by Beaird Industries, Inc.

**Maximizer** Dewatering sludge press by Goodnature Products, Inc.

**MaxiMizer**<sup>®</sup> Solid bowl centrifuge by Alfa Laval Separation, Inc.

**maximum achievable control technology (MACT)** The level of air pollution control technology required by Clean Air Act.

**maximum contaminant level (MCL)** The maximum permissible level of a contaminant in water delivered to the free flowing outlet of the ultimate user of a public water system.

**maximum contaminant level goal (MCLG)** The maximum level of a contaminant, including an adequate safety margin, at which no known or anticipated adverse effect on human health would occur.

**maximum residual disinfectant level (MRDL)** The maximum level of disinfectant added for treatment that may not be exceeded at a consumer's tap without the possibility of adverse health effects.

**Maxipress** Former name of J-Belt belt filter press by USFilter/Dewatering Systems.

**Maxi-Rotor** Rotary brush aerator by USFilter/Krüger.

**MaxiSep** Oil/water separator by Hydro-Flo Technologies, Inc.

**Maxi-Strip®** Hydraulic venturi stripper for VOC removal by Hazleton Environmental, Inc.

**Maxi-Tank™** Tank sump by Hazleton Environmental, Inc.

**Maxi-Yield™** Polymer blending system by USFilter/Wallace & Tiernan.

**Max-Load™** Cartridge filter by Ronningen-Petter.

**Max-Pak™** Plastic packing media by Jaeger Products, Inc.

**Maz-O-Rator** Solids grinder by Robbins & Myers, Inc.

**MBAS** See "methylene blue active substance (MBAS)."

**MBBR™** Moving bed biofilm reactor by Waterlink Biological Systems.

**MBR** See "membrane bioreactor (MBR)."

**MBS®** Molecular bonding system to stabilize heavy metals by Solucorp Industries Corp.

**Mc®** Propeller flowmeter by McCrometer, Inc.

**MCC** Motor control center.

**McGinnes-Royce** Manufacturer of screening equipment whose product line was acquired by USFilter/Rex & Link-Belt Products.

**MCL** See "maximum contaminant level (MCL)."

**MCLG** See "maximum contaminant level goal (MCLG)."

**m-ColiBlue24™** Laboratory coliform test broth by Hach Co.

**MCRT** See "mean cell residence time (MCRT)."

**MDI** Metered dose inhaler.

**MDL** See "method detection limit."

**MDTOC** Minimum detectable threshold odor concentration.

**ME** Multiple effect. See "multiple effect distillation."

**me** See "milliequivalent (me)."

**mean cell residence time (MCRT)** The average time that a microbial cell remains in an activated sludge system. It is equal to the mass of cells divided by the rate of cell wasting from the system.

**mean flow** The arithmetic average flow at a given point for a specified period of time.

**mean sea level (MSL)** The average sea level for all stages of the tide.

**mean velocity** The average velocity of a fluid flowing in a channel, pipe, or duct, determined by dividing the discharge by the cross sectional area of the flow.

**meander** One of a naturally occurring series of bends or curves in a river, usually formed on a floodplain composed of unconsolidated alluvium.

**meander belt** The outermost limits of a floodplain along which a stream meanders.

**MEB** Multiple effect boiling. See "multiple effect distillation."

**mechanical aeration** The mechanical agitation of water to promote mixing with atmospheric air.

**mechanical coupling** A pipe coupling that does not require threading.

**mechanical draft cooling tower** A cooling tower that depends on fans for introduction and circulation of its air supply.

**mechanically emulsified oil** A classification of a free oil and water mixture subjected to severe turbulence where the oil droplets are in a range of 10 to 40 microns in size.

**MECO®** Mechanical Equipment Co., Inc.

**Mectan™** Grit chamber by John Meunier, Inc.

**MED** See “multiple effect distillation (MED).”

**media** Granular filtration or absorption material or ion exchange resin products used to form barriers to the passage of certain solids or molecules that are suspended or dissolved in water or wastewater. “Media” is the plural form of “medium.”

**medical waste** Any solid waste generated in the diagnosis, treatment, or immunization of humans or animals.

**Medina®** Bioremediation products by Medina Products Bioremediation Division.

**medium** The material used in a filter to form a barrier to the passage of certain suspended solids or dissolved molecules.

**medium-size water system** A water system that serves 3300 to 50,000 persons.

**Megacell™** Rectangular dissolved air flotation system by Krofta Engineering Corp.

**megaliter (ML)** A unit of volume equal to 1 million liter.

**Megatron™** Ultraviolet water purification system by Atlantic Ultraviolet Corp.

**Megos®** Ozone generation system by Capital Controls Co.

**MEK** Methyl ethyl ketone.

**Mekor®** Corrosion inhibitor chemical additive by Ashland Chemical, Drew Industrial.

**Mellafier** Inclined plate clarifier by Industrial Filter & Pump Mfg. Co.

**melt water** Water derived from the melting of ice and snow.

**meltdown** A defect in a nuclear reactor cooling system which results in an overheating of the reactor core and eventual melting of fuel rods.

**melting point** The temperature at which a solid changes to a liquid.

**Mem\*Recon™** Reverse osmosis membrane reconditioning product by King Lee Technologies.

**Membio®** Aerobic biological digester by USFilter/Memcor.

**Membralox®** Ceramic membrane filters by USFilter/Rockford.

**Membrana™** Cartridge filter housing by Osmonics.

**membrane** A thin barrier that permits passage of particles of a certain size or of a particular physical or chemical property.

**membrane bioreactor (MBR)** A modification of the activated sludge wastewater treatment process employing membrane filtration in place of conventional secondary clarifiers.

**membrane contactor** A device that permits mass transfer between a gaseous phase and liquid phase of a material without dispersing one phase into another.

**membrane diffuser** Fine bubble aeration diffuser with perforated flexible plastic membranes.

**membrane filter** (1) A paper-like filter with small pore sizes that is capable of retaining bacteria for use in the laboratory examination of water. (2) A pressure-driven microfiltration or ultrafiltration membrane filter.

**membrane processes** Processes including reverse osmosis, electro dialysis, and ultrafiltration that use membranes to remove dissolved material or fine solids.

**membrane softening** A water softening process that utilizes semi-permeable nanofiltration or reverse osmosis membranes to remove hardness constituents such as calcium and magnesium from water.

**MembraPro®** Ceramic membrane microfiltration system by USFilter Corp.

**Membrastill™** Pharmaceutical water system by USFilter/Rockford.

**Memclean®** Chemical solution used to clean microfiltration membranes and systems by USFilter/Memcor.

**Memcor®** Continuous microfiltration systems by USFilter/Memcor.

**Memexx™** Membrane filtration system by WesTech Engineering Inc.

**Memloy** Microfiltration membrane product by USFilter/Memcor.

**Memory-Flex™** Check valve by Val-Matic Valve & Manufacturing Corp.

**Memstor** Membrane storage agent by King Lee Technologies.

**Memtec** Microfiltration product line by USFilter/Memcor.

**Memtek®** Microfiltration membrane products by USFilter/Industrial Wastewater Systems.

**Memtrex™** Pleated filters by Osmonics, Inc.

**Memtrol** Microfiltration control system by USFilter/Memcor.

**meniscus** The curved upper surface of a column of liquid.

**Mensch™** Reciprocating rake bar screen by Vulcan Industries, Inc.

**MeOH** Common abbreviation for “methanol.”

**MEP** See “multiple extraction procedure (MEP).”

**meq/L** See “milliequivalents per liter.”

**mercaptans** Organic compounds, or thioalcohols (thiols), containing sulfur and noted for their disagreeable odor.

**Merco®** Centrifuge by Alfa Laval Separation, Inc.

**mercury** A heavy metal element that when absorbed or ingested by humans is excreted from the body very slowly and can be lethal in very low concentrations.

**Merlin®** Progressing cavity pump by MGI Pumps, Inc.

**Mer-Made** Filter leaves for vacuum diatomite filters by Mer-Made Filter, Inc.

**Mesa-Line®** Portable submersible pump by Crane Pumps & Systems.

**mesh** The number of openings per lineal inch, measured from the center of 1 wire or bar to a point 1” (25.4 mm) distant.

**mesocosm** A physically confined, self-maintaining, multitrophic experiment for discerning processes involved in the fate and transformation of nutrients into organic matter.

**mesophiles** Bacteria that grow best at temperatures between 25 and 40°C.

**mesophilic digestion** Anaerobic sludge digestion within a mesophilic range of approximately 25 to 40°C.

**mesophyte** A plant that grows under typical or moderate amounts of atmospheric water supply.

**mesosphere** The level of the earth’s atmosphere that exists above the stratosphere.

**mesothelioma** A fatal form of cancer caused by exposure to asbestos.

**mesotrophic lake** A lake between the oligotrophic and eutrophic stages that remains aerobic, although a substantial depletion of oxygen has occurred in the hypolimnion.

**metabolism** The chemical and physical processes of living organisms which include the biological conversion of organic matter to cellular matter and gaseous byproducts.

**metabolites** Any substances produced by biological processes, such as those from pesticides.

**MetaGuard™** Powdered antiscalant and stabilizer for reverse osmosis systems by Professional Water Technologies, Inc.

**metal** In general those elements that easily lose electrons to form positive ions.

**metal finishing wastes** Wastewater from electroplating, galvanizing, and other metal finishing operations that may be characterized by the presence of acids, caustics, and metal contaminants.

**metal salt coagulants** Salts of alum and iron commonly used as water treatment coagulants.

**Metal-Drop™** Flocculant/coagulant by Kem-Tron.

**metalimnion** The middle layer of a thermally stratified lake or reservoir.

**MetalWeave®** Stainless steel fabric tank baffles by Baker Process.

**metastasis** The spreading of disease from one part of the body to another.

**meter** The basic SI unit of length equivalent to approximately 39.37 inches, or the distance traveled by light in a vacuum in 1/299,792,458 seconds. Also called “metre.”

**metering pump** A pump used to provide controlled injection of a chemical additive into a fluid flow.

**metes and bounds** A description of the measurements and boundaries of a tract of land beginning at a given point in the boundary of the tract to be described, then the recitation of the courses (directions) and distances from point to point entirely around the tract.

**Metex®** An anaerobic process for the removal of heavy metals by Lotepro Corp. (Western Hemisphere) and Linde-KCA-Dresden GmbH.

**methane** A colorless, odorless combustible gas that is the principle byproduct of anaerobic decomposition of organic matter in wastewater. Chemical formula is CH<sub>4</sub>.

**methane formers** See “methanogens.”

**methanogens** Group of anaerobic bacteria responsible for conversion of organic acids to methane gas and carbon dioxide. Also known as “methane formers.”

**methanol** A solvent often used as a supplemental carbon source during denitrification. Chemical formula is CH<sub>3</sub>OH.

**methemoglobinemia** Disease occurring primarily in infants who ingest water high in nitrates. Also called “blue baby syndrome.”

**Method 18** An EPA test method which uses gas chromatographic techniques to measure the concentration of volatile organic compounds in a gas stream.



**Method 24** An EPA reference method to determine density, water content, and total volatile content of coatings.

**Method 25** An EPA reference method to determine the VOC concentration in a gas stream.

**method detection limit (MDL)** The constituent concentration that when processed through the complete method produces a sample with a 99% probability that it is different from the blank.

**methoxychlor** Pesticide that causes adverse health effects in domestic water supplies and is toxic to freshwater and marine aquatic life.

**methyl** The monovalent hydrocarbon radical  $\text{CH}_3$ , usually existing only in combination with other atoms.

**methyl orange** A color indicator used in acid and base titrations.

**methyl orange alkalinity** A measure of the total alkalinity of an aqueous solution determined through titration with a methyl orange color indicator.

**methylate** To replace one or more hydrogen atoms in a molecule with a methyl group.

**methylene blue active substance (MBAS)** Anionic surfactants which react with methylene blue to form a chloroform-soluble complex.

**Metito Arabia** Former name of USFilter/Metito.

**metre** See “meter.”

**metric ton** A unit of mass equal to 1000 kilogram or approximately 2204 pounds. Also called “tonne.”

**Metro™** Seawater injection product line by Baker Hughes Process Systems.

**MEVA** Product line of Waterlink Inc.

**MF** See “microfiltration ( $\mu\text{F}$ ).”

**MFS** Minimum functional specification.

**MFT** Membrane filter technique.

**mg** See “milligram (mg).”

**mg/L** See “milligrams per liter.”

**mg/L as  $\text{CaCO}_3$**  See “calcium carbonate equivalent (mg/L as  $\text{CaCO}_3$ ).”

**mgd** Million gallons per day.

**mgid** Million gallons (Imperial) per day.

**mho** Unit of measurement for conductivity equal to the reciprocal of resistivity (ohm).

**MHSA** Mine Health Safety Administration.

**MHT®** Magnesium hydroxide by Dow Chemical Co.

**miasma** Vapor rising from marshes, polluted water, or decaying organic matter which was once mistakenly thought to poison and infect the air causing malaria and other diseases.

**MIB** Abbreviation for the trace organic 2-methylisoborneol which produces an earthy/musty odor in surface waters. Chemical formula is  $\text{C}_{11}\text{H}_{20}\text{O}$ .

**MIC®** Mazzei Injector Corp.

**Micrasieve™** Pressure-fed fine static screen by Andritz-Ruthner, Inc.

**Micro Fine** Ultrafiltration system by USFilter/Memcor.

**Micro/2000®** Residual chlorine, chlorine dioxide, and potassium permanganate analyzer by USFilter/Wallace & Tiernan.

**microbe** An organism observable only through a microscope. Also called “micro-organism.”

**microbial pesticide** A microorganism that is used to control a pest, but of minimum toxicity to man.

**Microbics** Former name of Azur Environmental.

**microbiocide** See “biocide.”

**MicroBiotic™** Carbon biofiltration system by Geoenergy International Corp.

**Microbloc** Carbon bed VOC control system by USFilter/Westates.

**Micro-Carbon®** Filter cartridge with wound carbon batt by USFilter/Filtration & Separation.

**Microcat®** Microbial additive for use in biological wastewater treatment by Bioscience, Inc.

**Microchem™** Tablet chlorinator by Mooers Products, Inc.

**microclimate** The localized climate conditions within an urban area or neighborhood.

**MicroDAF** Dissolved air flotation by the former Princeton Clearwater.

**microelectronic water** See “electronic-grade water.”

**microencapsulation** Isolation of a waste material by mixing it with a material which then cures or converts to a solid, nonleaching barrier.

**Microenfractionator™** Soil mixing technology by H&H Eco Systems, Inc.

**microfauna** Animals not visible to the naked eye.

**MicroFIBR** Skid-mounted biofiltration system by AMETEK Rotron Biofiltration.

**MicroFID™** Portable FID by PerkinElmer Instruments.

**microfiltration (MF)** A low pressure (100-400 kPa, 15-60 psi) membrane filtration process which removes suspended solids and colloids generally larger than 0.1 micron diameter.

**Microfloat®** Dispersed air flotation system by Aeration Industries, Inc.

**microfloc** Destabilized floc particle that permits in-depth penetration of a granular media filter bed to optimize the filter’s solid retention capacity.

**Microfloc®** Water treatment product line of USFilter/Microfloc.

**microfouling** The biological fouling of a water system with microorganisms including algae, fungi, and bacteria.

**Microgap™** Ozonation equipment by Osmonics, Inc.

**microgram (µg)** A unit of mass equal to one-millionth of a gram.

**micrograms per cubic meter (µg/m<sup>3</sup>)** A measure of the concentration of particulate or gaseous matter in air, commonly used in reporting air pollution data.

**micro-irrigation** A water management irrigation technique using a micro-sprinkler or drip irrigation system to minimize water runoff.

**Micro-Klean™** Wastewater treatment equipment product by Alar Engineering Corp.

**MicroMass** Dissolved air flotation unit by Konline-Sanderson Engineering Corp.

**Micro-Matic®** Rotating microscreen by USFilter/Industrial Wastewater Systems.

**MicroMAX®** Physical separation system by Micronair LLC.

**Micromesh Strainer** Microscreen by Lakeside Equipment Corp.

**micrometer (µm)** See “micron (µ).”

**micromho** A unit measure of conductivity equal to one millionth of a mho.

**micron ( $\mu$ )** A unit of length equal to one-millionth of a meter. Also called “micrometer.”

**micron rating** The term applied to a filter medium to indicate the particle size above which all suspended solids will be removed throughout the rated capacity.

**Micronizer™** Fine bubble dissolved air flotation device by the former Microlift Systems, Inc.

**microorganism** An organism observable only through a microscope. Also called “microbe.”

**Micro-Pi®** Pressure fed rotary screen by Andritz-Ruthner, Inc. (Western Hemisphere) and USFilter/Contra-Shear.

**Micro-Polatrol®** Cathodic protection power units by Corpro Waterworks, Inc.

**MicroPore** Aeration mixing systems by Environmental Dynamics Inc.

**MicroPurge®** Low-flow sampling by QED Environmental Systems, Inc.

**microscope** An instrument used for visual magnification of small objects.

**microscreen** A surface filtration device consisting of a rotating drum with a fine mesh screen fixed to its periphery. As water flows through the interior of the drum, solids are retained by the mesh for removal by a high pressure spray wash.

**Microsep®** Ballasted Floc Reactor by USFilter/General Filter.

**Micro-Sieve** Microscreen formerly offered by Passavant.

**microsporidia** Spore-forming protazoan parasites recognized as pathogens of insects, fish, birds, and mammals.

**microstrainer** See “microscreen.”

**Micro-T** Turbidimeter with remote station monitoring by HF Scientific, Inc.

**Microtox®** Acute toxicity test by Azur Environmental.

**Microtuff™** Microporous, vibrating diffuser by Clear-Flo International.

**Microza™** Hollow fiber membrane filtration systems by Pall Corp.

**midge fly** An insect that may infest a water system and whose larvae, known as “blood worms,” feed on algae, protozoans, and decaying vegetation.

**Midi-Rotor** Rotary brush aerator by USFilter/Krüger.

**midnight dumping** The deliberate and illegal disposal of sludge or other waste materials at an unauthorized, nonpermitted location.

**MightyPure™** Ultraviolet water purification system by Atlantic Ultraviolet Corp.

**mil** A unit of measure equal to one-thousandth of an inch.

**MIL** Military Specification.

**milk of lime** A lime slurry formed by mixing water with calcium hydroxide.

**mill** To grind or crush.

**mill scale** An oxide coating formed on steel when heated in connection with hot working or heat treatment.

**Millennium™** Regenerative thermal oxidizer system by Megtec Systems, Inc.

**milliequivalent (me)** One-one thousandth of an equivalent weight.

**milliequivalents per liter (meq/L)** An expression indicating the concentration of a solute which is calculated by dividing the concentration in milligrams per liter by the equivalent weight of the solute.

**milligram (mg)** A unit of mass equal to one-thousandth of a gram.

**milligrams per liter (mg/L)** A common unit of measurement of the concentration of a material in solution.

**milliliter (mL)** A unit of volume equal to one cubic centimeter.

**Milliscreen™** Internally fed rotary fine screen by Andritz-Ruthner, Inc. (Western Hemisphere) and USFilter/Contra-Shear.

**mineral** A naturally occurring inorganic material having a definite chemical composition and structure.

**mineral acidity** Acidity caused by the presence of hydrochloric, sulfuric, nitric, and other inorganic mineral acids.

**mineral acids** Inorganic acids including hydrochloric, nitric, and sulfuric acid.

**mineral water** Water containing a minimum of 250 mg/L of total dissolved solids and which come from a source tapped at one or more boreholes or springs originating from a geologically and physically protected underground source.

**mineralization** The conversion of an organic material to an inorganic form by microbial decomposition.

**Mini Monster®** Low wastewater flow solids reduction unit by JWC Environmental.

**Mini Osec** Electrolytic chlorination system by USFilter/Wallace & Tiernan.

**MiniBUS™** Ultrafiltration membrane cartridge by Cuno Separations Systems Division.

**MiniChamp** Chemical induction unit by USFilter/Stranco.

**MiniDisk™** Cloth media wastewater filter by Aqua-Aerobic Systems, Inc.

**Minigas®** Multi-gas detector by Neotronics of North America.

**Mini-Ject®** Pneumatic ejector lift station by Smith & Loveless, Inc.

**Mini-Magna** Rotor aerator by Lakeside Equipment Corp.

**Minimax** Dewatering pressure filter by Larox Inc.

**Mini-Maxi** Dissolved air flotation unit by Tenco Hydro, Inc.

**Mini-Milli™** Internally fed rotary fine screen by Andritz-Ruthner, Inc. (Western Hemisphere) and USFilter/Contra-Shear.

**Mini-Miser™** Multiple feed dewatering system by Recra Environmental.

**Minipure™** Ultraviolet water purification system by Atlantic Ultraviolet Corp.

**Mini-Ring** Random packing media by USFilter/General Filter.

**Mini-San** Tablet feeder disinfection system by Exceltec International Corp.

**Miniseries™** Packaged desalination plant by Matrix Desalination, Inc.

**minors** Publicly owned treatment works with flows less than 1 million gallons per day.

**Minotaur™** Activated carbon product by Calgon Carbon Corp.

**Miox®** Oxidant product line by Miox Corp.

**miscible** Capable of being mixed.

**MIST** Fine bubble diffuser by Aeromix Systems, Inc.

**mist eliminator** A device used to remove entrained droplets of water from a vapor stream produced during evaporation.

**Mist Pro™** Odor control system by NuTech Environmental Corp.

**MistGard™** Oil mist collector by Monsanto Enviro-Chem Systems, Inc.

**Mist-Master®** Mesh pad mist eliminators by ACS Industries, Inc.

**mitigation** Measures taken to reduce adverse impacts on the environment.

**mitochondria** Subcellular structures that contain genetic material and enzymes which produce ATP to provide energy for cell metabolism.

**Mixaerator** Static mixing aerators by JDV Equipment Corp.

**MixAirTech** MixAir Technologies, Inc.

**Mixco** Batch mixer by Lightnin.

**mixed bed demineralizer** Ion exchange demineralizer containing strong-acid and strong-base resins in a single vessel.

**mixed liquor** The mixture of wastewater and activated sludge undergoing aeration in the aeration basin.

**mixed liquor suspended solids (MLSS)** Suspended solids in the mixture of wastewater and activated sludge undergoing aeration in the aeration basin.

**mixed liquor volatile suspended solids (MLVSS)** The volatile fraction of the mixed liquor suspended solids.

**mixed low-level radioactive waste (MLLW)** Low-level radioactive waste that also contains hazardous constituents.

**mixed media filter** Granular media filter utilizing two or more types of filter media of different sizes and specific gravities, usually silica sand, anthracite and ilmenite, or garnet.

**Mixflo™** Aeration injection and dissolution system by Praxair, Inc.

**mixing zone** Limited area where initial dilution of a discharge takes place, water quality changes may occur, and certain water quality standards may be exceeded.

**Mix-Mate®** Multistage polymer mixing system by Neptune Chemical Pump Co.

**mixotroph** Bacteria that do not grow in either anaerobic or highly oxygenated water.

**ML** See “megaliter (mL).”

**mL** See “milliliter (mL).”

**MLLW** See “mixed low-level radioactive waste (MLLW).”

**MLM™** Heat recovery media for regenerative thermal oxidation systems by Lantec Products, Inc.

**MLSS** See “mixed liquor suspended solids (MLSS).”

**MLTSS** Mixed liquor total suspended solids. See “mixed liquor suspended solids (MLSS).”

**MLVSS** See “mixed liquor volatile suspended solids (MLVSS).”

**mobile source** Any nonstationary source of air pollution such as cars, trucks, motorcycles, buses, airplanes, locomotives.

**MobileFlow®** Mobile water treatment system by Ecolochem, Inc.

**MobileRO** Trailer mounted reverse osmosis system by Ecolochem, Inc.

**Mobius** Fine mesh belt screen by Pro-Ent, Inc.

**modeling** A quantitative or mathematical simulation which attempts to predict or describe the behavior or relationships that result from a physical event.

**MoDo-Chemetics** Former name of Kvaerner Chemetics.

**Mod-U-Flo** Round bottom clarifier by Osmonics, Inc.

**Moduflow** Concrete gravity sand filter by Smith & Loveless, Inc.

**Modulab®** High purity water systems by USFilter Corp.

**Modular Aquarius®** Modular water treatment plant by USFilter/Microfloc.

**Modulozone** Skid-mounted ozone generator by Praxair-Trailigaz Ozone Co.

**Modu-Plex** Wet well pump station by Smith & Loveless, Inc.

**ModuStor™** Bolted steel tank by ModuTank, Inc.

**MOE** Margin of exposure.

**molality** The number of moles of solute per kilogram of solvent.

**molarity** The number of moles of solute per liter of solution.

**mole** (1) The molecular weight of a substance containing an Avogadro's number of atoms or molecules. (2) A massive harborwork, breakwater, or jetty.

**molecular weight** The weight of a molecule that may be calculated as the sum of the atomic weights of its constituent atoms.

**molecular weight cutoff (MWCO)** The smallest compounds that are generally rejected in a membrane filtration process.

**molecule** The smallest division of a compound that still retains or exhibits all the properties of the substance.

**mollusk** A group of invertebrate animals with a soft, unsegmented body protected by a shell.

**Molpure**<sup>®</sup> Hollow fiber filtration membranes by Celgard LLC.

**Molsep**<sup>®</sup> Hollow fiber filtration membranes by Celgard LLC and Daicem Membrane Systems Ltd.

**molten salt reactor** A thermal treatment unit that rapidly heats waste in a heat-conducting fluid bath of carbonate salt.

**Molyver** Reagent chemicals used to determine molybdenum concentration in water by Hach Co.

**MOM** Management, operating, and maintenance.

**monel** A nickel alloy containing approximately 30% copper and having good mechanical and corrosion-resistant properties.

**monitoring well** A well used to obtain samples for analysis or to measure groundwater levels.

**Monkey Screen** Reciprocating rake bar screen by Brackett Geiger.

**Mono**<sup>®</sup> Pump products by Monoflo.

**Monobel**<sup>®</sup> Filter press by Waterlink/Aero-Mod Systems.

**Monoblock** Carbon bed VOC control system by USFilter/Westates.

**Monocluster** Package water treatment plant by Graver Co.

**Monod equation** A mathematical equation that describes the relationship between biomass production and the concentration of growth-limiting substrate.

**Mono-Ferm** Iron and manganese removal gravity filter by Graver Co.

**monofilament** A single synthetic fiber of continuous length used in woven mesh or cloth.

**monofill** A solid waste disposal facility containing only one type or class of waste.

**Monoflo** Progressing cavity pump by MGI Pumps, Inc.

**Monoflo**<sup>®</sup> Screenings grinder by Monoflo.

**Mono-Floc**<sup>®</sup> Gravity sand filter with coagulant feed system by Graver Co.

**Monoflor**<sup>®</sup> Cast-in-place filter underdrain by Infilco Degremont, Inc.

**Monolift**<sup>®</sup> Vertical, progressing cavity groundwater pump by Monoflo.

**monolithic underdrain** A concrete filter underdrain whose piers and floor are poured in place at one time.

**monomedia filter** A granular media filter utilizing a single size and type of filter media.

**monomer** The basic molecule of a synthetic resin or plastic.

**monomictic** Relatively deep lakes and reservoirs which do not freeze over during the winter months and undergo a single stratification and mixing cycle during the year.

**Mono-Pak** Concrete gravity filter by Graver Co.

**Mono-Pilot**<sup>®</sup> Coagulant control center using a pilot filter column by USFilter/Microfloc.

**Monorake** Traveling bridge raking mechanism for rectangular clarifiers by GL&V/Dorr-Oliver, Inc.

**Monoscour**<sup>®</sup> High solids gravity sand filter by Graver Co.

**MonoSparj** Coarse bubble diffuser by Walker Process Equipment.

**Monosphere**<sup>™</sup> Ion exchange resin by Dow Chemical Co.

**Monovalve**<sup>®</sup> **Filter** Gravity sand filter by Graver Co.

**Monozone**<sup>®</sup> Ozone generation system by Capital Controls Co.

**Montreal Protocol** A 1987 international agreement to phase out CFCs and replace them with HFCs. The full agreement name is the “Montreal Protocol on Substances That Deplete the Ozone Layer.”

**moraine** A mass of stone and earth carried by a glacier and deposited on land after a glacier recedes.

**morbidity** Rate of disease incidence.

**mortality rate** The number of deaths per 100,000 people in a population.

**MOS** Margin of safety.

**most probable number (MPN)** Statistical analysis technique based on the number of positive and negative results when testing multiple portions of equal volume.

**mother liquor** The concentrated solution that remains after evaporation or crystallization. See also “bittern.”

**motive steam** High pressure steam used to operate a steam-jet ejector or thermo-compressor.

**MotoDip** Motorized slotted skimmer pipe by Walker Process Equipment.

**mouth feel** A series of sensations such as aftertaste, astringent, burning, chalky, metallic, and flat which are usually easier to taste than to smell but cannot be strictly described as “tastes.”

**moving bed filter** A granular media filter that continuously cleans and recycles filter media while the filter continues to operate.

**Moyno**<sup>®</sup> Pump product line by Moyno Industrial Products.

**MP** Melting point.

**MPA** Microscopic particulate analysis.

**MPN** See “most probable number (MPN).”

**MPRox Process** Organic destruction process for spent caustic wastewaters by MPR Services, Inc.

**MPVT**<sup>™</sup> Multi-purpose vertical turbine pump by Patterson Pump Co.

**SQL** Method quantitation limit. Generally the same as “estimated quantitation limit.”

**MRDL** See “maximum residual disinfectant level (MRDL).”

**MRDLG** Maximum residual disinfectant level goal.

**MRF Press** Belt filter press by Idreco USA, Ltd.

**MRFs** See “materials recovery facilities (MRFs).”

**MRL** Maximum residue limit.

**M-roy** Metering pump products by Milton Roy Co.

**MS Diffuser** Medium bubble diffuser by Enviroquip, Inc.

**MSBR** Modified sequencing batch reactor.

**MSD** Musculoskeletal disorder.

**MSDS** See “Material Safety Data Sheet (MSDS).”

**MSF** See “multistage flash evaporation (MSF).”

**MSF-BR** Multistage flash evaporation, brine recirculation.

**MSF-OT** Multistage flash evaporation, once-through.

**MSL** Mean sea level.

**MSW** Municipal solid waste.

**MSWLF** Municipal solid waste landfill.

**MT<sup>®</sup>** Reverse osmosis membrane cleaners by B.F. Goodrich Co.

**MTBE** Methyl-tertiary-butyl-ether.

**MTBF** Mean time between failures.

**MTD** Maximum tolerated dose.

**MTP** Maximum trihalomethane potential.

**MTS** Wastewater treatment equipment product line of Waterlink Biological Systems.

**MTS<sup>®</sup>** Trailer-mounted mobile treatment system for industrial wastewater treatment applications by Graver Co.

**MTTR** Mean time to repair/replace.

**MTZ** Mass transfer zone.

**MUC** Maximum use concentration.

**muck soils** Earth made from decaying plant materials.

**MUD** Municipal Utility District.

**mud balls** Agglomerations of floc, solids, and filter media in a filter bed which may grow into a larger mass and reduce filtration efficiency.

**mud flat** A muddy, flat low-lying tidal area.

**mud valve** A valve used to drain sediment from the bottom of a sedimentation basin.

**Muffin Monster<sup>®</sup>** Wastewater solids reduction unit by JWC Environmental.

**muffler** A device used to reduce or deaden noise.

**mulch** A protective ground covering of compost, wood chips, sawdust, or other organic matter.

**Multidigestion** Two-stage digestion system formerly offered by Dorr-Oliver, Inc.

**Multicell<sup>®</sup>** Multiple cell gravity filter by USFilter/General Filter.

**Multi-Chem<sup>®</sup>** NOx destruction system by Tri-Mer Corp.

**multiclone** A set of individual cyclone separators arranged in parallel to remove particulate matter from air emissions.

**Multicoil** Indirect sludge drying system by Kvaerner Eureka USA.

**Multicone** Aluminum induction cascade aerator used to strip gases or aerate water supply by Infilco Degremont, Inc.

**Multicrete<sup>®</sup>** Monolithic filter underdrain system by USFilter/General Filter.



**MultiDraw** Circular clarifier with pumped suction sludge removal system using multiple nozzles by Walker Process Equipment.

**Multiflo** Flow distribution nozzle for rotary distributors by Amwell, Inc.

**Multiflo®** Pump column used with jet aeration system by USFilter/Jet Tech.

**MultiFlow** Skid mounted water treatment system by Ecolochem, Inc.

**Multi-Flow** PVC biological filter media formerly offered by B.F. Goodrich Co.

**Multi-Jet™** Submersible self-aspirating aerator by Waterlink Biological Systems.

**Multilogger** Water instrumentation device for measuring multiple parameters by Stevens Water Monitoring Systems.

**Multi-Mag™** Electromagnetic flowmeter by Marsh-McBirney, Inc.

**multimedia filter** Granular media filter utilizing two or more types of filter media of different sizes and specific gravities, usually silica sand, anthracite and ilmenite, or garnet.

**Multi-Pack™** Oil/water coalescers by Mercer International, Inc.

**Multipass®** Sludge dryer by USFilter/Envirex.

**Multiple Barrier Filtration** Filtration system by USFilter/General Filter.

**multiple effect distillation (MED)** A thin film evaporation process where the vapor formed in a chamber, or effect, condenses in the next, providing a heat source for further evaporation.

**multiple extraction procedure (MEP)** Procedure used to simulate the leaching a waste will undergo from repetitive precipitation of acid rain on a material.

**multiple hearth furnace** A furnace or incinerator consisting of numerous hearths which is used to incinerate organic sludges or recalcinate lime.

**multiple stage flash evaporation** See “multistage flash evaporation (MSF).”

**Multi-Point** Level controller by Drexelbrook Engineering Co.

**Multiport Valve™** Valve used to manipulate filter backwashing and rinsing by USFilter/Rockford.

**MultiRanger** Level and volume measurement device by Milltronics, Inc.

**multistage flash evaporation (MSF)** A desalination process where a stream of brine flows through the bottom of chambers, or stages, each operating at a successively lower pressure, and a proportion of it flashes into steam and is then condensed.

**Multi-Tech®** Chemical feed, contact flocculation, and filtration process by USFilter/General Filter.

**Multi-Turi®** Wet scrubber with high energy venturi by CMI-Schneible Co.

**Multiwash®** Sand filtration process using combined air/water backwash by USFilter/General Filter.

**Multi-Wash®** Wet scrubber by CMI-Schneible Co.

**Multi-Zone** Anaerobic digestion system by USFilter/Zimpro.

**Muncher®** Sewage grinder products by Monoflo.

**Munchpump®** Packaged pump/grinder assembly by Monoflo.

**municipal waste** The combined solid and liquid waste from residential, commercial, and industrial sources.

**municipal wastewater treatment plant** Treatment works designed to treat municipal wastewater.

**Muniflo** Positive displacement rotary lobe sludge pump by Envirotech Pumpsystems.

**Munox** Bacterial inoculant for wastewater treatment, soil, and groundwater remediation by Osprey Biotechnics.

**Münster** Trash rake cleaning mechanism by Landustrie Sneek BV.

**muntz metal** A brass containing approximately 60% copper and 40% zinc.

**muritic acid** Chemical formula is HCl, also known as “hydrochloric acid.”

**MUS** Minimum ultimate strength.

**Mushroom Ventilator** Cast iron air diffuser by the former Knowles Mushroom Ventilator Co.

**mutagen** A material that causes genetic change when interacting with a living organism.

**mutagenic** A chemical or agent with properties that cause mutation or disfiguring.

**Mutrator**<sup>®</sup> Packaged pumping/grinding station by Monoflo.

**MVC** Mechanical vapor compression. See “vapor compression evaporation (VC).”

**MVR** Mechanical vapor recompression. See “vapor compression evaporation (VC).”

**MW** Megawatt.

**MWCO** See “molecular weight cutoff (MWCO).”

**Mx**<sup>®</sup> Magmeter by McCrometer, Inc.

**Mycelx**<sup>®</sup> Chemical coating with an affinity for organic compounds by Mother Environmental Systems, Inc.

**mycotoxin** A toxin produced naturally by molds or fungus.

**Mystaire**<sup>®</sup> Air scrubber systems by Misonix, Inc.

## N

**NAAQS** See “National Ambient Air Quality Standards (NAAQS).”

**NACE** National Association of Corrosion Engineers.

**Nadir**<sup>®</sup> Cross flow filtration membranes by Celgard LLC.

**NAE** National Academy of Engineering.

**NAFCO**<sup>®</sup> Fibrous precoat filter aid by Liquid-Solids Separation Corp.

**NaHMP** See “sodium hexametaphosphate.”

**Nalclear**<sup>®</sup> Anionic/nonionic polymer for sedimentation and sludge conditioning by Nalco Chemical Co.

**Nalmet**<sup>®</sup> Solution polymer for reducing soluble metal concentrations to low levels by Nalco Chemical Co.

**nanofiltration (NF)** A specialty membrane filtration process which rejects solutes larger than approximately 1 nanometer (10 angstroms) in size.

**nanometer** A unit of length equal to one billionth ( $10^{-9}$ ) of a meter.

**NAPAP** National Acid Precipitation Assessment Program.

**NAPC** National Air Pollution Control Association.

**NAPL** See “nonaqueous phase liquid (NAPL).”

**nappe** (1) A sheet of water flowing over a weir or dam. (2) An arch-shaped sheet of rock forced over underlying rocks by internal stresses.

**naphthalene** A synthetic organic chemical used as a moth repellent and fungicide. Chemical formula is  $C_{10}H_8$ .

**Nara** Paddle dryer/processor by Komline-Sanderson Engineering Corp.

**NAS** National Academy of Sciences.

**Nasty Gas™** Regenerative blowers to move noxious or other exotic gases by AMETEK Rotron Biofiltration.

**natality** Birthrate.

**natality rate** The number of births per thousand in a specific population.

**national ambient air quality standards (NAAQS)** U.S. standards established under the Clean Air Act to set limits on criteria pollutant levels in ambient (outdoor) air.

**National Contingency Plan (NCP)** U.S. federal regulations promulgated to implement CERCLA and CWA.

**National Emission Standards for Hazardous Air Pollutants (NESHAP)** U.S. standards established under CAA to set limits on pollutants which may pose an immediate hazard to human health.

**National Environmental Policy Act (NEPA)** A 1969 U.S. public law declaring a national policy that encourages productive and enjoyable harmony between people and their environment to enrich their understanding of ecological systems and natural resources.

**National Hydro** Former equipment manufacturer acquired by Amwell, Inc.

**National Oil and Hazardous Substances Contingency Plan (NOHSCP)** The federal regulation that guides determination of the sites to be corrected under both the Superfund program and the program to prevent or control spills into surface waters or elsewhere.

**National Pollutant Discharge Elimination System (NPDES)** A U.S. program to issue, monitor, and enforce pretreatment requirements and discharge permits under the Clean Water Act.

**National Priorities List (NPL)** A U.S. federal list of hazardous waste sites addressed by CERCLA.

**National Water Quality Standards (NWQS)** These set minimum requirements for water quality and require states to set standards to achieve CWA's water quality goals.

**natural attenuation** Naturally occurring processes in the environment that reduce the mass, toxicity, mobility, volume, or concentration of contaminants in soils or groundwater.

**natural draft cooling tower** A cooling tower in which the air flow through the tower occurs naturally, rather than mechanically, as a result of tower design.

**natural gas** A naturally occurring mixture of hydrocarbon gases found in geologic formations beneath the earth's surface whose principal constituent is methane.

**natural organic matter (NOM)** Term used to describe the organic matter present in natural waters.

**natural resource** An area, material, or organism useful to man.

**Nautilus**<sup>®</sup> Traveling bridge siphon sludge collection system by USFilter/Microfloc.  
**navigable waters** Traditionally, waters sufficiently deep and wide for navigation by all or specified vessels and which are protected by certain provisions of the Clean Water Act.

**NAWQA** National Water Quality Assessment.

**NBOD** See “nitrogenous oxygen demand (NOD).”

**NBS** National Bureau of Standards.

**NCASI** National Council of the Paper Industry for Air and Stream Improvement.

**NCCLS** National Committee for Clinical Laboratory Standards.

**NCG** See “noncondensable gas (NCG).”

**NCH** See “noncarbonate hardness (NCH).”

**NCP** See “National Contingency Plan (NCP).”

**NCS** Northwest Cascade, Inc.

**NCWS** See “noncommunity water system.”

**ND** None (not) detected.

**NDO** Natural draft opening.

**NDP** See “net driving pressure (NDP).”

**NDT** Nondestructive testing.

**NDWC** National Drinking Water Clearinghouse.

**neat solution** Full strength, undiluted solution.

**NEC** National Electrical Code.

**needle valve** A valve that controls flow by means of a tapered needle which extends through a circular outlet.

**NEETF** National Environmental Education and Training Foundation.

**negative head** Filter operating condition that occurs when the pressure in the filter bed is below atmospheric pressure during a filter cycle.

**negative pressure** A gauge pressure less than the atmospheric pressure.

**NELAP** National Environmental Laboratory Accreditation Program.

**NEMA** National Electrical Manufacturers Association.

**nematocide** A chemical agent which is destructive to nematodes.

**nematode** A long, unsegmented and often parasitic worm.

**Nemo**<sup>®</sup> Progressive cavity pump and macerator product line by Netzsch, Inc.

**neoprene** A synthetic elastomer that is chemically, physically, and structurally similar to natural rubber.

**Neosepta**<sup>®</sup> Electrodialysis membrane stack supplied by Graver Co.

**Neozone**<sup>™</sup> Ozone generator by North East Environmental Products, Inc.

**NEPA** See “National Environmental Policy Act (NEPA).”

**nephelometer** See “turbidimeter.”

**nephelometric turbidity unit (NTU)** Unit of measure used in the measurement of turbidity by instrumentation.

**Neptune Microfloc** Former name of Microfloc Products group of USFilter/Microfloc.

**NESHAP** See “National Emission Standards for Hazardous Air Pollutants (NESHAP).”

**Nessler tubes** Color comparison tubes used in making colorimetric measurements.

**net driving pressure (NDP)** The net feed pressure of a reverse osmosis system plus the osmotic pressure of the permeate, minus the permeate line pressure and osmotic pressure of the feedwater.

**net head** The head available for production of energy in a hydroelectric plant after deduction of all frictional losses.

**net positive suction head (NPSH)** The difference between the total pressure head and the vapor pressure of the liquid being pumped.

**NETA** National Environmental Training Association.

**Net-Waste** Screw press by Olds Filtration Engineering.

**Neutral Process™** Heavy metals treatment system by Geo-Chem Technologies, Inc.

**Neutralite** Filter media used to neutralize acidic waters by USFilter/Warren.

**neutralization** The chemical process that produces a solution that is neither acidic nor alkaline.

**Neutralizer Plus™** Media for pH adjustment by Matt-Son, Inc.

**Neva-Clog®** Filter media of perforated metallic sheets by Liquid-Solids Separation Corp.

**New Source Performance Standards (NSPS)** Standards established under the Clean Air Act to impose federal technology-based control requirements on emissions from new stationary sources of pollution.

**new water** Water from any discrete source such as a river, creek, lake, or well which is deliberately brought into a plant site.

**Newtonian flow** The flow of a fluid in which the viscosity is independent of the shear rate.

**NF** See “nanofiltration (NF).”

**NFPA** National Fire Protection Association.

**NFR** See “nonfilterable residue (NFR).”

**NFRAP** No further remedial action planned.

**ng/L** Nanograms per liter.

**Nibbler™** Wastewater pretreatment system by Northwest Cascade, Inc.

**Nichols** Former furnace manufacturer acquired by Hankin Environmental Systems, Inc.

**night soil** Human fecal wastes spread on fields as fertilizer.

**NIH** National Institute of Health.

**NIMBY** “Not in my backyard.” A common expression that indicates a preference for waste disposal or treatment to occur at some distant location.

**NIOSH** National Institute for Occupational Safety and Health.

**Niro** Decanter product line by Centrico, Inc.

**Nirosta®** Stainless steel product by Krupp Thyssen Nirosta GmbH.

**NIST** National Institute of Standards and Technology.

**Nitox®** Activated carbon adsorbers by TIGG Corp.

**Nitra-Select™** Selective nitrate removal media by Matt-Son, Inc.

**nitrate** A stable, oxidized form of nitrogen having the formula  $\text{NO}_3^-$ .

**nitrate formers** See “*Nitrobacter*.”

**Nitraver** Reagent chemicals used to determine nitrite concentration of solutions by Hach Company.

**Nitrazyme™** Nitrate solution for controlling wastewater odors by Vulcan Performance Chemicals.

**nitric acid** A strong mineral acid having the chemical formula  $\text{HNO}_3$ .

**nitric oxide (NO)** A gas formed by combustion under high temperature and high pressure in an internal combustion engine, which changes into nitrogen dioxide in the ambient air and contributes to photochemical smog.

**nitrification** Biological process in which ammonia is converted first to nitrite and then to nitrate.

**nitrite** An unstable, easily oxidized form of nitrogen with the chemical formula  $\text{NO}_2^-$ .

**nitrite formers** See “*Nitrosomonas*.”

**Nitrobacter** Nitrifying bacteria that convert nitrites to nitrates, also called “nitrate formers.”

**nitrogen** A colorless, odorless, gaseous element that makes up 78% of the earth’s atmosphere and occurs as a constituent of all living tissues in combined form. Chemical formula is N.

**nitrogen cycle** A graphical presentation of nitrogen’s natural cycle from living animal matter through dead organic matter and back to living matter.

**nitrogen dioxide** A reddish brown gas, one of the primary air pollutants, that usually results from a combustion process and which causes respiratory irritation and illness in relatively low concentrations. Chemical formula is  $\text{NO}_2$ .

**nitrogen fixation** The conversion of atmospheric nitrogen into nitrogen compounds through biological activity.

**nitrogen, nitrate** See “nitrate.”

**nitrogen, nitrite** See “nitrite.”

**nitrogen oxides (NOx)** Compounds formed and released primarily by the burning of fossil fuels.

**nitrogenous biochemical oxygen demand (NBOD)** The portion of biochemical oxygen demand where oxygen consumption is due to the oxidation of nitrogenous material, measured after the carbonaceous oxygen demand has been satisfied. Also called “second-stage biochemical oxygen demand.”

**nitrogenous BOD** See “nitrogenous oxygen demand.”

**nitrogenous oxygen demand (NOD)** That portion of the oxygen demand associated with the oxidation of nitrogenous material, usually measured after the carbonaceous oxygen demand has been satisfied.

**nitrophenols** Synthetic organopesticides containing carbon, hydrogen, nitrogen, and oxygen.

**Nitroseed** Nitrifying toxicity screening test by Polybac Corp.

**Nitrosomonas** Nitrifying bacteria that convert ammonia to nitrites under aerobic conditions and derive their energy from the oxidation. Also called “nitrite formers.”

**Nitrox™** Nutrient removal process by United Industries, Inc.

**NMFS** National Marine Fisheries Service.

**NMO** Nonmethane organic compound.

**NMR** See “nuclear magnetic resonance (NMR).”

**NNI** See “noise and number index (NNI).”

**no detectable emissions** An atmospheric discharge with a concentration less than 500 parts per million by volume as measured by an appropriate detection instrument.

**no effect level** See “no observed adverse effect level (NOAEL).”

**no observed adverse effect level (NOAEL)** The maximum dose of a substance which produces no observed adverse effects.

**NOAA** National Oceanic and Atmospheric Administration.

**NOAEL** See “no observed adverse effect level (NOAEL).”

***Nocardia*** Bacteria that can accumulate to create a nuisance foam in aeration basins and secondary clarifiers.

***No-Cling*** Traveling water screen media insert by Norair Engineering Corp.

**NOD** See “nitrogenous oxygen demand (NOD).”

**nodulizing kiln** See “calciner.”

**NOEC** No observed effect concentration.

**NOEL** See “no observed adverse effect level (NOAEL).”

***Nogcoflot*** Flotation treatment system by Noggerath GmbH.

**NOHSCP** See “National Oil and Hazardous Substances Contingency Plan (NOHSCP).”

**noise** Any unwanted sound, independent of volume.

**noise and number index (NNI)** An index for assessing air traffic noise based on the average perceived decibel level of air traffic and the number of aircraft heard.

**noise-induced hearing loss** A hearing loss, or permanent threshold shift, resulting from noise exposure rather than the normal loss attributed to age.

**NOM** See “natural organic matter (NOM).”

**nonaqueous phase liquid (NAPL)** A liquid mixed with water but having distinct boundaries and properties different from water. In an oil/water mixture, oil is the nonaqueous phase liquid.

**noncarbonate hardness (NCH)** The hardness in water caused by chlorides, sulfates, and nitrates of calcium and magnesium.

**noncombustible refuse** Solid wastes that will not burn in a conventional incinerator.

**noncommunity water system (NCWS)** A public water system that serves a non-resident population such as a campground, school, or factory.

**noncondensable gas (NCG)** Gaseous material not liquefied when associated water vapor is condensed in the same environment.

**noncontact cooling water system** A once-through cooling water system which does not come into contact with hydrocarbons or other wastewater and is not recirculated through a cooling tower.

**nonfilterable residue (NFR)** See “suspended solids.”

**nonionic polymer** A polyelectrolyte with no net electrical charge.

**nonmetal** Elements that hold electrons firmly and tend to gain electrons to form negative ions.

**nonpoint source (NPS)** A source, other than a point source, associated with widespread activities such as agriculture, atmospheric deposition, erosion, or runoff that discharges pollutants into the air or water.

**nonpotable reuse** The beneficial use of reclaimed water other than potable water supply augmentation.

**nonpurgeable organic carbon (NPOC)** The fraction of total organic carbon removed after purging a sample with an inert gas.

**nonputrescible** Material that cannot be decomposed by biological methods.

**nonrenewable resource** A naturally occurring finite resource that cannot be renewed once it has been used.

**nonsettleable solids** Suspended solids that remain in suspension, usually for more than one hour.

**Nopol**<sup>®</sup> Disc diffuser system by WesTech Engineering Inc. and Nopon Oy.

**Nopon**<sup>®</sup> Aeration system offered by WesTech Engineering Inc. and Nopon Oy.

**Noramers**<sup>®</sup> Water treatment polymers by Rohm & Haas Co.

**Nordic Water**<sup>™</sup> Product of Waterlink Separations, Inc.

**Norit Roz** Steam-activated, peat-based carbon product by Norit Americas Inc.

**NORM** Naturally occurring radioactive materials.

**normal solution** A solution that contains one equivalent weight of a substance per liter of solution.

**normality** A solution's relation to the "normal solution."

**Nor-Pac**<sup>®</sup> Tower packing by NSW Corp.

**Nortex** Side and boot seals for traveling water screens by Norair Engineering Corp.

**North**<sup>™</sup> Internally fed rotating drum screen products by Voith Sulzer.

**North Filter** Rotary fine screen by Voith Sulzer.

**North-American Hercules**<sup>®</sup> Pressure leaf filter product line by Liquid-Solids Separation Corp.

**Norton** Biological reactor packing media by Sanitaire Corp.

**Norwalk-type virus** A waterborne pathogen that is the most common viral cause of gastroenteritis in adults.

**Notim**<sup>™</sup> Organic iron and tannin removal media by Matt-Son, Inc.

**Novex TLS** Inclined plate separator module by Gyulavari Consulting Kft.

**Novus**<sup>®</sup> Emulsion polymers by BetzDearborn, Inc.

**No-Wear**<sup>™</sup> Traveling bridge filter backwash shoe by USFilter/Davco.

**No-Well** Pier-mounted traveling water screen design that does not require channel type intake by USFilter/Rex & Link-Belt Products.

**NOx** See "nitrogen oxides (NOx)."

**Noxidizer**<sup>™</sup> Incineration system by John Zink Co.

**Noxon**<sup>®</sup> Decanter centrifuge product line by Waterlink Inc.

**NOxOut** Nitrogen oxide reduction system by Nalco Chemical Co.

**NOxOUT**<sup>®</sup> Noncatalytic reduction process to reduce nitrogen oxide emission levels by Wheelabrator Air Pollution Control, Inc.

**Nozzle Air** Dissolved air flotation aeration system by Baker Hughes Process Systems.

**NPCA** National Precast Concrete Association.

**NPDES** See "National Pollutant Discharge Elimination System (NPDES)."

**NPDR** National primary drinking water regulation.

**NPE** Nonyl phenol ethoxylates.

**NPHAP** National Pesticide Hazard Assessment Program.



**NPL** See “National Priorities List (NRL).”

**NPOC** See “nonpurgeable organic carbon (NPOC).”

**NPS** See “nonpoint source (NPS).”

**NPSH** See “net positive suction head (NPSH).”

**NPSHA** Net positive suction head available.

**NPSHR** Net positive suction head required.

**NPT** National pipe thread.

**NRA** National Rivers Authority.

**NREP** National Registry of Environmental Professionals.

**NRWA** National Rural Water Association.

**NSDWRs** National Secondary Drinking Water Regulations.

**NSF®** NSF International.

**NSPS** See “New Source Performance Standards (NSPS).”

**NSSC** Neutral sulfite semichemical pulping process.

**NTA** Nitriilotriacetic acid. An organic chelating agent.

**NTIS** National Technical Information Service.

**NTNCWS** Nontransient noncommunity water system.

**NTP** National Toxicology Program.

**NTR** National Toxics Rule.

**N-Trak** Test kit to determine nitrogen content of water by Hach Co.

**NTU** See “nephelometric turbidity unit (NTU).”

**nuclear magnetic resonance (NMR)** An analytical technique used to detect and distinguish between nuclear particles in a sample using magnetic fields.

**nuclear winter** Prediction by some scientists that smoke and debris rising from massive fires of a nuclear war could block sunlight for weeks or months, cooling the earth’s surface and producing climate changes that could, for example, negatively affect world agriculture.

**Nuclepore®** Membrane cartridge filter by Corning, Inc.

**nuclide** A species of atom characterized by the number of protons, neutrons, and energy in the nucleus.

**NUG** Nonutility generator.

**nuisance mask** See “dust mask.”

**Nu-Notch Mushroom** Cast iron air diffuser by the former Knowles Mushroom Ventilator Co.

**Nupac®** Random packing media by Lantec Products, Inc.

**NuTralite®** Odor control product for neutralizing disulfide and other odors by NuTech Environmental Corp.

**Nu-Treat** Flocculator/clarifier by USFilter/Envirex.

**nutrient** Any substance that is assimilated by organisms to promote or facilitate their growth.

**Nutrigest®** Clarifier by Smith & Loveless, Inc.

**nutshell filter** A filtration device that uses ground walnut or pecan shells as granular filter media to remove hydrocarbons and other suspended solids from water.

**NVCU™** Vapor control unit by NAO Inc.

**N-Viro** Pasteurization and chemical fixation process to disinfect and stabilize sludge by N-Viro International Corp.

- NVOC** Nonvolatile organic carbon.
- NWPA** Nuclear Waste Policy Act of 1982.
- NWQS** See “National Water Quality Standards (NWQS).”
- NWSIA** National Water Supply Improvement Association. Former name of “American Desalting Association.”
- nylon** Plastic compound that offers excellent load-bearing capability, low frictional properties, and good chemical resistance.

## O

- O&M** Operation and maintenance.
- O/W** Oil-in-water emulsion.
- O2 Minimizer®** Process controller used to control oxygenation of mixed liquor by Schreiber Corp.
- OASES®** Oxygen-activated sludge wastewater process by USFilter/Krüger.
- oasis** A fertile or green vegetated area in a desert or wasteland that is supplied with water.
- OB/OD** Open pit burning/open detonation.
- obligate aerobes** Bacteria that can survive only in the presence of dissolved oxygen.
- obligate anaerobes** Bacteria that can survive only in the absence of dissolved oxygen.
- obligate pathogen** A pathogen that is unable to live outside a living host.
- OBS®** Turbidity sensors by D&A Instrument Co.
- OCA 19™** Odor neutralizer by Hinsilblon Laboratories.
- OCC** Old corrugated containers.
- occlusion** An absorption process where one solid material adheres to another, sometimes resulting in coprecipitation.
- Occupational Safety and Health Administration (OSHA)** A U.S. agency responsible for overseeing workplace health and safety.
- ocean** The volume of salt water that covers approximately 71% of the earth’s surface and is divided into five principal geographic regions: the Antarctic, Arctic, Atlantic, Indian, and Pacific.
- ocean disposal** The discharge or disposal of wastes or sludges in ocean water.
- ocean dumping** Disposal of wastes in the ocean or seas.
- Ocean Dumping Act (ODA)** Authorizes regulation of intentional ocean disposal of materials, as well as related research and the establishment of marine sanctuaries.
- Ocean Dumping Ban Act** A U.S. law making it unlawful to discharge sewage sludge into the Ocean after 1991.
- ocean incineration** The burning of wastes on ocean-going vessels in waters remote from land.
- ocean thermal energy conversion (OTEC)** Electrical generation process which relies on the temperature differential between the upper and lower layers of the ocean to vaporize a fluid and power a turbine generator.

**OCPSF** Organic chemicals, plastics, and synthetic fibers.

**OD** Outside diameter.

**ODA** See “Ocean Dumping Act (ODA).”

**Odin** Packaged water treatment plant by USFilter/Davis Process.

**Odophos®** Hydrogen sulfide and phosphorus removal product by USFilter/Davis Process.

**Odor Buster®** Aeration system used to reduce odors at pump stations and plant headworks by United Industries, Inc.

**odor threshold** See “threshold odor number (TON).”

**odor unit** See “threshold odor number (TON).”

**OdorGard™** Enhanced packed tower scrubbing process by Monsanto Enviro-Chem Systems, Inc.

**OdorLok™** Hydrogen sulfide corrosion and odor control system by Eaglebrook, Inc.

**OdorMaster™** Electrolytic gas scrubber type odor control system by Pepcon Systems, Inc.

**Odor-Miser** Vapor phase, activated carbon odor absorbers by Westport Environmental Systems.

**Odor-Ox** Multistage dry chemical air scrubber by Purafil, Inc.

**ODP** See “open drip proof (ODP).”

**ODS** Ozone depleting substances.

**OEM** Original equipment manufacturer.

**offal** Trimmings and viscera of butchered animals.

**off-gas** The gaseous emissions from a process or equipment.

**offset** The requirement for a proposed air pollutant generator to reduce emissions or obtain emission reductions from other facilities to compensate for new emissions.

**off-site facility** A hazardous waste treatment, storage, or disposal facility located away from the generating site.

**off spec water (OSP)** Product water that does not meet purity specifications.

**OFR** See “overflow rate (OFR).”

**OGWDW** The U.S. Office of Groundwater and Drinking Water.

**OHL** Overhung load.

**ohm** Unit of electrical resistance where a potential difference of one volt produces a current of one ampere.

**Ohmicron** Immunoassay product line by Strategic Diagnostics, Inc.

**oil** (1) Any of various greasy, combustible substances obtained from animal, vegetable, and mineral sources. (2) Any of various liquids extracted from petroleum. (3) A naturally occurring hydrocarbon in liquid form.

**oil fingerprinting** A method of identifying sources of oil, allowing spills to be traced to their source.

**Oil Grabber®** Oil skimming system by Abanaki Corp.

**Oil Pollution Act (OPA)** A 1990 U.S. federal law that places liability on tank owners or operators for removal costs and damages if oil or other hazardous materials are spilled or discharged.

**oil skimmer** A device used to remove oil from a water’s surface.

**oil spill** An unintentional discharge of oil into the environment, especially into a waterbody.

**OilMaster** Oil/water separator by National Fluid Separators, Inc.

**Oil-Minder** Submersible pump unit by Stancor Pump, Inc.

**oils and grease** Common term used to include fats, oils, waxes, and related constituents found in wastewater.

**Oilspin II** Hydrocyclone by Axsia Serck Baker, Inc.

**oily wastewater** An oil-in-water emulsion in which oil is dispersed in the water phase.

**OKI™** Submerged aerator mixer by WesTech Engineering Inc. and Nopon Oy.

**old growth forest** A forest with a large percentage of old trees which have never been cut or have not been cut for many years.

**Oleofilter™** Filter for removal of hydrocarbons from water by Aprotex, Inc.

**oleophilic** A characteristic describing a strong affinity for oils.

**olfactometer** Device used to measure odors.

**oligohaline** A term describing water with a salinity of 0.5 to 5‰.

**oligotroph** Bacteria that grow in a medium containing <1.0 mg/L organic carbon.

**oligotrophic lake** A deep lake deficient in organic materials whose waters contain a high degree of dissolved oxygen and low BOD.

**OM&M** Operation, maintenance, and management.

**Omega** Horizontal rotor aerator by Purestream, Inc.

**Omega®** Lime slaker and feeder package by PennProcess Technologies, Inc.

**Omnichlor** Sodium hypochlorite generator for marine applications by Exceltec International Corp.

**Omniflo®** Sequencing batch reactor wastewater treatment system by USFilter/Jet Tech.

**Omnipac®** Sequencing batch reactor wastewater treatment package plant by USFilter/Jet Tech.

**Omnipure** Marine sewage treatment plant product line by Exceltec International Corp.

**oncogenic** A chemical or agent with tumor-causing properties.

**one-hundred-year flood plain** Land adjoining inland and coastal waters which, on the average, is likely to flood once every 100 years.

**Onguard®** Instrumentation and control products by Ashland Chemical, Drew Industrial.

**ooocyst** An outer shell that protects an organism in the environment. Pronounced "oh-oh-cist."

**OPA** See "Oil Pollution Act (OPA)."

**opacity** The degree to which emissions reduce the transmission of a beam of light, expressed as a percent of the light which fails to penetrate a plume of smoke.

**open burning** The combustion of solid waste without containment of combustion reaction in an enclosed device, control of the emission of the combustion products, or controlling combustion air to maintain temperature for efficient burning.

**open channel** A natural or artificial channel in which fluid flows with a free surface open to the atmosphere.

**open cycle cooling system** A cooling water system where cooling water is discharged to a receiving body of water without being recycled.

**open drip proof (ODP)** Designation for electrical motor enclosure in which the ventilating openings are so constructed that successful operation is not interfered with when drops of liquid or solid particles strike or enter the enclosure at any angle from 0° to 15° downward from vertical.

**open dump** A land disposal site where solids are disposed of in a manner that does not protect the environment and is susceptible to open burning and exposure to the elements, insects, and scavengers.

**OPIM** See “other potentially infectious material (OPIM).”

**opportunistic pathogen** A microbe that can cause disease in ill, very young, or elderly persons, but usually not in healthy individuals.

**OptiClean™** Powdered reverse osmosis membrane cleaners by Professional Water Technologies, Inc.

**Opti-Core** PVC biological filter media formerly offered by B.F. Goodrich Co.

**Optimem™** Reverse osmosis product formerly offered by USFilter.

**Optimer®** Cationic polymer for sedimentation and sludge conditioning by Nalco Chemical Co.

**Optimum** Direct filtration water treatment plant by BCA Industrial Controls.

**oral toxicity** Ability of a pesticide to cause adverse effects when ingested by mouth.

**Orbal™** Oxidation ditch wastewater treatment system by USFilter/Envirex.

**ORC®** Oxygen release compound to enhance natural attenuation by Regenesis.

**ORE** Orbital rod evaporation.

**Orec™** Ozone-generating systems by Osmonics, Inc.

**Organagro®** Agricultural compost by Bedminster Bioconversion Corp.

**organic** Relating to, or derived from, a living thing. A description of a substance that contains carbon atoms linked together by carbon-carbon bonds.

**organic loading** The amount of organic matter applied to a treatment process.

**organic matter** Substances containing carbon compounds, usually of animal or vegetable origin.

**organic nitrogen** Nitrogen bound to carbon-containing compounds.

**organic phosphorus** Phosphorus that is bound to carbon-containing compounds.

**organoclay** Chemically modified bentonite clay used as an ion exchange media or absorbent.

**OrganoGuard™** Organic fouling control additive for reverse osmosis systems by Professional Water Technologies, Inc.

**organophosphates** Commonly used phosphorous-based organic pesticides which are relatively nonpersistent in the environment.

**organotins** Chemical compounds used in anti-foulant paints to protect the hulls of boats and ships, buoys, and pilings from marine organisms such as barnacles.

**Ori-Cast** Cast elastomer material used in nonmetallic rectangular clarifier products by Oritex Corp.

**orifice plate** (1) Flow measurement device that indicates flow as a function of differential pressure across a flow-restricting orifice. (2) Flow-limiting device.

**Ori-Plastic** Plastic material used in nonmetallic rectangular clarifier products by Oritex Corp.

**ORM** See “other regulated material (ORM).”

**ORNL** Oak Ridge National Laboratory.

**ORP** See “oxidation-reduction potential (ORP).”

**OSEC®** Electrolytic chlorination system by USFilter/Wallace & Tiernan.

**OSHA** See “Occupational Safety and Health Administration (OSHA).”

**Osmo®** Water purification systems by Osmonics, Inc.

**osmoconformers** Organisms that rely on osmotic pressures to maintain internal ionic balance.

**osmosis** Movement of water from a dilute solution to a more concentrated solution through a permeable membrane separating the two solutions.

**Osmostill** Distillation unit by Osmonics, Inc.

**osmotic pressure** Excess pressure that must be applied to a concentrated solution to produce equilibrium and prevent the movement of a more dilute solution through a semipermeable membrane into the more concentrated solution.

**Osmotik®** Reverse osmosis membrane elements by Osmosis Technology, Inc.

**OSP** See “Off spec water (OSP).”

**OST** Office of Science and Technology. A U.S. EPA office.

**OSW** Office of Saline Water.

**OTA® Aerator** Rotor aerator by Scoti-Zahner, Inc.

**OTC** Odor threshold concentration. See “threshold odor number (TON).”

**OTE** Orbital tube evaporation.

**OTEC** See “ocean thermal energy conversion (OTEC).”

**other potentially infectious material (OPIM)** Body fluids or unfixed tissues and organs visibly contaminated with blood, other body fluids, HIV, or HBV.

**other regulated material (ORM)** The U.S. Department of Transportation’s hazard classification of a particular hazardous material to label it for transport.

**OUR** Oxygen uptake rate.

**outfall** The location where a storm or sanitary sewer or effluent is discharged into a receiving water body.

**outhouse** See “privy.”

**outsourcing** The use of an outside vendor to provide operating, maintenance, or other services for a facility.

**ova** Plural of “ovum.”

**overburden** The soil and rock overlying a mineral deposit that must be removed prior to the start of strip mining.

**overdraft** The pumping of water from a groundwater basin or aquifer in excess of the supply flowing into the basin.

**overflow rate (OFR)** An expression used to indicate the upward water velocity in a sedimentation tank expressed as flow per day per unit of basin surface area. Also called “surface loading rate.”

**overflow weir** A weir over which excess water or wastewater is allowed to flow.

**overland flow** A land application technique that cleanses wastewater by allowing it to flow over a sloped surface where contaminants are absorbed and the water is collected at the bottom of the slope for reuse.

**ovum** A mature egg ready to undergo fertilization. The singular form is “ova.”

**Owamat<sup>®</sup>** Oil/water separator by BEKO Condensate Systems Corp.

**oxbow lake** A lake that forms in the abandoned channel or a cutoff meander on a river’s floodplain.

**oxic** A biological environment that contains molecular oxygen.

**Oxidair<sup>™</sup>** Thermal oxidizer for soil remediation and off-gas treatment by EPG Companies, Inc.

**oxidant** A chemical substance, such as chlorine or ozone, capable of promoting oxidation.

**oxidation** (1) A chemical reaction in which an element or ion loses electrons.  
(2) The biological or chemical conversion of organic matter into simpler, more stable forms.

**oxidation ditch** An extended aeration waste treatment process that occurs in an oval-shaped channel or ditch (also called a “race track”) with aeration provided by a mechanical brush-aerator.

**oxidation pond** An earthen wastewater basin in which biological oxidation of organic matter occurs naturally or with the assistance of mechanical oxygen transfer equipment.

**oxidation-reduction potential (ORP)** The potential required to transfer electrons from an oxidant to a reductant which indicates the relative strength potential of an oxidation-reduction reaction.

**Oxidator** Combination aeration, flocculation, and sedimentation unit by Baker Process.

**oxide** A compound of an element with oxygen alone.

**oxidize** To bring about oxidation.

**oxidizing agent** Any substance that can contribute electrons to a reaction.

**Oxifree<sup>®</sup>** Ultraviolet disinfection system by Capital Controls Co.

**Oxigest<sup>®</sup>** Cylindrical package extended aeration waste treatment plant by Smith & Loveless, Inc.

**Oxigritter** Primary sewage treatment unit by Baker Process.

**Oxitech<sup>®</sup>** Resin conditioning process for TOC reduction by USFilter/Rockford.

**OxiTop** System to measure BOD by WTW Measurement Systems, Inc.

**Oxitrace<sup>™</sup>** Oxidant analyzer and monitor by Capital Controls Co.

**Oxitron<sup>™</sup>** Fixed film wastewater treatment plant by USFilter/Krüger.

**Oxy Flo** Mechanical aerator by Aqua-Aerobic Systems, Inc.

**Oxy stream<sup>™</sup>** Oxidation ditch wastewater treatment system by WesTech Engineering Inc.

**Oxycap** Device to improve energy efficiency and reduce noise and aerosol emissions from surface aerators by DHV Water BV.

**Oxycat** Air pollution abatement catalyst by Met-Pro Corp.

**OxyCharger** Static aerator by Parkson Corp.

**Oxychlor** Chlorine dioxide generator by International Dioxide, Inc.

**Oxyditch** Oxidation ditch treatment system formerly offered by Chemineer, Inc.

**Oxy-Gard** Aeration control system that monitors dissolved oxygen level to control blower operation by Gardner Denver Blower Division.

**oxygen** A chemical element that comprises approximately 20% of the earth's atmosphere and is essential for biological oxidation.

**oxygen deficiency** The additional amount of oxygen required to satisfy the oxygen requirement of wastewater.

**oxygen sag** The temporary decrease in the dissolved oxygen level in a stream or river which occurs downstream from a point source of pollution.

**oxygen scavenger** A chemical used to supplement mechanical deaeration.

**oxygen transfer** The exchange of oxygen between a gaseous and a liquid phase.

**oxygen transfer rate** The mass of oxygen transferred per unit time.

**oxygen uptake** The amount of oxygen used during biochemical oxidation.

**oxygenases** Enzymes that catalyze the insertion of one or both atoms of an oxygen molecule into an organic compound, resulting in a chemical transformation.

**Oxygun™** Sub-surface self-aspirating aerator by ABS Pumps, Inc.

**Oxyrapid** Air diffusion and recycling system for activated sludge system by Infilco Degremont, Inc.

**Oxytrace®** Dissolved oxygen measurement instrument by Industrial Analytics, Corp.

**Oxytrace™** Chlorine residual analyzer by Capital Controls Co.

**Oxytrap™** Wastewater aerator by DAS International, Inc.

**OZ** Ozone generation equipment by Ozone Pure Water, Inc.

**Ozat®** Compact ozone generator by Ozonia North America.

**Ozofloat®** Ozone flotation process for water/wastewater treatment by USFilter/Krüger (North America) and OTV.

**ozonation** The process of using ozone in water or wastewater treatment for oxidation, disinfection, or odor control.

**ozonator** An ozone generator.

**ozone** An unstable, gaseous oxidizing agent with disinfection properties similar to chlorine, also used in odor control and sludge processing. Chemical formula is O<sub>3</sub>.

**ozone byproducts** Compounds such as aldehydes and aldoacids formed when ozone is used to disinfect water.

**ozone contactor** A device used to promote the efficient transfer of ozone to water or wastewater.

**ozone destruct unit** An ozone destruction system used to guarantee removal of any unused ozone before the reactor off-gas is discharged to the atmosphere.

**ozone generator** Device used to produce ozone by passing air/oxygen through an electric field.

**ozone layer** The portion of the stratosphere, extending from an altitude of approximately 20 to 50 km, in which naturally occurring ozone protects life on earth by filtering out harmful ultraviolet radiation from the sun.

**Ozone Research & Equipment Corp.** Equipment manufacturer acquired by Osmonics, Inc.

**Ozonmat®** Ozone analyzer by Zellweger Analytics, Inc.



# P

- P&ID** Piping and instrumentation diagram.
- P&Ps** Practices and procedures.
- P2** Pollution prevention.
- P2Rx** Pollution Prevention Resource Exchange; a coordinated effort of nine regional pollution prevention resource centers funded by the U.S. EPA.
- PAC** Valve positioner and controller by F.B. Leopold Co., Inc.
- PAC** See “powdered activated carbon (PAC).”
- Pace**<sup>®</sup> Oil/water separator by Scienco/FAST Systems.
- Pacer II**<sup>™</sup> Package water treatment plant by Roberts Filter Group.
- Pacesetter** Liquid/liquid gravity separator by Baker Hughes Process Systems.
- Pacific Decadal Oscillation (PDO)** A warming/cooling pattern occurring in the Pacific Ocean which affects world weather patterns.
- Pacific Flush Tank** Former digestion equipment manufacturer acquired by USFilter/Envirex.
- package plant** Factory-assembled treatment plant generally incorporated in a single tank, or at most, several tanks.
- packed bed scrubber** An air pollution control device in which emissions pass through alkaline water to neutralize hydrogen chloride gas.
- packed column** A vertical vessel filled with packing material usually used to strip gases or degasify liquids.
- packing** The fill material in a fixed film reactor or stripping vessel that provides a large surface area per unit volume.
- PACl** Polyaluminum chloride.
- Pacpuri**<sup>®</sup> Sodium hypochlorite generation system by USFilter/Electrocatalytic.
- FACT**<sup>®</sup> Powdered-activated carbon wastewater treatment process by USFilter/Zimpro.
- Pactank**<sup>™</sup> Portable spill containment system by PacTec, Inc.
- Paddle Dryer** Sludge dryer by Komline-Sanderson Engineering Corp.
- paddle flocculator** A flocculation device utilizing rotating baffles to accomplish mixing.
- PADRE**<sup>®</sup> Moving bed resin adsorption system for VOC removal/recovery by Ther-matrix, Inc.
- PAH** See “polynuclear aromatic hydrocarbons (PAH).”
- paint filter test** Test to determine free water content of sludge sample.
- PakTOR** Multi-cell packed bed reactor by USFilter/General Filter.
- palatable water** Water at a desirable temperature that is free from objectionable tastes, odors, colors, and turbidity.
- P-alkalinity** See “phenolphthalein alkalinity.”
- PallSep**<sup>™</sup> Vibrating membrane filtration by Pall Corp.
- Palmer-Bowlus Flume** A portable, venturi-type flume used to measure water or wastewater flow.

**PAN** See “peroxyacetyl nitrate (PAN).”

**pandemic** A worldwide epidemic.

**PAPR** Powered air-purifying respirator.

**Para Cone** Internally fed rotary fine screen by Andritz-Ruthner, Inc. (Western Hemisphere) and USFilter/Contra-Shear.

**Parafash** Forced circulation evaporator by APV Crepaco, Inc.

**Paraflow** Plate heat exchanger by APV Crepaco, Inc.

**Paramax** Speed reducer product line by Sumitomo Machinery Corp.

**paraquat** A herbicide resistant to microbial degradation that has been used to control marijuana and whose exposure can result in serious health effects or death.

**parasite** An organism that lives either on or inside a larger host organism and where the presence of the parasite is usually harmful to the host organism.

**parasitic bacteria** Bacteria that require a living host organism.

**Para-Stat** Static screen by Dontech, Inc.

**Paravap** High solids evaporator by APV Crepaco, Inc.

**parenteral solution** A solution introduced into the body by a vein, muscle, or pathway other than the mouth.

**Parkwood** Sewage treatment equipment product line by Longwood Engineering Co., Ltd.

**Parshall flume** A fixed, venturi-type flume used to measure water or wastewater flow.

**parthenogenic** Capable of reproduction by means of an unfertilized egg.

**partial closure** The closure of a hazardous waste management unit at a facility that contains other active hazardous waste management units.

**partial pressure** The pressure exerted by each gas in a mixture proportional to the amount of that gas in the mixture.

**particle counter** Instrument used to measure the size and count the number of particles in water.

**particle counting** A quantitative measurement of the number and size of individual particles in a water or wastewater sample.

**particle size analysis** Determination of the amounts of different particle sizes in a sample.

**particulate** Usually considered to be a solid particle larger than one micron or large enough to be removed by filtration.

**particulate organic carbon (POC)** The portion of organic matter that can be removed by filtration through a 0.45 micron filter.

**particulate organic matter (POM)** Material of plant or animal origin suspended in water and usually capable of being removed by filtration.

**Partisol®** Air sampler by Rupprecht & Patashnick Co. Inc.

**parts per million (ppm)** A common unit of measure used to express the number of parts of a substance contained within a million parts of a liquid, solid, or gas. Generally interchangeable with “milligrams per liter” in dilute solutions and water treatment calculations.

**parts per thousand (ppt)** A unit of measure used to express the number of parts of a substance contained within a thousand parts of a liquid, solid, or gas.

Generally used to specify a water's salinity and commonly indicated by the symbol "0/00."

**PASS**<sup>®</sup> Poly-aluminum-silicate-sulfate coagulant by Eaglebrook, Inc.

**Passavant** Wastewater treatment equipment product line by USFilter/Zimpro.

**PASS-C**<sup>®</sup> Poly-aluminum-chloride coagulant by Eaglebrook, Inc.

**passivation** The changing of a chemically active surface of a metal to a much less reactive state. Usually done to stainless steel by immersion in an acid bath.

**passive screen** Intake screening device that does not employ mechanical cleaning.

**passive solar heating** A heating system that provides heat directly from the sun's rays and does not employ pumps, blowers, or water-filled pipes to transfer heat.

**Pastel UV**<sup>®</sup> Former name of InSpectra UV analyzer by Azur Environmental.

**pasteurization** A process for killing pathogenic organisms by applying heat for a specific period of time.

**pathogen** Highly infectious disease-producing microbes commonly found in sanitary wastewater.

**Pathwinder**<sup>®</sup> Screenings conveyor by Serpentix Conveyor Corp.

**Patriot** Fluid recovery treatment system for spent coolant and oils by Waterlink Biological Systems.

**PATS** Pesticide action tracking system.

**Paygro** In-vessel composting system by Fairfield Service Co.

**PC** See "physical-chemical treatment (PC)."

**PCB** See "polychlorinated biphenyl (PCB)."

**PCC** Process Combustion Corp.

**PCE** See "perchloroethylene (PCE, also PERC)."

**PCI** Patterson Candy International, Ltd.

**pCi** See "picocurie (pCi)."

**PCM** Phase contrast microscopy.

**PCP** Progressing cavity pump.

**PCV** See "positive crankcase ventilation (PCV)."

**PD** Positive displacement.

**PD Plus**<sup>®</sup> Heavy duty blower by Tuthill Pneumatics Group.

**PDC**<sup>™</sup> Polymer dosage control system by Andritz-Ruthner, Inc.

**PDM**<sup>®</sup> Water storage tank product line by Pitt-Des Moines, Inc.

**PDO** See "Pacific Decadal Oscillation (PDO)."

**PE** (1) Professional engineer. (2) See "population equivalent (PE)."

**Peabody Floway** Former name of Floway Pumps, Inc.

**Peabody TecTank** Bolted steel storage tank by A.O. Smith Engineered Storage Products.

**Peabody Welles** Former manufacturer whose product lines were acquired by USFilter/Aerator Products.

**peak flow** Excessive flows experienced during hours of high demand, usually determined to be the highest 2-hour flow expected to be encountered under any operational conditions.

**peaking factor** The ratio of peak to average flow.

**Pearlcomb**<sup>®</sup> Fine bubble diffuser by USFilter/Diffused Air Products Group.

**Pearth** Anaerobic digester gas mixing system by USFilter/Envirex.

**peat** Material formed by partial decay of marsh vegetation with a moisture content greater than 75%.

**pebble lime** See “quicklime.”

**PEF** See “primary effluent filtration (PEF).”

**PEL** See “permissible exposure limit (PEL).”

**pelagic** Referring to the open sea at all depths.

**Pelican** Wall-mounted clarifier scum removal system by NSW Corp. and Copa Group (U.K.).

**Pelldry** Liquid-absorbing pellet by the former Sheldahl Industrial Absorbents.

**Pelletech®** Indirect sludge dryer and pelletizing unit by Wheelabrator Water Technologies, Inc.

**Pelton wheel** An impulse hydraulic turbine that may be used as an energy recovery device in high head applications such as seawater reverse osmosis.

**PEMS** Predictive emissions monitoring systems. This monitors critical operational parameters of the source and relates the results to the emissions level.

**Penberthy** Former manufacturer whose product line is now offered by Chemineer, Inc.

**Penfield®** Water treatment product line by USFilter/Rockford.

**Penro** Reverse osmosis systems by Penfield Liquid Treatment Systems.

**penstock** A pipe which transports water to a turbine for the production of hydroelectric energy.

**PentaPure®** Disinfecting resin by WTC Industries, Inc.

**Pentech** Former manufacturer whose product line is now offered by Chemineer, Inc.

**per capita** Per person.

**PERC** See “perchloroethylene (PCE, also PERC).”

**perc test** See “percolation test.”

**perched aquifer** An unconfined aquifer separated from the underlying water table by an impermeable layer or unsaturated zone.

**perched water** Zone of unpressurized water held above the water table by impermeable rock or sediment.

**perchlorate** A rocket fuel ingredient emerging as an environmental threat particularly to some drinking water supplies. Chemical formula  $\text{ClO}_4^-$ .

**perchloroethylene (PCE, also PERC)** A chlorinated hydrocarbon used as an industrial cleaner or solvent, often used to dry cleaning clothing. Also called “tetrachloroethylene.”

**Percol®** Polyelectrolyte used to enhance liquid/solid separation by Ciba Specialty Chemicals.

**percolating filter** See “trickling filter.”

**percolation** The flow or trickling of a liquid downward through a contact or filtering medium.

**percolation test** Test used to determine the water-absorbing capacity of soil where the drop in water level in a test hole is measured over a fixed time period. Also called “perc test.”

**Perc-Rite®** Filtration system by Waste Water Systems, Inc.

**perfected water right** A permitted water right indicating that anticipated uses were of beneficial use.

**perfection** The process of meeting terms and conditions of a water right permitting process which results in a perfected water right.

**performance ratio** A unit of measurement used to characterize evaporator performance expressed as the mass of distillate produced per unit of energy consumed.

**peripheral feed clarifier** A circular sedimentation basin in which the influent flows from the perimeter toward the center of the unit.

**periphyton** Microscopic underwater plants and animals that are firmly attached to solid surfaces such as rocks, logs, pilings, and other structures.

**peristaltic pump** A type of positive displacement pump where the fluid is squeezed through a flow tube by external rollers.

**Perma-buoy** Foam-filled fiberglass float for chain and flight sludge collector by Jeffrey Chain Corp.

**Permachem** Packages containing chemical compositions and reagents by Hach Co.

**permafrost** Permanently frozen subsurface soil layer in the polar regions.

**Permaglas<sup>®</sup>** Storage tank coating system by A.O. Smith Engineered Storage Products.

**Permaklip** Belt seam for filter press belt by Sefar America, Inc.

**Permalife** Chain and flight sludge collector components by Jeffrey Chain Corp.

**permanent hardness** Hardness associated with sulfates, chlorides, and nitrates of calcium and magnesium which remain after boiling.

**permanent threshold shift (PTS)** A permanent hearing loss for a certain sound frequency.

**Permasep<sup>®</sup>** Reverse osmosis products by E.I. Dupont De Nemours, Inc.

**permeability** The property of a filter medium to permit a fluid to pass through it under the influence of pressure.

**permeate** The liquid that passes through a membrane.

**permeator** A pressure vessel containing semi-permeable membranes.

**PermeOx<sup>®</sup>** Solid peroxygen by FMC Corp., Hydrogen Peroxide Division.

**permissible dose** The dose of a chemical that may be received by an individual without the expectation of a significantly harmful result.

**permissible exposure limit (PEL)** OSHA-established workplace exposure limit for 600 industrial chemicals.

**Permofilter** Horizontal multiple cell pressure filter by USFilter/Warren.

**Permujet<sup>®</sup>** Clarifier by USFilter/Warren.

**Permupak** Package water treatment plant by USFilter/Warren.

**PermuRO** Reverse osmosis system by USFilter/Warren.

**Permutit<sup>®</sup>** Water treatment product line by USFilter/Warren.

**peroxone** A blend of ozone and hydrogen peroxide used for disinfection and odor control.

**Perox-Pure<sup>®</sup>** UV-catalyzed hydrogen peroxide system by Calgon Carbon Corp.

**Perox-serv<sup>™</sup>** Odor control services by Vulcan Performance Chemicals.

**Perox-stor<sup>™</sup>** Hydrogen peroxide user service by Vulcan Performance Chemicals.

**peroxyacetyl nitrate (PAN)** A secondary pollutant and major component of photochemical smog formed when reactive hydrocarbons and oxides of nitrogen combine in the presence of sunlight.

**Perpac** Surface water treatment plant by Vulcan Industries, Inc.

**Perrin** Dewatering equipment product line by USFilter/Dewatering Systems.

**personal protective equipment (PPE)** Devices or clothing worn to help insulate a person from direct exposure to hazardous materials.

**personnel access opening** An opening in a vessel or sewer to permit human entry. Also called a “manhole” or “manway.”

**PERT** Program evaluation review technique.

**pervaporation (PV)** A process in which membranes are used to remove volatile organic compounds from an aqueous stream.

**pesticides** A chemical used to kill undesired insects or animals.

**PET** Polyethylene terephthalate. A resin used to make plastic bottles.

**PET™** Demineralizer system by USFilter Corp.

**petri dish** A covered dish containing an agar media used in the laboratory to cultivate bacteria.

**petrochemicals** Products or compounds produced by the processing of petroleum and natural gas hydrocarbons.

**Petro-Flex®** Portable holding tank by Aero Tec Laboratories, Inc.

**petroleum** The crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

**Petrolux** Ceramic membrane filter by USFilter Corp.

**Petro-Pak** Coalescing media for oil removal system by McTighe Industries, Inc.

**Petro-Screen™** Oil coalescer screen by Highland Tank & Manufacturing.

**Petro-Xtractor™** Water well oil skimmer by Abanaki Corp.

**pezodialysis** Membrane process to remove salt from solution where salt, rather than water, passes through the membrane.

**PFBC** Pressurized fluidized bed combustion.

**PFCs** Perfluorinated compounds.

**PFD** Process flow diagram.

**Pfiesteria piscicida** A waterborne organism toxic to fish.

**PFO** Power fail open.

**PFR** See “plug flow reactor (PFR).”

**PFRP** Process to further reduce pathogens.

**PFT** Former equipment manufacturer acquired by USFilter/Envirex.

**PFU** See “plaque-forming units (PFU).”

**pH** The reciprocal of the logarithm of the hydrogen ion concentration in gram moles per liter. On the 0 to 14 pH scale, a value of 7 at 25°C (77°F) represents a neutral condition. Decreasing values indicate increasing hydrogen ion concentration (acidity) and increasing values indicate decreasing hydrogen ion concentration (alkalinity). Full form is “potential of hydrogen.”

**phagotroph** An organism that obtains nutrients through the ingestion of solid particles of food.

**Phantom® 4** Odor-fighting product by NuTech Environmental Corp.

**pharmaceutical-grade water** See “USP-purified water.”

**pharmakinetics** The dynamic behavior of chemicals inside biological systems, including uptake, distribution, metabolism, and excretion.

**PharmMAX™** Reverse osmosis system pharmaceutical and biotech applications by USFilter.

**phase** The state of a substance; solid, liquid, or vapor.

**phased reversal** A technique employed in EDR systems to improve product recovery by staging electrical polarity reversal.

**PHC** Principal hazardous constituent.

**PHD** Peak hourly demand.

**PhD<sup>2</sup>** Portable multiple gas detector by Biosystems, Inc.

**phenolphthalein** A color indicator that changes from colorless to pink/red, used to measure alkalinity.

**phenolphthalein alkalinity** Alkalinity determined by titration with sulfuric acid to pH 8.3, indicated by a color change of phenolphthalein and expressed as mg/L of calcium carbonate. Also called “P-alkalinity.”

**phenols** Organic pollutant also known as carboic acid occurring in industrial wastes from petroleum processing and coal-coking operations.

**pheromone** A substance secreted by an organism that influences the behavior or developmental response of other members of the same species.

**Phoenix®** Odor control system by Calgon Carbon Corp.

**Phoenix Press** Belt filter press by Phoenix Process Equipment Co.

**Phoenix System** Filter air scour and underdrain systems by AWI.

**phosphate** A salt or ester of phosphoric acid.

**phosphoric acid** An acid produced from mined phosphate rock used in fertilizers and detergents. Chemical formula is H<sub>3</sub>PO<sub>4</sub>.

**phosphorous** (1) A nonmetallic chemical element with the chemical symbol P.  
(2) A nutrient essential to all life forms whose overabundance can contribute to the eutrophication of a water body.

**Phostrip** Biological system for phosphorus and BOD removal by Tetra Process Technologies.

**Phosver** Reagent chemical used to determine phosphate concentration in water by Hach Co.

**photic zone** The upper level of a waterbody into which light penetrates.

**photocatalytic oxidation** A process where organic and inorganic contaminants are oxidized by free radicals generated from the interaction of UV radiation with a chemical or metal oxide catalyst.

**photochemical smog** A form of air pollution which results in an atmospheric haze and is caused by the reaction of sunlight with VOCs, nitrogen oxides, and other pollutants produced by combustion processes.

**photooxidation** The use of ultraviolet light to induce or supplement an oxidation reaction.

**photosynthesis** The process of converting carbon dioxide and water to carbohydrates, activated by sunlight in the presence of chlorophyll.

**phototrophs** Organisms that rely on the sun for energy.

**Photovac™** Portable VOC monitor by PerkinElmer Instruments.

**photovoltaic cell** A device that utilizes crystalline materials to convert light from solar radiation directly into electricity.

**phreatic** Of, or relating to, groundwater.

**phreatic surface** The free surface of groundwater at atmospheric pressure.

**phreatophyte** Any long-rooted plant that is able to obtain its water from the water table. Excessive growths of phreatophytes are undesirable in some areas since they may consume large quantities of scarce water.

**pHREEdom™** Cooling water treatment chemicals by Calgon Corp.

**PHSA** Public Health Service Act.

**phys-chem** See “physical-chemical treatment.”

**physical treatment** A water or wastewater treatment process that utilizes only physical methods such as filtration or sedimentation.

**physical-chemical treatment (PC)** Treatment processes that are nonbiological in nature. Also known as “phys-chem.”

**phytoplankton** Algae that exist floating or suspended freely in a body of water.

**phytoremediation** A remediation technique where specialized plants are used to take up specific soil contaminants into their roots or foliage prior to harvesting and treatment.

**phytotoxic** Harmful to plants.

**PIC** See “products of incomplete combustion (PIC).”

**Picabiol®** Activated carbon purification process for potable water by Pica USA, Inc.

**pickets** Vertical paddles used in a gravity thickener.

**pickle liquor** Waste acid from steel pickling process.

**pickling** A chemical or electrochemical method of removing mill scale and rust from steel by washing or immersing in an acid or salt solution.

**picocurie (pCi)** A unit of radioactivity equal to  $3.7 \times 10^{-12}$  curie.

**Pielkenrood** Former name of USFilter/Rossmark.

**piezometer** An instrument consisting of a small pipe and manometer fitted to the wall of pipe or container to measure pressure head.

**piezometric head** The elevation plus pressure head.

**pig** A water-propelled internal pipe cleaner.

**pigging** A pipeline cleaning procedure using water-propelled pigs to scour solids from the interior walls of a pipe.

**Pilgrim** Former equipment manufacturer acquired by Andritz-Ruthner, Inc.

**piling** Timbers, concrete posts, or other structural elements embedded into the ground to support a load.

**pilot plant** A water or wastewater treatment plant smaller than full scale and used to test and evaluate a treatment process.

**pilot tests** Testing a treatment technology under actual site conditions to identify potential problems prior to fullscale implementation.

**PIMA** Photonic ionization, manipulation, and augmentation. A desalination technology that achieves molecular modification of seawater through the use of lasers and photonics.

**PIN** Pesticide information network.

**pin floc** Small floc particle.

**Pinch Press** High pressure filtration and dewatering device by Waste-Tech, Inc.

**pinch valve** A valve where sealing is achieved by one or more flexible elements that can be pinched to stop flow.



**pink water** The process of wastewater stream resulting from the manufacture of explosives.

**pinle chain** Chain extensively used for elevating and conveying consisting of one-piece links cast with two offset sidebars and coupled with steel pins.

**pipe gallery** A passageway to provide access for installation and maintenance of underground pipes and valves.

**pipe spool** A prefabricated section of pipe.

**Pipeliner** In-line grinder/cutter device by Robbins Myers, Inc.

**pipette** A calibrated glass tube used to deliver prescribed volumes of liquids, usually less than 10 mL.

**Pista®** Vortex type grit removal system by Smith & Loveless, Inc.

**piston pump** A reciprocating pump whose piston normally incorporates a sliding seal with the cylinder wall.

**Pit Hog®** Sludge pumping system by Liquid Waste Technology, Inc.

**pitch** (1) The length of one link of chain measured from pin centerline to pin centerline. (2) The distance between the centers of adjacent tubes.

**pitot tube** Flow measurement device that measures the velocity head of a liquid stream as the difference between the static head and the total head. Also called a "pitot gauge."

**Pittchlor** High-test calcium hypochlorite product by PPG Industries, Inc.

**pitting** Localized corrosion-causing attacks over small surface areas which may reach considerable depths.

**PIV** Positive infinitely variable.

**pK** The reciprocal of the logarithm of the ionization constant of a chemical compound.

**Planet** Rotary distributor for fixed film reactor by Simon-Hartley, Ltd.

**plankton** Small, passively floating or weakly swimming animal and plant life of a body of water.

**plaque-forming units (PFU)** A measurement of viral particles where one PFU is equivalent to approximately 20 to 300 viral particles.

**PLASdek** Cooling tower fill by Munters.

**plasma** A high temperature, partially ionized gas which is electrically conductive.

**plasma arc furnace** A high temperature furnace utilizing a plasma arc heater, or torch, for the destruction of hazardous gaseous, liquid, and solid wastes.

**plate count** The number of microbe colonies that develop on a laboratory test dish after a fixed incubation period.

**plate settler** Clarifier with enhanced sedimentation through the use of steeply inclined plates.

**plate tectonics** The scientific theory that the earth's surface consists of large slabs, or plates, whose constant motion explains continental drift, the formation of mountains, and other geological changes.

**plate tower scrubber** An air pollution control device that neutralizes hydrogen chloride gas by bubbling alkaline water through holes in a series of metal plates.

**plate-and-frame press** A batch process dewatering device in which sludge is pumped through a series of parallel plates fitted with filter cloth.

**Plate-Pak®** Vane mist eliminators by ACS Industries, Inc.

**Platetube** Porous diffuser plates by Walker Process Equipment.

**PLC** Programmable logic controller.

**PLIRRA** Pollution Liability Insurance and Risk Retention Act.

**PLM** Polarized light microscopy.

**plug flow** Flow conditions where fluid and fluid particles pass through a tank and are discharged in the same sequence that they enter.

**plug flow reactor (PFR)** A reactor in which the residence time for a given input, or plug, is equal to the theoretical hydraulic retention time.

**plugging factor** See “silt density index (SDI).”

**plume** The measurable or visible impact of a discharge into the air or a body of water.

**plunger pump** A reciprocating pump whose plunger does not contact the cylinder walls but enters and withdraws from it through packing glands.

**Plus 5** Air diffuser by USFilter/Diffused Air Products Group.

**Plus 150™** Laboratory water system by USFilter Corp.

**plutonium** A radioactive metallic element chemically similar to uranium.

**pluvial** Of, or having to do with, rain.

**pluvial lake** A lake formed during a period of abundant rainfall.

**pluviometer** A rain gauge.

**PM** (1) Particulate matter. (2) Preventative maintenance.

**PM<sub>2.5</sub>** Airborne particulate matter having a diameter equal or smaller than 2.5 microns.

**PM<sub>10</sub>** Airborne particulate matter having a diameter equal to or smaller than 10 microns.

**PM<sub>15</sub>** Airborne particulate matter having a diameter equal or smaller than 15 microns.

**PM-100®** Clay filtration media by Colloid Environmental Technologies Co.

**PMD™** Pipe mounted diffuser by Environmental Dynamics Inc.

**PMR** Pollutant mass rate.

**PNA** Polynuclear aromatics.

**pneumoconiosis** Lung disease that results from chronic exposure to dusts.

**PO\*WW\*ER™** Wastewater treatment process to reduce residual solids by USFilter/Gas Technologies.

**POC** (1) Particles of complete combustion. (2) See “particulate organic carbon (POC).”

**Pocket Pal** Portable pH tester by Hach Co.

**pocosin** A low, flat swamp on the coastal plain of the Southeastern U.S.

**PODR** Point of diminishing returns.

**POE** See “point-of-entry (POE).”

**pogonip** Native American term for a dense winter fog containing frozen ice particles, occurring in deep mountain valleys of the western U.S., particularly in the Sierra Nevada mountains.

**pOH** The negative logarithm of the hydroxyl ion concentration approximated by the relationship:  $14 - \text{pH} = \text{pOH}$ .

**POHC** See “principal organic hazardous constituent (POHC).”

**point source discharge (PS)** A pipe, ditch, channel, or other container from which pollutants may be discharged.

**point-of-entry (POE)** Location of a water treatment or water quality device at the point drinking water enters a house or building for the purpose of reducing the contaminants in the drinking water distributed throughout the house or building.

**point-of-use (POU)** Location of a water treatment or water quality device at a faucet in an individual household.

**polar zone** The high altitude regions of the earth located from latitude 66°34' north and 66°34' south to the poles.

**polder** An area of dry, low-lying land that has been reclaimed from a body of water and is maintained through the use of dikes. In the Netherlands, polders are created for agricultural land.

**Pol-E-Z®** Emulsion polymer to enhance solids/liquid separation by Calgon Corp.

**pollutant** A substance, organism, or energy form present in amounts that impair or threaten an ecosystem to the extent that its current or future uses are precluded.

**Pollutant Standard Index (PSI)** Measure of adverse health effects of air pollution levels in major cities.

**pollution** The presence of a pollutant in the environment.

**Pollutrol** Former equipment manufacturer.

**Polly Pig** Internal pipeline cleaner by Knapp Polly Pig, Inc.

**Polyad™** Fluidized bed VOC emission control system by Weatherly.

**Poly-Alum** Polymerized inorganic coagulant by Rochester Midland.

**polyamide** A molecular chain polymer made of amide linkages used in the construction of thin film composite reverse osmosis membranes.

**PolyBlend®** Polymer mixing/feeding products by USFilter/Stranco.

**PolyBoss™** Instrument to check settling velocity in clarifier feedwell by WesTech Engineering Inc.

**Polybrake** Cleaning product for removal of polymers by AquaPro, Inc.

**polychaete worm** A small worm common in seas and estuaries often chosen for bioassays of coastal regions.

**polychlorinated biphenyl (PCB)** Class of hazardous organic compounds considered probable carcinogens formerly used in the manufacture of electrical insulation and heating and cooling equipment.

**polyelectrolyte** A compound consisting of a chain of organic molecules used as coagulants or coagulant aids. See also “polymer.”

**polyethylene** An inexpensive plastic with a low coefficient of friction and excellent abrasion, impact, and chemical resistance.

**Poly-Filter** Plate and frame filter press by the former Clow Corp.

**Poly-Fine** Absolute rated cartridge filters by USFilter/Filtration & Separation.

**polyhaline** A term used to characterize water with a salinity of 18,000 to 30,000 mg/L due to ocean salts.

**Polyjet** Flow control valve by Bailey Polyjet.

**PolyKleen®** ABS filter underdrain by Baker Process.

**Poly-Links** Nonmetallic sludge collector chain by NRG, Inc.

**Polymair** Package polymer processing system by Acrison, Inc.

**polymaleic acid** A high performance scale control additive.

**Polymaster**<sup>®</sup> Polymer mixing/feeding system by Neptune Chemical Pump Co.

**PolyMate**<sup>®</sup> Liquid polymer blending/feeding system by Neptune Chemical Pump Co.

**PolyMax** Polymer mixing/feeding products by Semblex, Inc.

**polymer** (1) High molecular weight compounds derived by the recurring addition of similar molecules. (2) Common term for “polyelectrolyte.”

**polymer activity** The percent of a polymer’s molecular weight available to react with and flocculate solids particles.

**Polymer Piping & Materials** Former equipment manufacturer whose products are now offered by Jaeger Products, Inc.

**polymerization** A chemical reaction in which simple molecules combine to form larger, more complex molecules.

**Polymetrics** Membrane products company acquired by USFilter.

**Polymetron**<sup>™</sup> Water analyzer product line by Zellweger Analytics, Inc.

**PolyMixer** Polymer mixing/feeding system by Hoffland Environmental Inc.

**PolyMizer**<sup>®</sup> Centrifuge by Alfa Laval Separation, Inc.

**polyna** An expanse of water surrounded by ice.

**polycyclic aromatic hydrocarbons** See “polynuclear aromatic hydrocarbons.”

**polynuclear aromatic hydrocarbons (PAH)** A group of aromatic compounds, many of which are carcinogenic, formed by industrial processes and during the burning of gasoline, coal, and other substances.

**Polypak** Polymer feeding system by BIF.

**polypeptide** A compound consisting of multiple linked amino acids.

**polyphosphates** Phosphate compounds used as sequestration agents to prevent formation of iron, manganese, and calcium carbonate deposits.

**Poly-Pleat**<sup>™</sup> Filter cartridges by Harmsco Filtration Products.

**PolyPress** Plate and frame filter press by Star Systems, Inc.

**PolyPro** Dry polymer feed system by AquaPro, Inc.

**Polypure** Water treatment chemical group of Polydyne, Inc.

**PolyRex** Polymer feed system by Bran+Luebbe.

**polysaline** A term used to characterize water with a salinity of 18,000 to 30,000 mg/L due to land-derived salts.

**Polyseed**<sup>®</sup> Bacterial culture for BOD seeding by Polybac Corp.

**Poly-Stage**<sup>™</sup> Modular air scrubber system by USFilter/Davis Process.

**polysulfone** A synthetic thermoplastic polymer used in the manufacture of ultra-filtration membranes and in thin film composite and charged polysulfone reverse osmosis membranes.

**PolyThickener** Waste-activated sludge thickener by Walker Process Equipment.

**Polytox**<sup>™</sup> Biological toxicity test kit by Polybac Corp.

**PolyTube** Tubular air diffuser formerly offered by Walker Process Equipment.

**polyurethane** An elastomer with tensile strength and abrasion resistance greater than that of natural rubber and capable of being formulated for injection molding or casting.

**polyvinyl chloride (PVC)** A thermoplastic with excellent corrosion resistance that is widely used to manufacture pipe and biological filter media.

**POM** See “particulate organic matter (POM).”

**pond** A body of water smaller than a lake, often formed artificially.

**pond scum** A mass of filamentous algae that forms a green scum on the surface of ponds.

**ponding** See "pooling."

**Pond-X®** Odor control product by NuTech Environmental Corp.

**Pontoon** Floating cover for anaerobic digesters formerly offered by USFilter/Envirex.

**pooling** The formation of pools of liquid on the surface of a clogged filter.

**population** (1) A group of interbreeding organisms occupying a particular space.

(2) The number of humans or other living creatures in a designated area.

**population at risk** A population subgroup that is more likely to be exposed to a chemical, or is more sensitive to the chemical, than the general population.

**population equivalent (PE)** The daily wastewater typically produced by one person expressed in terms of BOD; i.e., 60g of BOD per population equivalent.

**Porcupine** Indirect contact sludge dryer by Bethlehem Corp.

**PORI** Former name of USFilter Recovery Services.

**Poro-Carbon** Automatic liquid filter system by R.P. Adams Co., Inc.

**Poro-Edge** Automatic water strainer by R.P. Adams Co., Inc.

**porosity** The ratio of void volume to total bulk volume.

**Poro-Stone** Automatic liquid filter system by R.P. Adams Co., Inc.

**porous disk diffuser** A circular, fine bubble aeration device of porous plastic or ceramic construction.

**Porta Dike™** Portable spill containment system by Environetics, Inc.

**Port-A-Berm™** Portable secondary containment system by Aero Tec Laboratories, Inc.

**Portacel®** Gas chlorination system by F.B. Leopold Co., Inc.

**Porta-Cleanse** Submersible mixer for wet well pump station by Flygt.

**Porta-Feed®** Chemical handling system by Nalco Chemical Co.

**Porta-Pac™** Powdered-activated carbon wet injection system by Norit Americas Inc.

**PortaPump®** Portable, submersible pump by Warren Rupp, Inc.

**Porta-Tank** Liquid storage system by Environetics, Inc.

**Portland cement** Cement made by heating a slurry of crushed chalk or limestone and clay to clinker in a kiln before grinding and adding gypsum.

**Posi-Clean** Wedgewire straining element by Tate Andale, Inc.

**Posirake** Reciprocating rake bar screen formerly offered by USFilter/Zimpro.

**positive crankcase ventilation (PCV)** A method of reducing automobile engine emissions by directing crankcase emissions into the cylinders for combustion.

**positive displacement pump** A pump where liquid is drawn into a cavity and its pressure is increased, forcing the liquid through an outlet port into the discharge line.

**Positive Seal** Rotary distributor for trickling filter by Walker Process Equipment.

**post chlorination** Addition of chlorine after completion of other treatment processes.

**post treatment** Treatment of finished water or wastewater to further enhance its quality.

**post-closure** The time period following the shutdown of a waste management or manufacturing facility, which, for monitoring purposes, is often considered to be 30 years.

**potable reuse** The beneficial use of highly treated reclaimed water toward augmentation of potable water supply.

**potable water** See “drinking water.”

**potassium permanganate** A crystalline salt of potassium and manganese used for taste, odor control, and iron/manganese oxidation. Chemical formula is  $\text{KMnO}_4$ , also called “purple salt.”

**potential of hydrogen** See “pH.”

**potentially responsible party (PRP)** An individual or company identified as potentially liable for cleanup or payment for cost of cleanup of a hazardous waste site.

**potentiation** The effect of one chemical to increase the effect of another chemical.

**potentiometric surface** The level to which water will rise in cased wells or other cased excavations into aquifers.

**POTW** See “publicly owned treatment works (POTW).”

**POU** See “point-of-use (POU).”

**POU/POE** Point-of-use/point-of-entry.

**pounds per square inch, absolute (psia)** The total pressure in a system which is the sum of the gage pressure and atmospheric pressure and is expressed in terms of the pounds of force exerted per square inch.

**pounds per square inch, gage (psig)** The pressure measured by a gage and expressed in terms of the pounds of force exerted per square inch.

**pour point** The lowest temperature at which a liquid will pour.

**Powder Pop<sup>®</sup>** Chlorine test dispenser by HF Scientific, Inc.

**powdered activated carbon (PAC)** A powdered form of activated carbon fed as a slurry to water to absorb organics, particularly taste and odor-causing constituents.

**Powdex<sup>®</sup>** Combination ion exchange and filtration unit by Graver Co.

**Power Backwash<sup>™</sup>** Concurrent air and water filter backwash system by Tetra Process Technologies.

**Power Brush<sup>™</sup>** Internal pipeline cleaner by Pipeline Pigging Products, Inc.

**Power Mizer<sup>™</sup>** Multi-stage centrifugal blower by Spencer Turbine Co.

**Power Units<sup>™</sup>** Magnetic pipe treatment unit by Aqua Magnetics International, Inc.

**PowerRake** Reciprocating rake bar screen by the former EnviroFab, Inc.

**Powerhouse<sup>®</sup>** Alkaline cleaner/degreaser by Pro Products, Corp.

**Powermatic** Reciprocating rake bar screen by Brackett Geiger.

**Powerpak<sup>™</sup>** Filter press by Flo Trend Systems, Inc.

**PowerSewer<sup>™</sup>** Low pressure sewer by Interon Corp.

**PowerRupp<sup>®</sup>** Electrically driven diaphragm pump by Warren Rupp, Inc.

**Powerclean** Front cleaned multiple rake bar screen by USFilter/Aerator Products.

**Power-Trols** Custom engineered pump station motor control panel by Healy-Ruff Co.

**Poz-O-Lite<sup>®</sup>** A lightweight aggregate by Conversion Systems, Inc.

**Poz-O-Tec**<sup>®</sup> Scrubber sludge and stabilizing additive mixture that produces a stable, nonleaching, monolithic mass of low permeability by Conversion Systems, Inc.

**pozzolonic** Finely divided materials such as fly ash that aid in forming compounds possessing cementitious properties.

**ppb** Parts per billion.

**PPE** See “personal protective equipment (PPE).”

**ppm** See “parts per million (ppm).”

**ppmv** Parts per million by volume.

**ppmw** Parts per million by weight.

**PPP** Public-private partnership.

**ppt** Parts per thousand.

**PQ**<sup>®</sup> Sodium silicate corrosion inhibitor by PQ Corp.

**PQL** Practical quantitation limit. Generally the same as “estimated quantitation limit.”

**Praestol**<sup>®</sup> Polymer products by Stockhausen, Inc.

**preaeration** A preliminary treatment process in which wastewater is aerated to remove gases, add oxygen, promote flotation of grease, and/or aid coagulation.

**prechlorination** The application of chlorine before other treatment processes.

**precipitate** A solid that separates from a solution.

**precipitation** The phenomenon that occurs when a substance held in solution passes out of solution into a solid form.

**Precipitator**<sup>™</sup> Package treatment plants by USFilter/Warren.

**Precision** Fine bubble tube diffuser by USFilter/Diffused Air Products Group.

**precoat filter** Filter using a thin layer of very fine material, such as diatomaceous earth, to coat the filter surface before filtration cycles.

**precursor** A substance or compound from which another substance or compound is formed. Usually refers to an organic compound capable of being formed into a trihalomethane.

**prefilter** A filtration device located upstream of the main filtration process.

**PreFLEX**<sup>®</sup> Skid-mounted pretreatment system for reverse osmosis and demineralizer systems by USFilter/Rockford.

**preliminary assessment** The process of collecting and reviewing available information about a known or suspected waste site or release.

**preliminary treatment** Treatment steps including comminution, screening, grit removal, preaeration, and/or flow equalization which prepare wastewater influent for further treatment.

**Prerostal** System of adjusting pumping volume to inflow rate by Envirotech Pump-systems.

**prescriptive** Water rights which are acquired by diverting water and putting it to use in accordance with specified procedures.

**presedimentation** A pretreatment process used to remove sand, gravel, or other gritty material before subsequent treatment.

**Preservol**<sup>™</sup> Reverse osmosis membrane preservative by Professional Water Technologies, Inc.

**pressate** The liquid waste stream from a filter press.

**Pressflex** Dewatering screen fabric by Geschmay GmbH.

**PressMaster™** Hydraulic sludge dewatering unit by Baker Process.

**pressure drop** See “headloss.”

**Pressure Exchanger** Energy recovery device for seawater reverse osmosis unit by Energy Recovery, Inc.

**pressure filter** Filter unit enclosed in a vessel which may be operated under pressure.

**pressure filtration** The process of removing solids from a liquid using external pressure to force the liquid through a filter media.

**pressure head** The amount of energy in water due to water pressure.

**pressure sewers** A system of pipes in which water, wastewater, or other liquid is pumped to a higher elevation.

**pressure-swing adsorption (PSA)** A process using an adsorbent to separate components of a gas mixture, sometimes used to separate oxygen from air to form pure oxygen.

**Pressveyor** Hydraulic screenings press/conveyor by Waterlink Separations, Inc.

**Prestex** Filter belt for belt filter press by Sefar America, Inc.

**Presto-Tek** Flowmeter product line of Newport Electronics.

**presumptive test** The first of three steps in the analysis of water and wastewater for the presence of fecal bacteria. After a sample is inoculated and incubated, the presence of acid and gas is an indication of a positive test and the water is presumed to be contaminated. This test is followed by a confirmed test and a completed test.

**Pretreat Plus™** Antiscalant/dispersant by King Lee Technologies.

**Pretreat SDP™** Antiscalant for small capacity RO systems by King Lee Technologies.

**pretreatment** (1) The initial water or wastewater treatment process that precedes primary treatment processes. (2) The treatment of industrial wastes to reduce or alter the characteristics of the pollutants prior to discharge to a POTW.

**prevalent levels** Levels of airborne contaminant occurring under normal conditions.

**prevention of significant deterioration (PSD)** A provision of the Clean Air Act that establishes a minimum air quality baseline for particular pollutants in specific areas.

**primary clarifier** Sedimentation basin that precedes secondary wastewater treatment.

**primary contaminant** A drinking water contaminant with health-related effects.

**primary effluent filtration (PEF)** The use of granular media or synthetic material filtration to remove contaminants from primary effluent prior to discharge.

**primary industry categories** The 34 types of industrial facilities that require the best available technology for toxic water pollutants under the Clean Water Act.

**primary MCL** EPA-mandated maximum contaminant level in drinking water based on health effects.

**primary pollutant** A pollutant that exists in the environment in the same form as when it was released.

**primary sedimentation** Principal form of primary wastewater treatment utilizing clarifiers to reduce the solids loading on subsequent treatment processes.

**primary sludge** Sludge produced in a primary waste treatment unit.



**primary standards** National ambient air quality standards designed to protect human health with an adequate margin for safety.

**primary treatment** Treatment steps including sedimentation and/or fine screening to produce an effluent suitable for biological treatment.

**Prima-Sep®** Specialty clarifier with tray separator by Graver Co.

**Prime Aire** Trash pump by Gorman-Rupp Co.

**Primox®** Oxygen injection system for primary sewage by BOC Gases.

**Princeton Clearwater** Former equipment manufacturer.

**principal organic hazardous constituent (POHC)** Hazardous organic compounds that may form products of incomplete combustion when incinerated.

**prior appropriation** A doctrine of water law that allocates the rights to use water on a first-come first-serve basis.

**priority pollutants** A list of approximately 126 chemicals identified as toxic pollutants by the Clean Water Act.

**privately owned treatment works** A treatment works that is not owned or operated by a state or municipality. Not a "POTW."

**privatization** The involvement of nonpublic and entrepreneurial interests in project development, ownership, and/or operation of municipal facilities such as water and wastewater treatment systems.

**privy** A pit toilet, also called an "outhouse."

**PRO\*ECOLITH** Monolithic regenerative catalytic oxidation product for VOC abatement by Süd-Chemie Prototech Inc.

**PRO\*HHC** Halogenated hydrocarbon catalyst by Süd-Chemie Prototech Inc.

**PRO\*PEL** Bead-type air pollution control catalysts by Süd-Chemie Prototech Inc.

**PRO\*RCO** Metal coated regenerative catalytic oxidation product for VOC abatement by Süd-Chemie Prototech Inc.

**PRO\*VOC** Ceramic and metal monolithic catalyst products for VOC abatement by Süd-Chemie Prototech Inc.

**Probiotics™** Lagoon sludge oxidation products by Bio Huma Netics, Inc.

**ProBlend** Liquid polymer feed system by AquaPro, Inc.

**process wastewater** Wastewater generated during manufacture or production processes.

**process water** Water that is used for, or comes in contact with, an end product or the materials used in an end product.

**Prochem®** Agitator and mixer products by Chemics, Inc.

**produced water** All waters produced during the production of crude oil and gas.

**product staging** Reverse osmosis process configuration where the product from one stage is used as feedwater on a subsequent stage to improve product water quality.

**product water** Water produced as a result of treatment or desalination processes.

**products of incomplete combustion (PIC)** Carbon monoxide, hydrocarbons, and other organic matter generated when organic materials are burned.

**Professional Services Group** Former group merged into USFilter/Operating Services.

**profile wire** Term used to describe specially shaped wire that is generally triangular or trapezoidal in cross section. Also called "wedgewire."

**Profiler** Sludge blanket level and suspended solids monitor by Mt. Fury Co., Inc.

**progressing cavity pump (PCP)** Pump used for viscous fluids, including sludge, that consists of a single-threaded shaft rotor rotating in a double-threaded rubber stator.

**progressive cavity pump** See “progressing cavity pump (PCP).”

**ProGuard** Backwashable cartridge filters by ProGuard Filtration Systems.

**Promal** Pearlitic malleable iron chain material by USFilter/Envirex.

**ProMix™** Polymer wetting and blending unit by BlenTech Inc.

**ProPack** Random trickling filter media by the former Gray Engineering Co.

**ProPak™** Sampling system by Isco, Inc.

**propellant** Liquid in a self-pressurized pesticide product that expels the active ingredient from its container.

**prophylaxis** The observance of procedures necessary to prevent disease.

**proportional weir** A weir whose discharge is directly proportional to the head.

**Proportioneer** Mixer by Lightnin.

**Propulsair** Aspirating aerator by Baker Process.

**ProScreen®** Trommel screen by Knight Manufacturing Corp.

**ProSep** Membrane treatment system for industrial wastes by PTI Advanced Filtration.

**Prosonic™** Ultrasonic level control system by Endress+Hauser.

**Prosser/Enpro** Pump product line by Crane Pumps & Systems.

**ProTec RO™** Powder antifoulant by King Lee Technologies.

**ProTechtor™** Headworks grease and grit removal system by Hi-Tech Environmental, Inc.

**Protect** Portable carbon absorber by Waterlink/Barnebey Sutcliffe.

**protein** Any of a large class of complex nitrogenous compounds that contains one or more polypeptide molecules and occur in all animal and vegetable matter and are essential to life.

**Protista** The class of living organisms that includes algae, bacteria, and protozoa.

**Protoc** Total organic carbon analyzers by Tytronics, Inc.

**protoplast** The living substance of a plant or cell, excluding the cell wall.

**Prototech** Former name of Süd-Chemie Prototech Inc.

**protozoa** A group of microorganisms including amoebas, flagellates, and ciliates that feed on bacteria and other protists and reproduce by binary fission.

**ProTwin®** Sludge spreader by Knight Manufacturing Corp.

**PRP** See “potentially responsible party (PRP).”

**PS** See “point source discharge (PS).”

**PSA** See “pressure-swing adsorption (PSA).”

**PSD** See “prevention of significant deterioration (PSD).”

**PSES** Pretreatment Standards for Existing Sources.

**PSEU** Pollutant Specific Emissions Unit.

**pseudo-hardness** The action exhibited by sea, brackish, and other waters containing high concentrations of sodium that interferes with the normal behavior of soap.

**pseudomonas** A common rod-shaped aerobic bacteria.

**PSG** Professional Services Group, now a part of USFilter/Operating Services.

**psi** Pounds per square inch.

**PSI** See “Pollutant Standard Index (PSI).”

**psia** See “pounds per square inch, absolute (psia).”

**psig** See “pounds per square inch, gage (psig).”

**PSM** (1) Point source monitoring. (2) Process safety management.

**PSNS** Pretreatment Standards for New Sources.

**PSRP** Process to significantly reduce pathogens.

**PSU** Primary sampling unit.

***Psychoda flies*** A small, dark-colored fly that creates a nuisance by breeding in trickling filter beds. Commonly known as “filter flies.”

**psychrometer** An instrument used to determine the relative humidity and vapor tension of the atmosphere.

**psychrophiles** Bacteria that grow best at temperatures below 20°C.

**PTE** (1) Potential to emit. (2) Permanent total enclosure.

**ptomaine** Any of a class of alkaloid substances formed in decaying animal or vegetable matter by bacterial action on proteins.

**ptomaine poisoning** Food poisoning caused by bacteria, erroneously thought to be caused by ptomaines.

**PTS** See “permanent threshold shift (PTS).”

**public utility** A private business organization subject to government regulation that provides an essential product or service such as water, electricity, transportation, or communication to the public.

**public water system (PWS)** A system that pipes water for human consumption to at least 25 people or has 15 or more surface connections.

**publicly owned treatment works (POTW)** Treatment works owned by a state or municipality, including sewers, pipes, or other conveyances used to convey wastewater.

**PUC** Public Utilities Commission.

**pug mill** A grinder used to reduce the size of solid waste or sludge to facilitate further treatment or disposal.

***Pullman Power Products*** Chimney and storage silo product line by Wheelabrator Air Pollution Control, Inc.

***PullUp*** Removable aeration header and drop pipe assembly by USFilter/Aerator Products.

***Pulsapak***<sup>®</sup> Potable water treatment plant by Infilco Degremont, Inc.

**pulsation dampener** A device using air or other compressible gas to absorb pressure irregularities and induce uniform flow in pump suction or discharge lines.

***Pulsator***<sup>®</sup> Solids contact clarifier by Infilco Degremont, Inc.

***PULSAtrol***<sup>®</sup> Microprocessor based system controller by Pulsafeeder, Inc.

***Pulsatron***<sup>®</sup> Electronic metering pump by Pulsafeeder, Inc.

***Pulsemate***<sup>™</sup> Metering pumps and controls by USFilter/Wallace & Tiernan.

***Pulse-Mix***<sup>®</sup> Short-term backwashing process to regenerate sand filter media by USFilter/Zimpro.

**pump** A mechanical device used to apply pressure to a fluid to cause its flow.

**pump curves** A set of graphical pump characteristics that represent pump performance by comparing total discharge head, net positive suction head, and efficiency relative to capacity.

**pump stage** The number of impellers in a centrifugal pump.

**pump station** A chamber that contains pumps, valves, and electrical equipment necessary to pump water or wastewater.

**Pumpak** Standard pump control systems by Healy-Ruff Co.

**Purac** Product line of Waterlink Separations, Inc.

**Purafilter™** Air filters by Purafil, Inc.

**Puratex™** Cartridge filter by Osmonics, Inc.

**PurCycle™** VOC removal system by Purus Corp.

**pure oxygen process** Variation of the activated sludge process using pure molecular oxygen for microbial respiration rather than atmospheric oxygen.

**Purelab Plus™** Laboratory water purification system by USFilter Corp.

**Pureone®** Laboratory water system by USFilter Corp.

**Puresep®** Resin separation process by USFilter/Warren.

**Purgamix** Sludge mixing and heating system by Waste-Tech, Inc.

**Purge Saver™** Groundwater analyzer by QED Environmental Systems, Inc.

**Purifax®** System using wet oxidation process for sludge stabilization by BIF.

**purified water** Bottled water that has undergone significant treatment prior to bottling. See also “USP-purified water.”

**Puritan** Fluid recovery treatment system for spent coolant and oils by Waterlink Biological Systems.

**purl** To flow in ripples with a murmuring sound.

**Purofine™** Ion exchange resin by Purolite Co.

**PURPA** Public Utilities Regulatory Policies Act.

**purple salt** See “potassium permanganate.”

**Purspring** Biofiltration system by Bioway America.

**Pusher™** Dewatering screw press by USFilter/Dewatering Systems.

**putrefaction** The decomposition of organic matter by bacteria, fungi, and oxidation which results in the formation of noxious products and/or foul-smelling gases.

**putrescible** Organic matter that is likely to result in a rotten, foul-smelling product as it undergoes decay or decomposition.

**Putzmeister** Sludge cake pump marketed by USFilter/Asdor.

**PV** See “pervaporation (PV).”

**PVC** See “polyvinyl chloride (PVC).”

**PVDF** Polyvinylidene fluoride.

**PWMP®** Pure water management program for outsourced water services by USFilter Corp.

**PWS** See “public water system (PWS).”

**PWSS** Public water supply system.

**PWT** Professional Water Technologies, Inc.

**Pyramed™** Direct retention filter underdrain system by WesTech Engineering Inc.

**pyrite** A mineral containing sulfur and iron, frequently found in coal.

**Pyrofluid®** Fluidized bed incinerator by USFilter/Krüger (North America) and OTV.

**pyrogen** Cell material from bacteria that produces fevers in mammals.

**Pyrolox™** Granular media for removal of iron, manganese, and hydrogen sulfide by Clack Corp.

**pyrolysis** The chemical decomposition of a material by heating in oxygen-deficient conditions.

**Pyrospout** Fluid bed combustor/incinerator by Process Combustion Corp.

**Python Press** High pressure filtration and dewatering device by Waste-Tech, Inc.

## Q

**Q·E·D plus™** Mixer by Chemineer, Inc.

**QA** See “quality assurance (QA).”

**QC** See “quality control (QC).”

**QL-I™** Ultraviolet disinfection system by Infilco Degremont, Inc.

**QLS** Quick-lock sprocket by Budd Co.

**Q-Pac™** Random plastic media by Lantec Products, Inc.

**Q-Tracker™** Sewer collection flow monitor by Badger Meter, Inc.

**Quadra Press** Plate and frame filter press by Aqua Care Systems.

**Quadra-Clean™** Vertical basket batch type centrifuge by Western States Machine Co.

**Quadra-Kleen** Sand filter backwash system by Culligan International Corp.

**Quadramatic III®** Automatic batch type centrifuge by Western States Machine Co.

**Quadrant™** Thermal oxidizer by Catalytic Products International.

**Quadrasep** Integrated wastewater treatment system by Blace Filtronics, Inc.

**Quadricell®** Mechanical gas induction flotation separator by USFilter/Whittier.

**Quadrufil** Gravity filter system by Vulcan Industries, Inc.

**quagga mussel** Freshwater mollusk that can foul water intake screens and piping by attaching itself to a solid structure, eventually restricting flow.

**quaking bog** A wholly or partially floating bog of peat that shakes when walked upon.

**qualitative** The general description of a substance without specifying its exact amount or concentration.

**quality assurance (QA)** A definitive plan for operation that specifies the measures used to produce products or data of known precision and bias.

**quality control (QC)** Set of measurements within an analysis methodology to assure that the process is in control.

**Quanti-Cult™** Quality control test organisms by IDEXX Laboratories, Inc.

**quantitative** Description of a substance in exact terms.

**Quanti-Tray™** Water sample test kit by IDEXX Laboratories, Inc.

**Quantum®** Floating aerator by Air-O-Lator Corp.

**quart** A liquid and dry unit of measure equal to a quarter of a U.S. gallon or 2 pints.

**quaternary ammonium** A basic chemical group  $[N(CH_3)_3^+]$  which provides the site of activity of certain anion exchange resins.

**quench** To cool suddenly by immersion in water or oil.

**quench tank** A water-filled tank used to cool incinerator residues or hot materials during industrial processes.

**quicklime** A calcium oxide material produced by calcining limestone to liberate carbon dioxide, also called “calcined lime” or “pebble lime,” commonly used for pH adjustment. Chemical formula is CaO.

**Quick-Purge**<sup>®</sup> Soil and groundwater remediation technology by Integrated Environmental Solutions, Inc.

**quicksand** A loose, wet, unstable sand deposit caused by the upward pressure of sand, and which may engulf an object.

**Quickwipe**<sup>™</sup> Quartz lamp cleaning technology used in UV disinfection systems by Calgon Carbon Corp.

**Quik-Clamp** Clamp-on spray nozzle by USFilter/Rex & Link-Belt Products.

**Quik-Solid**<sup>®</sup> Granulated absorbent polymer by Colloid Environmental Technologies Co.

## R

**R&B Filtration** Sludge dewatering equipment product line of Baker Process.

**R&D** Research and development.

**RA** (1) Reasonable alternative. (2) Regulatory alternatives. (3) Regulatory analysis. (4) Remedial action. (5) Resource allocation. (6) Risk analysis. (7) Risk assessment.

**rabble arms** Rotating rake arms used to scrape sludge in a multiple hearth furnace.

**RAC** Radiation Advisory Committee.

**race track** See “oxidation ditch.”

**RACM** (1) See “reasonably available control measures (RACM).” (2) See “regulated asbestos-containing material (RACM).”

**Racod**<sup>™</sup> Biological sensor to provide a rapid indication of BOD by USFilter/Wallace & Tiernan.

**RACT** See “reasonably available control technology (RACT).”

**rad** Radiation absorbed dose. A measure of the absorbed dose of radiation.

**Radial Filter** Tertiary filtration system by Waterlink/Aero-Mod Systems.

**radial flow** Direction of flow from either the center to the periphery or the periphery to center.

**Radial Plate Dryer** Sludge drying system by B-H Process Systems.

**radial well** A well system where one or more cylindrical screens are driven horizontally into a water-bearing stratum, radiating from a central sump.

**radiation** The transfer of energy by means of electromagnetic waves or high-speed particles.

**radiation sickness** A sickness that results from overexposure to radiation whose symptoms may include nausea, bleeding, hair loss, and death.

**radiation standards** Regulations that set maximum exposure limits for protection of the public from radioactive materials.

**radical** A combination of atoms in a molecule that remains unchanged throughout most chemical reactions.

**Radiator** Solid waste incinerator by Hitachi Metals America, Ltd.

**radioactive** A description of an unstable atom that undergoes spontaneous disintegration and gives off radiant energy in the form of particles or rays.

**radioactive material** A material that spontaneously emits ionizing radiation having a specific activity greater than 0.002 microcuries per gram.

**radioactivity** The spontaneous decay or disintegration of an atomic nucleus that is accompanied by radiation.

**radioisotopes** Chemical variants of an element with potentially oncogenic, teratogenic, and mutagenic effects on the human body.

**radionuclide** An atom that spontaneously undergoes radioactive decay.

**radius of vulnerability zone** The maximum distance from the point of release of a hazardous substance in which the airborne concentration could reach the level of concern under specified weather conditions.

**radon** A radioactive gas produced from the decay of radium which may be inhaled when the gas is released from groundwater, often during showering, bathing, or cooking.

**radon daughters** Short-lived radioactive compounds produced during the decay of radon that decay into longer-lived lead isotopes. Also called radon progeny or radon decay products.

**RADS** See “reactive airways dysfunction syndrome (RADS).”

**radwaste** Radioactive waste.

**raffinate** The extracted waste stream containing contaminants in a solvent extraction process.

**railway softening** See “excess lime-soda softening.”

**rain forest** See “tropical rain forest.”

**Rainlogger** Stormwater sampling unit by American Sigma, Inc.

**Rake-O-Matic** Hydraulically operated, reciprocating rake bar screen formerly offered by BIF.

**Ram**<sup>®</sup> Waste compactor by S&G Enterprises, Inc.

**RAMP** Rural Abandoned Mine Program.

**Rampactor** Compaction device by SRS Industrial Engineering.

**Ram-Rod** Dewatering screw press by Ketema, Inc.

**RAMS** Regional Air Monitoring System.

**Ramtube**<sup>®</sup> Reverse pulse self-cleaning baghouse by Farr Co.

**Ranney**<sup>®</sup> Well screen and caisson intake products by Layne Christensen, Ranney Division.

**Ranney Intake** Surface water intake system utilizing a passive screen/caisson arrangement by Layne Christensen, Ranney Division.

**RAP** Remedial action plan.

**RaPID Assay**<sup>™</sup> Reagent kit for field soil analysis by Strategic Diagnostics, Inc.

**Rapid Decanter**<sup>®</sup> Solid bowl centrifuge by Krauss Maffei Corp.

**Rapid Gravity Dewatering**<sup>™</sup> Inclined gravity filter for sludge dewatering by Wil-Flow, Inc.

**rapid mix** A physical water treatment process that involves rapid and complete mixing of coagulants or conditioning chemicals.

**rapid sand filter** Granular media filter in which water flows downward through a sand filter bed at rates typically ranging from 80 to 320 L/min/m<sup>2</sup> (2 to 8 gpm/sq ft) of surface area.

**Rapidor** Pressure leaf filter by Liquid-Solids Separation Corp.

**RAPS** Regional Air Pollution Study.

**RAS** See “return activated sludge (RAS).”

**rasp** A machine that grinds waste into a manageable size and controls odors.

**RATA** See “relative accuracy test audit (RATA).”

**rated capacity** The basis for calculating the period of time or volume of treated product delivered by a water softener, demineralizer, or filter between regenerations, backwashing, or servicing.

**RatedAeration**<sup>®</sup> Circular steel-activated sludge wastewater treatment plant formerly offered by USFilter/Envirex.

**rate-of-flow controller** A device that automatically controls the rate of flow of a fluid.

**Ratio** Turbidimeter by Hach Co.

**RatioFlo**<sup>™</sup> Flow-to-polymer ratio valve by USFilter/Stranco.

**raw sewage** Untreated wastewater and its contents.

**raw sludge** Undigested sludge recently removed from a sedimentation basin.

**raw water** Untreated surface or groundwater.

**Raymond** Sludge incinerator formerly offered by GL&V/Dorr-Oliver, Inc.

**Raymond Process** An aquifer bioremediation technology where groundwater is recovered from the aquifer, treated, amended with nutrients and oxygen, and reinjected.

**RaySolv** Product group of CSM Worldwide/RaySolv.

**Raysorb** Activated carbon VOC control system by CSM Worldwide/RaySolv.

**RBC** See “rotating biological contactor (RBC).”

**RBCA** See “Risk Based Corrective Action (RBCA).”

**RCC** Resource Conservation Co.

**RCO** See “regenerative catalytic oxidizer (RCO).”

**RCP** Reinforced concrete pipe.

**RCRA** See “Resource Conservation and Recovery Act (RCRA).”

**RCRIS** Resource Conservation and Recovery Information System

**RDF** See “refuse derived fuel (RDF).”

**rDNA** Recombinant DNA.

**RDV** Reference dose values.

**Reacher** Reciprocating rake bar screen by Schloss Engineered Equipment.

**reactant** Any substance taking part in a chemical reaction.

**reaction rate** The rate at which a chemical reaction occurs.

**reactivation** The process of removing adsorbed organics and restoring the adsorptive characteristics of an adsorbent, usually by thermal or chemical means.

**Reactivator**<sup>®</sup> Solids contact clarifier by Graver Co.



**reactive airways dysfunction syndrome (RADS)** An asthma-like condition resulting in hyper-responsiveness to inhaled materials that may develop after long-term exposure to hydrogen sulfide.

**reactive wall** A permeable vertical wall constructed of a reactive mixture and installed below grade to treat groundwater that flows through it.

**reactive waste** A solid waste that is normally unstable and readily undergoes violent change, generates toxic gases or fumes, or is capable of detonation or explosion.

**reactivity** The tendency for a chemical substance to combine with other elements and compounds.

**reactor** The container or tank in which a chemical or biological reaction is carried out.

**Reactor-Thickener** Sludge-thickening device using mixers and dewatering screens by JDV Equipment Corp.

**React-pH™** pH-stable-activated carbon by Calgon Carbon Corp.

**reaeration** The absorption of oxygen into water under conditions of oxygen deficiency.

**reagent** A chemical added to a system to bring about a chemical reaction.

**reagent grade water** High purity water suitable for use in making reagents for use in analytical procedures.

**reasonable maximum exposure** The maximum exposure reasonably expected to occur in a population.

**reasonably available control measures (RACM)** A broadly defined term referring to technological and other measures for pollution control.

**reasonably available control technology (RACT)** Control technology that is reasonably available, technologically and economically feasible, and usually applied to existing sources in nonattainment areas; in most cases it is less stringent than new source performance standards.

**reboiler** An evaporator-condenser unit which produces secondary steam after condensation of primary steam. Used to isolate steam systems and avoid cross contamination of boiler chemicals.

**recalcining** Recovery of lime from water or wastewater sludge, usually with a multiple hearth furnace.

**recarbonation** The reintroduction of carbon dioxide into water, usually during or after lime-soda softening.

**receiving water** Surface water body that receives effluent discharge from a wastewater treatment plant.

**receptor** A molecule that can selectively bind to another substance in the initial stages of a toxic response.

**receptor cell** A nerve ending or group of nerve endings specialized for the reception of stimuli.

**recharge** The natural or artificial process of replenishing an aquifer.

**recharge area** A land area in which water reaches the zone of saturation from surface infiltration.

**recharge rate** The quantity of water per unit of time that replenishes or refills an aquifer.

**reciprocating rake bar screen** An automatic bar screen with a single rake that is raised and lowered to clean a stationary bar rack.

**reclaimed water** Wastewater that has been treated to a level that allows for its reuse for a beneficial purpose.

**Recla-Mate®** Modular physical chemical treatment plant by USFilter/Microfloc.

**reclamation** The process of improving or restoring the condition of land or other material to a better or more useful state.

**Recla-Pac** Package biological treatment plant by USFilter/Microfloc.

**RECOjet** Gas scrubber by USFilter/Gutling.

**recombinant bacteria** A microorganism whose genetic makeup has been altered by deliberate introduction of new genetic elements, and whose offspring also contain these new genetic elements.

**recombinant DNA** The new DNA formed by combining pieces of DNA from different organisms or cells.

**recommended maximum contaminant level (RMCL)** The maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on human health would occur, including an adequate margin of safety. Recommended levels are nonenforceable health goals. See also “maximum contaminant level (MCL).”

**reconstructed source** Facility in which components are replaced to such an extent that the fixed capital cost of the new components exceed 50% of the capital cost of constructing a comparable brand new facility. New-source performance standards may be applied to sources

**record of decision (ROD)** A public document that explains which cleanup alternative(s) will be used at National Priorities List sites.

**recovery** In reverse osmosis processes, recovery indicates the amount/percentage of product water recovered from the feed stream.

**recovery rate** Percentage of usable recycled materials that have been removed from the total amount of municipal solid waste generated in a specific area or by a specific business.

**recreational waters** Any waterbody used for recreational activities such as swimming, boating, or fishing.

**Rectangulaire** Package wastewater treatment unit formerly offered by USFilter/Envirex.

**recycle ratio** The recycled flow rate divided by the influent flow rate in an activated sludge wastewater treatment system or other process system.

**recycling** The process by which recovered materials are transformed into new products. See also “water recycling.”

**red bag waste** Medical or infectious wastes.

**Red Fox** Sewage treatment systems for marine applications by Red Fox Environmental, Inc.

**Red List** A list of 23 dangerous substances, designated by the U.K., whose discharge to the water should be minimized.

**Red Rubber™** Bar screen toothed rake segments of cast urethane by Rubber Millers, Inc.

**red tide** A reddish discoloration of water caused by an excessive growth of certain microbes, whose toxins can cause massive fish kills.

**red water** Water whose reddish color usually results from the precipitation of iron salts or the presence of microbes that depend on iron or manganese.

**Red-B-Gone®** Rust and iron stain remover by Pro Products, Corp.

**redox potential** See “oxidation-reduction potential (ORP).”

**reducing agent** Any substance that can give up electrons in a reaction.

**reduction** A chemical reaction where an element or compound gains electrons causing a decrease in valence.

**Redux™** Dissolved air flotation system by ABS Pumps, Inc.

**REECO®** Product line of Dürr Environmental, Inc.

**reed** Any of a variety of tall, slender grasses grown in wet areas.

**reed bed** Tertiary wastewater treatment system where organics remaining in secondary effluent are used as nutrients in the growth of reeds. Also used for biosolids volume reduction.

**REEF®** Fine pore floor mounted diffuser by Environmental Dynamics Inc.

**Reel Auggie®** Sludge and compost mixer by Knight Manufacturing Corp.

**ReelAer** Horizontal cage surface aerator formerly offered by Walker Process Equipment.

**reentry interval** The period of time immediately following the application of a pesticide during which unprotected workers should not enter a field.

**reference dose (RfD)** The exposure level of a carcinogenic contaminant thought to be without significant risk to humans when ingested daily over a specified time period.

**reformulated gasoline (RFG)** Gasoline whose composition has been changed from conventional gasoline sold in 1990 to reduce air pollutants released from evaporation and exhaust emissions.

**Refotex** Fine bubble diffuser by Refractron Technologies Corp.

**Refractite** Ceramic filter membrane by Refractron Technologies Corp.

**refractory** A highly heat resistant material used as a liner in a furnace or incinerator.

**refractory organics** Organic substances that are difficult or unable to be metabolized in a biological system.

**refrigerant** A substance which, by undergoing a phase change, lowers the temperature of its environment. Commercial refrigerants, which include CFCs and HFCs, are liquids whose latent heat of vaporization results in cooling.

**refueling emissions** Emissions released during vehicle refueling.

**refuse** All solid waste material discarded as useless.

**refuse derived fuel (RDF)** Fuel produced from municipal solid waste through shredding, pyrolysis, or other methods.

**refuse reclamation** Conversion of solid waste into useful products, e.g., composting organic wastes to make soil conditioners and separating aluminum and other metals for recycling.

**Regal®** Gas chlorinator by Chlorinators, Inc.

**Regenair®** Regenerative air blower by Gast Manufacturing, Inc.

**regenerant** A chemical solution used to restore the exchange capacity of ion exchange resin.

**regenerate** The process of restoring exchange capacity of an ion exchange material.  
**regenerative catalytic oxidizer (RCO)** An emissions control device that utilizes a catalyst to accomplish VOC oxidation.

**Regenerative Environmental Equipment Company** Product line acquired by Dürr Environmental, Inc.

**regenerative thermal oxidizer (RTO)** An emissions control device that utilizes heat to accomplish VOC oxidation.

**Re-Gensorb™** VOC and HAP removal system by M&W Industries, Inc.

**Regional Administrator** The administrative head of each of the ten regions organized by the U.S. EPA.

**Reg-U-Flo®** Vortex valve flow control device by H.I.L. Technology, Inc.

**regulated asbestos-containing material (RACM)** Friable asbestos material or nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading or has crumbled, been pulverized, or reduced to powder in the course of demolition or renovation operations.

**regulated medical waste** Any solid waste generated in the diagnosis, treatment, immunization, or research of human beings or animals, or in the production or testing of related biological products.

**Rehydro-Floc™** Aluminum chlorohydrate flocculant solution by Reheis, Inc.

**reject** The waste stream containing impurities rejected in a treatment process, most commonly applied to reverse osmosis, electrodialysis, and ultrafiltration systems.

**reject staging** Reverse osmosis process configuration where the reject from one stage is used as feedwater on a subsequent stage to increase water recovery. Also called “brine staging.”

**rejection** In reverse osmosis, the percentage of dissolved solids removed from the feedwater as it passes through the semipermeable membrane. Also called “salt rejection.”

**relative accuracy test audit (RATA)** A comparison between an emissions stack tester’s readings and readings obtained from a CEM.

**relative humidity** The total amount of water vapor present in the air, expressed as a percentage of the maximum amount that the air could hold at a given temperature.

**release** Any occurrence where a regulated substance discharges, spills, pumps, pours, emits, injects, dumps, disposes, or escapes into the air, soil, or water.

**Reliant™** Conventional package and modular filtration product line by Roberts Filter Group.

**REM** Registered Environmental Manager.

**rem** Roentgen equivalent man. A measure of the effective radiation dose absorbed by human tissue.

**remedial action** The actual construction or implementation phase of a Superfund site cleanup that follows remedial design.

**remedial investigation and feasibility study (RI/FS)** An evaluation of the risks associated with a hazardous waste site that includes the process of selection of an appropriate remedy.

**remedial response** Long-term action that stops or substantially reduces a release or threat of a release of hazardous substances that is serious but not an immediate threat to public health.

**remediation** The treatment of waste to make it less toxic and/or less mobile, or to contain a site to minimize further release.

**Remedi-Cat™** Catalytic oxidizer by Global Technologies.

**REMS** RCRA Enforcement Management System.

**rendering plant** A plant that converts grease and livestock carcasses into fats, oils, and other products.

**renewable resource** A resource that theoretically cannot be totally consumed due to its ability to reproduce or regenerate.

**Renneburg** Sludge dryer manufacturing division of Heyl & Patterson, Inc.

**RenovAir™** Biofiltration system for VOC reduction by Envirogen.

**Reo-Pure** Reverse osmosis system by Great Lakes International, Inc.

**reportable quantity (RQ)** Quantity of a hazardous substance that triggers reports under CERCLA. If a substance exceeds its RQ, the release must be reported to the National Response Center, the SERC, and community emergency coordinators for areas likely to be affected.

**Reporter™** Multiprobe for measuring water conditions by Hydrolab Corp.

**repowering** Rebuilding and replacing major components of a power plant instead of building a new one.

**representative sample** A portion of material or water that is as nearly identical in content and consistency as possible to that in the larger body of material or water being sampled.

**reserve capacity** Extra treatment capacity built into solid waste and wastewater treatment plants and interceptor sewers to accommodate flow increases due to future population growth.

**reservoir** An artificial or natural pond, lake, basin, or tank which is used to store or control water.

**residence time** The period of time that a volume of liquid remains in a tank or system.

**residual** Amount of a pollutant remaining in the environment after a natural or technological process has taken place, including the sludge remaining after initial wastewater treatment and the particulates remaining in air after it passes through a scrubbing or other treatment process.

**residual chlorine** See “chlorine residual.”

**residual disinfectant concentration** The concentration of a disinfectant after a stated contact time. See also “C × T.”

**residual risk** The extent of health risk from air pollutants remaining after application of the Maximum Achievable Control Technology (MACT).

**residue** Solid or semisolid material remaining after processing, evaporation, or incineration.

**resin** A material having ion exchange properties used in ion exchange systems.

**resin beads** Spherical beads with ion exchange properties used in ion exchange systems.

**Resinator®** Ion exchange system by Aqualogic Inc.

**resistance** (1) In water conditioning, the opposition offered by water to the flow of electricity through which it may be used to estimate the mineral content; the reciprocal of electrical conductance. (2) For plants and animals, the inborn or acquired ability to withstand poor environmental conditions or attacks by chemicals or disease.

**resistivity** A measure of resistance to the flow of electricity, used as an accurate measure of a water's ionic purity.

**Resi-Tech** Division of Waterlink/Aero-Mod Systems.

**Resolv-R2®** Solvent recovery and waste disposal system by PBR Industries.

**Resource Conservation and Recovery Act (RCRA)** A 1976 U.S. law, amended in 1984, to regulate management and disposal of solid and hazardous wastes.

**resource recovery** The process of obtaining matter or energy from materials formerly discarded.

**respiration** Intake of oxygen and discharge of carbon dioxide as a result of biological oxidation.

**respirator** Personal respiratory protection device certified to meet minimum government performance standards.

**respirometer** An instrument used to study the character and extent of respiration.

**restoration** Measures taken to return a site to pre-violation conditions.

**Retec®** Heavy metal recovery systems offered by USFilter/Industrial Wastewater Systems.

**retentate** The portion of the feed solution rejected by the membrane in a pressure-driven membrane process.

**retention pond** A basin used for wastewater treatment and/or storage.

**retention time** The length of time water or wastewater will be retained in a unit treatment process or facility.

**Re-Therm®** Thermal VOC oxidation unit by Dürr Environmental, Inc.

**Retox™** Regenerative thermal oxidizer by Adwest Technologies, Inc.

**retrofit** Addition of a pollution control device on an existing facility without making major changes to the generating plant.

**Retroliner** Forms for filter underdrain rehabilitation by Roberts Filter Group.

**return activated sludge (RAS)** Settled activated sludge that is returned to mix with raw or primary settled wastewater.

**return sludge** See "return activated sludge (RAS)."

**reuse** Using a product or component of municipal solid waste in its original form more than once.

**reverse deionization** A deionization system having an anion exchange resin ahead of a cation exchange resin.

**reverse osmosis (RO)** A method of separating water from dissolved salts by passing feedwater through a semipermeable membrane at a pressure greater than the osmotic pressure caused by the dissolved salts.

**reversible effect** An effect which is not permanent; especially adverse effects which diminish when exposure to a toxic chemical is ceased.

**Revolver™** Rotary adsorption system for VOC abatement and solvent recovery by Vara International.

**Rex** Water/wastewater equipment product line offered by USFilter/Envirex.

**Rex Chainbelt** Former name of USFilter/Envirex.

**Reynolds number** A nondimensional number that measures the state of turbulence in a fluid system. It is calculated as the ratio of inertia effects to viscous effect.

**RF/AS** Roughing filter/activated sludge.

**RfD** See “reference dose (RFD).”

**RFG** See “reformulated gasoline (RFG).”

**RFP** Request for proposal.

**RFQ** Request for quotation.

**RHA** Rivers and Harbors Act.

**rheology** The study of the deformation and flow of substances.

**rhizosphere** The zone of intermingled roots and soil.

**RHRS** Revised Hazard Ranking System

**RI/FS** See “remedial investigation and feasibility study (RI/FS).”

**RibbonFlow™** Baffled clearwell by CBI Walker, Inc.

**ribonucleic acid (RNA)** One of two types of long-chain molecules containing hereditary material vital to reproduction.

**Rich Tech** Equipment product line by USFilter/Aerator Products.

**Richards of Rockford** Former equipment manufacturer acquired by Aqua-Aerobic Systems, Inc.

**RIFS** Remedial investigation and feasibility study.

**rift** A shallow, rapidly flowing and usually rocky area of water in a stream.

**RIGA** Former equipment manufacturer.

**Riga-Sorb™** Activated carbon adsorbers by Farr Co.

**right of free capture** The concept that groundwater belongs to the person who owns the land above it and that he is free to capture and use as much as desired.

**rill** A small channel eroded into the soil surface by runoff which can be easily smoothed or obliterated by normal tillage.

**Rim-Flo** Peripheral feed, circular clarifier by USFilter/Envirex.

**Ringelman test** A method of quantifying the opacity of an air pollution emission by comparing it to a set of standard disks having increasing degrees of discoloration from light grey (number 1) through black (number 5).

**Ringlace®** Attached growth biomedica by Ringlace Products, Inc.

**RingSparjer** Air injection diffuser by Walker Process Equipment.

**rinse** The portion of an ion exchange regeneration cycle in which fresh water is used to remove spent and excess regenerant from the resin column.

**Rio Linda®** Chlorine dioxide generator by Vulcan Performance Chemicals.

**rip rap** Broken stone or rocks placed compactly or irregularly on dams, levees, dikes, or similar embankments for protection against the action of waves or currents.

**riparian habitat** Areas adjacent to rivers and streams with a high density, diversity, and productivity of plant and animal species relative to nearby uplands.

**riparian rights** A landowner’s rights to the water on or bordering his property, including the right to prevent diversion or misuse upstream.

**Rippl diagram** A graph which plots cumulative flow versus time, and is used to design storage reservoirs and equalization basins.

**rise rate** See “overflow rate (OFR).”

**rising film evaporator** An evaporator using vertical heat transfer surfaces where liquor on one side of the surface is boiled by steam condensing on the other side, causing vapors to rise carrying the liquid upward as a film.

**risk** A measure of the probability that damage to life, health, property, and/or the environment will occur as a result of a given hazard.

**risk assessment** Qualitative and quantitative evaluation of the risk posed to human health and/or the environment by the actual or potential presence and/or use of specific pollutants.

**Risk Based Corrective Action (RBCA)** A process using the principles of exposure assessment, toxicity, and mobility to make cost-effective corrective actions on sites while protecting human health and the environment.

**risk based targeting** The direction of resources to those areas identified as having the highest potential or actual adverse effects on human health and/or the environment.

**risk factor** Characteristic (e.g., race, sex, age, obesity) or variable (e.g., smoking, occupational exposure level) associated with increased probability of a toxic effect.

**risk management** The process of evaluating and selecting alternative regulatory and nonregulatory responses to risk which requires the consideration of legal, economic, and behavioral factors.

**risk specific dose** The dose associated with a specified risk level.

**river basin** The land area drained by a river and its tributaries.

**RJ Environmental** Former name of USFilter/RJ Environmental.

**RKL**<sup>®</sup> Pinch valve by Moyno Industrial Products.

**RLL** Rapid and large leakage

**RM-10**<sup>®</sup> Clay-based flocculating agent for wastewater by Colloid Environmental Technologies Co.

**R-MAP** Regional Management Assessment Program.

**RMCL** Recommended maximum contaminant level. This term is being discontinued in favor of “MCLG.”

**RMP** “Roberts Manhattan Process.”

**RMP** Risk management plan.

**RMPR** Risk Management Program Rule.

**RMS**<sup>TM</sup> Rinsewater maintenance system by USFilter/Industrial Wastewater Systems.

**RNA** See “ribonucleic acid (RNA).”

**RO** See “reverse osmosis (RO).”

**Robo**<sup>TM</sup> Bar screen by Vulcan Industries, Inc.

**Robo Rover**<sup>TM</sup> Traversing bar screen by Vulcan Industries, Inc.

**Robo Stat**<sup>TM</sup> Stationary bar screen by Vulcan Industries, Inc.

**RoClean**<sup>TM</sup> Membrane cleaners by Avista Technologies.

**rodding** A method of cleaning tubes or sewers using long rods which are able to remove or dislodge debris.

**rodenticide** A chemical or agent used to destroy rats or other rodent pests, or to prevent them from damaging food or crops.

**RODTOX** Rapid oxygen and toxicity tester by SAMI.



**Roebelt** Belt filter press by Roediger Pittsburgh, Inc.

**Roedos** Mixing system for dry and liquid polymers by Roediger Pittsburgh, Inc.

**Roefilt** Sieve drum concentrator by Roediger Pittsburgh, Inc.

**Roeflex** Fine bubble diaphragm diffuser by Roediger Pittsburgh, Inc.

**Roemix** Lime post treatment mixing system for dewatered sludge by Roediger Pittsburgh, Inc.

**roentgen** Unit of exposure dose of X-ray or gamma radiation.

**Roepress** Belt filter press by Roediger Pittsburgh, Inc.

**Roevac** Vacuum sewage system by Roediger Pittsburgh, Inc.

**Ro-Flo**<sup>®</sup> Sliding vane compressor by A-C Compressor Corp.

**ROG** Reactive organic gas.

**Rogun** Reverse osmosis membrane cleaning solution by BetzDearborn-Argo District.

**RollAer** Aerobic digestion aeration equipment by Walker Process Equipment.

**Roll-Dry** Internally fed rotary fine screen by Schlueter Co.

**Rolling Grit** Aerated tank grit washing and removal unit by Walker Process Equipment.

**Romembra** Reverse osmosis membrane elements by Toray Industries, Inc. and Ropur AG (Europe).

**Romicon**<sup>®</sup> Hollow fiber membrane filtration products by Koch Membrane Systems, Inc.

**Romi-Kon**<sup>™</sup> Oil/water emulsion separator by Koch Membrane Systems, Inc.

**RomiPure**<sup>™</sup> Hollow fiber ultrafiltration products by Koch Membrane Systems, Inc.

**Roots** Centrifugal compressor and blower product line by Dresser Industries/Roots Division.

**Roplex** Live bottom feeder for solids and storage piles by Hindon Corp.

**Roptic**<sup>®</sup> Filter cake sensor by Rosenmund.

**RoQuest**<sup>™</sup> Reverse osmosis coagulants and flocculants by Avista Technologies.

**Rosep**<sup>™</sup> Reverse osmosis systems by Graver Co.

**Rossmark** Former name of USFilter/Rossmark.

**Rotadisc**<sup>®</sup> Sludge dryer by Atlas-Stord, Inc.

**Rotafilt**<sup>®</sup> Wastewater fabric filter by Hans Huber GmbH.

**Rotafine** Rotary fine screen by Waste-Tech, Inc.

**Rotamat**<sup>®</sup> Screening equipment product line by Lakeside Equipment Corp. (U.S.) and Hans Huber GmbH (Europe).

**rotameter** A variable area liquid flow meter.

**Rotamix** Digester mixing system combining chopper pumps and mixing nozzles by Vaughan Co., Inc.

**Rotapak** Screw type screenings compactor by Longwood Engineering Co., Ltd.

**Rota-Rake** Circular sludge collector by Graver Co.

**Rotarc** Arc-type bar screen by John Meunier, Inc.

**rotary collector** Rotating mechanisms used in circular clarifiers to collect and remove settled solids.

**rotary distributor** Rotating pipe that evenly distributes wastewater on the surface of a trickling filter.

**rotary drum screen** Cylindrical screen used to remove floatable and suspended solids.

**rotary drum thickener** Rotating cylindrical screen used to thicken sludge.

**rotary kiln incinerator** An incinerator consisting of a slowly rotating, long horizontal cylinder in which material is fed at one end and tumbled by the kiln to promote drying as it is conveyed to the other end.

**Rotasieve** Externally fed rotary fine screen by Waste-Tech, Inc.

**rotating biological contactor (RBC)** A fixed film biological treatment device where biological organisms are grown on circular discs and mounted on a horizontal shaft that slowly rotates through wastewater.

**rotavirus** An enteric virus commonly found in domestic wastewater which causes diarrhea.

**Rotex** Rotating grit removal system by Simon-Hartley, Ltd.

**Rotho®** Hose pump by USFilter/Wallace & Tiernan.

**rotifer** A very small aerobic, multicellular animal that feeds on organic matter in wastewater.

**Rotoair Disc** Submerged rotating biological contactor by Pro-Equipment, Inc.

**Rotobelt** In-channel fine screen by Dontech, Inc.

**Roto-Brush** Rotary screen brush cleaning device by Dontech, Inc.

**Roto-Channel** Combination bar screen and compacting conveyor by Dontech, Inc.

**RotoClean** Screenings washer by Parkson Corp.

**RotoClear** Microscreen formerly offered by Walker Process Equipment.

**Rotoco®** Continuous duty granular media filter by Baker Process.

**RotoDip** Manually controlled slotted pipe skimmer by Walker Process Equipment.

**Rotodip®** Volumetric feeder for liquids or slurries by BIF.

**Rotodisintegrator** Debris grinder by USFilter/Zimpro.

**Roto-Drum** Internally fed rotary fine screen and thickener by Dontech, Inc.

**Roto-Guard®** Horizontal drum screen/thickener by Parkson Corp.

**Roto-Kone®** Gravity belt thickener drainage elements by Komline-Sanderson Engineering Corp.

**Rotoline** Rotary distributor for trickling filter formerly offered by USFilter/Envirex.

**Rotomite** Sludge handling dredger by SRS Crisafulli, Inc.

**Rotopac®** Screw type screenings compactor by John Meunier, Inc.

**Rotopass** Externally fed rotary fine screen by Passavant-Roediger GmbH.

**Roto-Press** Combination rotary fine screen and dewatering press by Dontech, Inc.

**Roto-Press** Screenings compactor by Roto-Sieve AB.

**RotoPress®** Screenings compactor by Parkson Corp.

**Rotopress®** Shaftless screw compactor by Andritz-Ruthner, Inc.

**rotor** See “brush aerator.”

**Rotordisk®** Rotating biological contactor by CMS Group, Inc.

**Rotorobic** Package rotating biological contactor system by Waterlink Separations, Inc.

**Rotoscoop®** Self-cleaning volumetric feeder by Wyssmont Co., Inc.

**Roto-Scour** Sand filter underdrain system by Graver Co.

**Rotoscreen** In-channel bar screen by Waterlink Separations, Inc.

**RotoSeal** Rotary distributor for trickling filters by Walker Process Equipment.

**Roto-Sep™** Primary wastewater treatment system by Dontech, Inc.

**Rotoshear** Internally fed rotary fine screen by Waterlink Separations, Inc.

**Roto-Sieve®** Internally fed rotary fine screen by Roto-Sieve AB.

**Roto-Skim** Rotary pipe skimmer by USFilter/Envirex.

**Rotosludge®** Drum-type rotary sludge thickener by Waterlink Separations, Inc.

**RotoSorb** VOC/HAP concentrator by Waterlink/Barnebey Sutcliffe.

**Rotospir®** Shaftless screw conveyor by Andritz-Ruthner, Inc.

**Rotostep** In-channel bar screen by Waterlink Separations, Inc.

**Rotostrainer** Externally fed rotary fine screen by Waterlink Separations, Inc.

**Rotosweep** Filter media surface agitator by Roberts Filter Group.

**Rototherm®** Agitated thin film evaporator by Artisan Industries, Inc.

**Roto-Thickener™** Rotary drum sludge thickener by Dontech, Inc.

**Roto-Trak** Sludge plows or chicanes used with gravity sludge dewatering by Komline-Sanderson Engineering Corp.

**Roto-Trols** Pressure operated pump controller by Healy-Ruff Co.

**Rotox** Submersible aeration and mixing system by USFilter/Davis Process.

**rough fish** Fish not prized for eating, such as gar and suckers, which are usually more tolerant of changing environmental conditions than game species.

**roughing filter** A high-rate filter designed to receive high hydraulic or organic loading rates as a first, or intermediate, treatment step.

**route of exposure** The avenue by which a chemical comes into contact with an organism, and which may include inhalation, ingestion, dermal contact, or injection.

**ROV** Remotely operated vehicle.

**Rover** Rust removing compounds by Hach Co.

**ROWPU** Reverse osmosis water purification unit.

**Roxidizer®** VOC and air toxics control system by Tellkamp Systems, Inc.

**Royce Equipment** Screening and equipment manufacturer acquired by USFilter/Rex & Link-Belt Products.

**ROZ3** Catalyst-impregnated activated carbon by Norit Americas Inc.

**rpm** Revolutions per minute.

**RQ** See “reportable quantity (RQ).”

**RSD** Risk-specific dose.

**RSDS** Vacuum-assisted rapid sludge dewatering system by the U.S. Environmental Products, Inc.

**RSI** See “Ryznar Stability Index (RSI).”

**RSPA** Research and Special Programs Administration of U.S. Department of Transportation.

**RTECS** Registry of Toxic Effects of Chemical Substances.

**RTI Evaporator** Wastewater evaporator product line acquired by USFilter/Dewatering Systems.

**RTO** See “regenerative thermal oxidizer (RTO).”

**RTR** Reinforced thermosetting resin.

**rubbish** Combustible and noncombustible solid waste from residential and commercial sources.

**run** The time period or continuous course during which a unit operates or a test occurs.

**rundown screen** See “static screen.”

**running losses** Evaporation of motor vehicle fuels from a fuel tank while a vehicle is in use.

**runoff** Rainwater, leachate, or other liquid that drains over land and reaches a drain, sewer, or body of water.

**RUP** Restricted use pesticide.

**rupture disk** A diaphragm designed to burst at a predetermined pressure differential.

**RWH** Restricted hazardous waste.

**Ryznar Stability Index (RSI)** A scale used to evaluate the corrosion or scaling potential of water.

## S

**S&A** Sampling and analysis.

**S&L** Smith & Loveless, Inc.

**SAB** See “Science Advisory Board (SAB).”

**SAB Reactor** Package wastewater treatment plant by Biosab, Inc.

**SAC** Starved air combustion.

**SAC<sup>TM</sup>** Sludge age control system by United Industries, Inc.

**sacrificial anode** A sacrificial piece of metal, usually zinc or magnesium, electrically connected to a more noble metal in an electrolyte. The anode goes into solution at an accelerated rate to protect the more noble metal from corrosion.

**SAE** Society of Automotive Engineers.

**safe** Condition of exposure under which there is a practical certainty that no harm will result to exposed individuals.

**Safe Drinking Water Act (SDWA)** A U.S. Act assuring that public water supplies are free of contaminants which may cause health risks; it prevents endangerment of underground sources of drinking water.

**safe water** Water that does not contain harmful bacteria, toxic materials, or chemicals and is considered safe for drinking even though it may have taste, odor, color, and certain mineral problems.

**safe yield** The annual amount of water that can be taken from a source or supply over a period of years without depleting that source beyond its ability to be replenished naturally in “wet years.”

**Safgard** Rotary fine screen products by Schlueter Co.

**sag line** See “inverted siphon.”

**salination** See “salinization.”

**saline** Containing or resembling sodium chloride or similar salts.

**saline water** See “salt water.”

**salinity** (1) The concentration of dissolved salts in water. (2) The total dissolved solids in water after all carbonates and organic matter have been oxidized.

**salinization** The accumulation of salts in a soil to the extent that plant growth is inhibited, usually occurring as a result of excessive irrigation in an arid area. Also spelled “salination.”

**Salmonella** An aerobic bacteria that is pathogenic in humans and chiefly associated with food poisoning.

**Salmonellosis** A common type of food poisoning characterized by a sudden onset of gastroenteritis caused by eating food contaminated with Salmonella bacteria.

**salt** A class of ionic compounds formed by the combination of an acid and a base, of which sodium chloride is one of the most common examples.

**salt flux** The amount of dissolved substances that are able to pass through a reverse osmosis membrane.

**salt marsh** A coastal marsh periodically flooded with salt water.

**salt pan** An accumulation or layer of salts in the soil that may be toxic to agricultural crops.

**salt rejection** In reverse osmosis, the ratio of salts removed to the original salt concentration.

**salt splitting** The conversion of salts to their corresponding acids or bases, usually by means of an ion exchange system.

**salt water** Water containing a dissolved salt concentration greater than 10,000 mg/L.

**salt water intrusion** The intrusion of salt water into a body of fresh surface water or groundwater.

**salting out** A procedure in which salt is added to a solution to cause an organic compound to precipitate so that it can be physically removed.

**Salt-Master** Water softener brine reclamation system by Culligan International Corp.

**salvage** The utilization of waste materials.

**SAM™** Status alert modem to monitor disinfectant dosing system by Strantrol, Inc.

**SAM™** Surge-anoxic mix wastewater treatment technology by Fluidyne Corp.

**sampler** A device used with or without flow measurement to obtain a portion of water or waste for analytical purposes.

**sampling well** See “monitoring well.”

**Sanborn Technologies** Product line of Waterlink Biological Systems.

**sanctions** Actions taken by the federal government for failure to plan or implement a State Improvement Plan (SIP), and which may include withholding of highway funds and a ban on construction of new sources of potential pollution.

**sand** Any rock fragment between 1/16 mm and 2 mm in diameter.

**Sand Dollar** Sludge harvesting machine for sludge drying beds by Cherrington Corp.

**sand drying bed** See “sludge drying bed.”

**sand filter** See “granular media filtration.”

**Sandfloat** Combination dissolved air floatation and sand filter treatment system by Krofta Engineering Corp.

**SandPIPER®** Diaphragm pump by Warren Rupp, Inc.

**Sandsep**<sup>®</sup> Screw-type grit classifier by Spirac.

**Sandwash** Hydrocyclone by Axsia Serck Baker, Inc.

**SANE** Sulfur and nitrogen emissions.

**Sanilec**<sup>®</sup> Sodium hypochlorite generating systems by Exceltec International Corp.

**Sanilo**<sup>™</sup> Water treatment product line by USFilter Corp.

**Sani-Sieve** Gravity fed static screen by Dontech, Inc.

**sanitary connection** A single family residential connection or single commercial or industrial connection to a public water supply system.

**sanitary landfill** See “landfill (LF).”

**sanitary sewer** Collection system of underground piping used to remove sanitary wastewater.

**sanitary sewer overflow (SSO)** Overloaded operating condition of a sanitary sewer that results from inflow/infiltration.

**sanitary wastewater** Domestic wastewater without storm and surface runoff that originates from sanitary conveniences.

**San-I-Tech**<sup>™</sup> Grease interceptor by Scienco/FAST Systems.

**Sanitron**<sup>™</sup> Ultraviolet water purifier by Atlantic Ultraviolet Corp.

**SanTech** Product line of Waterlink Biological Systems.

**Sanuril**<sup>®</sup> Hypochlorite tablet disinfection system by Exceltec International Corp.

**SAP** Scientific Advisory Panel.

**Saphyr**<sup>®</sup> A sludge treatment process by USFilter.

**saponify** The conversion of a fat or grease into a soap by reaction with an alkali.

**saprophytic bacteria** Bacteria that feed on dead or nonliving organic matter.

**SAR** (1) See “sodium absorption ratio (SAR).” (2) See “supplied air respirator (SAR).”

**SARA** See “Superfund Amendments and Reauthorization Act.”

**SASS** Source assessment sampling system.

**Satellite** Electrically driven rotary distributor for fixed film reactor by Simon-Hartley, Ltd.

**Sation**<sup>®</sup> Water treatment product line by USFilter Corp.

**saturated steam** Vapor in equilibrium with water at the boiling temperature and containing no liquid.

**saturated zone** See “zone of saturation.”

**saturation** The maximum concentration of a phase or material that can be contained within another phase or another material.

**Saturation Index** See “Langelier Saturation Index (LSI).”

**SAV** Submerged aquatic vegetation.

**SAV715** Stainless steel sludge collector chain by Hitachi Maxco, Ltd.

**SavagePlate**<sup>™</sup> Molded filter underdrain by Tetra Process Technologies.

**savanna** A tropical or subtropical grassland characterized by scattered trees. Also spelled “savannah.”

**Save-All** Clarifier designed for paper mill fiber recovery by Walker Process Equipment.

**save-all** Separation device used in a paper mill to reclaim fibers and fillers from white water.

**SBA** Strong-base anion exchanger.

**SBC** Submerged biological contactor.

**SBOD** Soluble BOD. See “biochemical oxygen demand (BOD).”

**SBR** See “sequencing batch reactor (SBR).”

**SBS** See “Sick Building Syndrome (SBS).”

**SC<sup>TM</sup>** Package spray-type deaerating heater by Graver Co.

**SCADA** Supervisory control and data acquisition. The hardware and software systems that gather and control data from a remote site.

**SCADA-Flo<sup>TM</sup>** Open channel transmitter by Marsh-McBirney, Inc.

**scale** A mineral deposit or precipitate that forms on the interior surface of containers or water lines as a result of a heating or other physical or chemical change.

**Scalper<sup>TM</sup>** Inclined conveyor screening belt by Derrick Corp.

**scanning electron microscope (SEM)** A microscope with a magnification range from 20X to 200,000X at a resolution of 100 Å, where illumination is provided by a beam of electrons which scan the specimen surface.

**ScanRDI<sup>TM</sup>** Microbial detection system by Chemunex, Inc.

**scarp** A steep, almost perpendicular slope.

**Scavenger** Robotic scrubber and vacuum sludge removal system by Aqua Products, Inc.

**scavenging** (1) The unauthorized and/or uncontrolled removal of materials at any point in a solid waste management system. (2) The removal of a substance by converting it to another form or adsorbing it onto another compound.

**SCBA** Self-contained breathing apparatus.

**SCC** Source classification code.

**SCD** See “streaming current detector (SCD).”

**Scentoscreen** Portable gas chromatograph for VOC analysis by Sentex Systems, Inc.

**SCFM** Standard cubic feet per minute.

**Schistosoma** A flatworm or blood fluke that is highly parasitic to snails during one phase of its life and to humans during another.

**schistosomiasis** A waterborne disease of tropical and subtropical regions transmitted to humans who wade or bathe in water infested by *Schistosoma*, with freshwater snails acting as intermediate hosts.

**schmutzdecke** A biologically active layer that forms on the top of slow sand filters to aid in the removal of suspended solids.

**Schoop Process** Process for coating steel that uses a blast of air to spray a mist of molten metal onto the surface to be protected.

**SchreiberFlex<sup>®</sup>** Fine bubble diffuser by Schreiber Corp.

**Schumacher Filters** Former name of USFilter/Schumacher.

**Science Advisory Board (SAB)** A group of external scientists who advise the EPA on science and policy.

**scientific method** An orderly method of obtaining, organizing, and applying new knowledge.

**Scion<sup>®</sup>** Short cycle ion exchange system by USFilter/Rockford.

**Scoop-A-Fish** Traveling water screen fish collection trough by Norair Engineering Corp.

**ScorGuard<sup>®</sup>** Organic cooling tower water treatment additive by Ecolab Inc.

**Scorpion®** Ultraviolet light disinfection system by Capital Controls Co.

**scouring velocity** The minimum velocity required to carry away material accumulations in a conduit or pipeline.

**Scour-Pak®** Granular media gravity depth filter by Graver Co.

**SCOVOx™** Catalyst/adsorber technology for VOC emissions destruction by Goal Line Environmental Technologies.

**SCR** (1) See “selective catalytic reduction (SCR).” (2) Silicon controlled rectifier.

**scrap** Materials discarded from manufacturing operations that may be suitable for reprocessing.

**screening** (1) A treatment process using a device with uniform openings to retain coarse solids. (2) A preliminary test method used to separate according to common characteristics.

**screenings** The material removed by a screening device.

**screenings press** A mechanical press used to compact and/or dewater material removed from mechanical screening equipment.

**Screenings Washer Monster™** Washer/grinder for wastewater screenings by JWC Environmental.

**Sreezer** Combination screening and dewatering device by Waste-Tech, Inc.

**screw conveyor** A conveyor utilizing a helical screw rotating within a trough to convey material.

**screw pump** A low lift, high capacity pump that raises water by means of a slowly rotating inclined shaft fitted with a helical blade which revolves in a trough or pipe. Also known as “Archimedes’ screw pump.”

**Screweller™** Centrifugal screw impeller used in a surface aerator by Aeration Industries, Inc.

**scroll centrifuge** See “solid bowl centrifuge.”

**scrubber** A device used to removal particulates or pollutant gases from combustion or chemical process exhaust streams.

**scrubbing** The removal of impurities from an air or gas stream by entraining the pollutants in a water spray.

**ScruPac™** Screw-typed screenings compactor by Vulcan Industries, Inc.

**Scru-Peller®** Sludge pump by Yeomans Chicago Corp.

**SCSA** Soil Conservation Society of America.

**SCUBA™** Filter underdrain by USFilter/General Filter.

**SCUBA™** Self-contained gate and valve actuator by Rodney Hunt Co.

**scum** Floatable materials found on the surface of primary and secondary settling tanks consisting of food wastes, grease, fats, paper, foam, and similar matter.

**scum breaker** A device installed in a sludge digester to break up scum.

**scum collector** A mechanical device for removing scum from the surface of a settling tank.

**Scum Sucker™** Telescopic pipe for scum removal by United Industries, Inc.

**scum trough** A trough used in a primary sedimentation basin to remove scum and convey it from the basin.

**Scumbuster™** Pump used to chop solids in a digester scum blanket by Vaughan Co., Inc.



**SCWO** See “supercritical water oxidation (SCWO).”

**SDI** Strategic Diagnostics, Inc.

**SDI** See “Silt Density Index (SDI).”

**SDWA** See “Safe Drinking Water Act (SDWA).”

**sea** A large body of salt water that is wholly or partly enclosed by land.

**Sea Cell** In-situ sodium hypochlorite generator by Baker Hughes Process Systems.

**Sea Devil** Floating oil skimmer by Vikoma International Ltd.

**sea lettuce** Common seaweed that can grow in nuisance concentrations in the presence of excess nutrients.

**sea level** The average surface level of the sea, uninfluenced by tidal movement or waves, used as a reference for elevation.

**Sea Screen** Seawater filtration system by Baker Hughes Process Systems.

**Sealtrode** Sealed pump controller by Yeomans Chicago Corp.

**Seaskimmer** Floating oil skimmer by Vikoma International Ltd.

**seawall** A wall built to protect a coastline from erosion, and caused by wave action.

**seawater** General term for sea or ocean water, with a typical total dissolved solids concentration of 35,000 mg/L.

**Secchi disk** A small disk, divided into black and white quadrants, that is lowered into water to visually observe water clarity and estimate the depth of the euphotic zone.

**Secchi disk depth** The water depth at which a Secchi disk is no longer visible. In a lake, this depth is approximately equal to the euphotic zone.

**Secodyne** Product group of Polydyne, Inc.

**second order reaction** A reaction in which the rate of change is proportional to the square of the concentration of one of the reactants or to the product of the concentrations of two different reactants.

**second stage biochemical oxygen demand** See “nitrogenous oxygen demand (NOD).”

**secondary clarifier** A clarifier following a secondary treatment process designed for gravity removal of suspended matter.

**secondary contaminant** A contaminant that affects drinking water taste, odor, or aesthetics.

**secondary drinking water regulations** Nonenforceable regulations applying to public water systems and specifying the maximum contamination levels that, in the judgment of the EPA, are required to protect the public welfare, and which apply to any contaminants that may adversely affect the odor or taste.

**secondary effluent** Treated wastewater leaving a secondary treatment facility, usually having a BOD<sub>5</sub> and suspended solids of less than 30 mg/L.

**secondary emissions** Emissions that occur as a result of the construction or operation of a facility but do not come from the facility.

**secondary materials** Materials that have been manufactured and used at least once and are to be used again.

**secondary maximum contaminant levels (SMCLs)** Guidelines that address taste, odor, color, and other aesthetic aspects of drinking water but do not present health risks.

**secondary pollutant** A pollutant formed in the environment as the result of a chemical reaction of two or more primary pollutants or naturally occurring elements.

**secondary sludge** The sludge from the secondary clarifier in a wastewater treatment plant.

**secondary standards** National ambient air quality standards designed to protect welfare, including effects on soils, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility, and climate.

**secondary treatment** The treatment of wastewater through biological oxidation after primary treatment.

**second-stage BOD** See “nitrogenous biochemical oxygen demand (NBOD).”

**secure landfill** Landfill which segregates and isolates hazardous materials from contacting each other, the groundwater, or the atmosphere.

**secure maximum contaminant level** Maximum permissible level of a contaminant in water delivered to the free flowing outlet of the ultimate user, or of contamination resulting from corrosion of piping and plumbing caused by water quality.

**Sedifloat** Water and wastewater treatment unit by Krofta Engineering Corp.

**Sediflotator®** Dissolved air flotation unit by Infilco Degremont, Inc.

**sediment** The solid material that settles from a liquid.

**sediment yield** The quantity of sediment arriving at a specific location.

**sedimentation** The removal of settleable suspended solids from water or wastewater by gravity in a quiescent basin or clarifier.

**sedimentation basin** A quiescent tank used to remove suspended solids by gravity settling. Also called clarifiers or settling tanks, they are usually equipped with a motor driven rake mechanism to collect settled sludge and move it to a central discharge point.

**SEE** Schloss Engineered Equipment.

**seed** (1) Crystalline particles added to a supersaturated solution to induce precipitation. (2) Well-digested sludge used to seed a sludge digester.

**seepage** Percolation of water through the soil from unlined canals, ditches, laterals, watercourses, or water storage facilities.

**seepage pit** A covered excavation that receives septic tank effluent and permits its effluent to seep through the bottom and sides of the excavation.

**seepage spring** A spring occurring where the water table breaks the ground surface. Also called a “gravity spring.”

**Seghers Pelletech®** Indirect sludge dryer and pelletizing unit by Wheelabrator Water Technologies, Inc.

**Seghodryer** Indirect contact sludge dryer by Seghers Better Technology USA.

**selective catalytic reduction (SCR)** Flue gas treatment process for the removal of NOX by reduction with ammonia to form elemental nitrogen and water.

**selective pesticide** A chemical designed to affect only certain types of pests, leaving other plants and animals unharmed.

**Selectofilter** Revolving drum screen strainer by USFilter/Diffused Air Products Group.

**Selector Plug Flow™** Biological wastewater treatment process by USFilter/Industrial Wastewater Systems.

**Selectotrainer** In-line strainer formerly offered by USFilter/Headworks Products.

**Selex®** Graded density cartridge filters by Osmonics, Inc.

**self-sustaining** The point at which a process provides sufficient energy to operate without the need for supplementary fuel.

**SelRO®** Membrane filtration systems by LCI Corp.

**SEM** See “scanning electron microscope (SEM).”

**semi-confined aquifer** An aquifer partially confined by soil layers of low permeability through which recharge and discharge can still occur.

**semipermeable** A membrane that does not have measurable pores, but through which smaller molecules can pass.

**senescence** The aging process sometimes used to describe lakes or other bodies of water in advanced stages of eutrophication.

**senescent lake** A very old lake, practically full of sediment and rooted water plants, which will eventually become a marsh.

**sensible heat** Heat measurable by temperature alone.

**Sension™** Water analyzer meter by Hach Co.

**sensitivity** The ability of a unit or instrument to respond to a small difference in values.

**Sentine™** Filter backwash control system by Roberts Filter Group.

**Sentre-Fier** Rotary fine screen by Dontech, Inc.

**Sentry** Groundwater gasoline recovery system by Douglas Engineering.

**Sentry-II®** VOC sampler by BIOS International Corp.

**SEPA®** Reverse osmosis membranes by Osmonics, Inc.

**Separator-Plus™** Parallel plate separator by USFilter/Davco.

**SepraEight®** Deep bed condensate polisher by Graver Co.

**sepralators** Membrane elements.

**septage** The settled solids produced in individual on-site wastewater treatment systems including septic tanks and cesspools.

**septic** Condition characterized by bacterial decomposition under anaerobic conditions.

**septic system** An onsite system designed to treat and dispose of domestic wastewater typically consisting of a tank that receives waste from a residence or business and a system of tile lines or a pit for disposal of the sludge that remains after decomposition of the soluble organic matter.

**septic tank** A domestic wastewater treatment device principally used for individual residences that combines sedimentation, sludge digestion, and sludge storage in a single or dual compartmented tank. See also “septic system.”

**septicity** The condition that results from biological degradation of organic matter in wastewater under anaerobic conditions, usually producing hydrogen sulfide or other odorous compounds.

**Septra™** Pleated backwash filters by Pall Corp.

**septum** A permeable material used to support filter medium.

**sequencing batch reactor (SBR)** Treatment process characterized by the interruption of flow to the reactor during the sedimentation and decanting phase of treatment.

**Sequest-All** Sequestering agent used to control iron scaling and corrosion by Sper Chemical Corp.

**sequestering agent** A chemical compound such as EDTA that binds with other compounds or ions so they cannot be involved in chemical reactions. See also “chelating agent.”

**sequestration** The formation of a stable, water soluble complex with an ion in solution to prevent precipitation or scaling. See also “chelation.”

**Sequox™** Biological wastewater treatment process for nutrient removal by Waterlink/Aero-Mod Systems.

**Seral®** Laboratory water treatment product line by USFilter/Lowell.

**Serck Baker** Former name of Axsia Serck Baker, Inc.

**Ser-Ductor®** Air-free agitation system by Serfilco, Ltd.

**Serfilco®** Wastewater treatment equipment products by Serfilco, Ltd.

**seroepidemiology** The measuring of serum antibodies to specific pathogens in a population.

**serogroup** A group of closely related organisms having one or more common antigens.

**Serpentix®** Convoluted, self-cleaning belt conveyor by Serpentix Conveyor Corp.

**service connector** The pipe that carries tap water from a public water main to a building.

**service factor (SF)** A multiplier that when applied to the rated power indicates the permissible power loading that may be carried under the conditions specified.

**service line sample** A one-liter sample of water collected according to federal regulations that has been standing for at least 6 hours in a service pipeline.

**service pipe** The pipeline extending from the water main to the building served or to the consumer’s system.

**SES** Secondary emissions standard.

**Sessil®** Polyethylene strip media for trickling filters by NSW Corp.

**SETLdek** Clarifier tube settlers by Brentwood Industries, Inc.

**setpoint** An input value to be maintained by a control device.

**settleability** The tendency of suspended solids to settle.

**settleable solids** That portion of suspended solids which are of a sufficient size and weight to settle to the bottom of an Imhoff cone in 1 hour.

**settled sludge volume (SSV)** Volume of settled sludge measured at predetermined time increments for use in process control calculations.

**settling chamber** A series of screens placed in the way of flue gases to slow the stream of air, thus helping gravity to pull particles into a collection device.

**settling tank** A quiescent tank used to remove suspended solids by gravity settling. Also called clarifiers or sedimentation basins, they are usually equipped with a motor driven rake mechanism to collect settled sludge and move it to a central discharge point.

**settling tubes** See “tube settlers.”

**settling velocity** The rate at which a particle settles through air or water.

**7Q10** An abbreviation for a design stream flow rate describing the lowest stream flow for 7 consecutive days that would be expected to occur once in 10 years. See also "xQy."

**sewage** See "wastewater."

**sewage fungus** Common term for filamentous mass of fungi and bacteria resulting from high organic loadings that can clog or reduce efficiency of waste treatment equipment.

**sewer** Collection system of underground piping used to remove wastewater.

**Sewer Chewer™** Comminuter/sludge grinder by Yeomans Chicago Corp.

**sewer gas** A gas mixture produced by anaerobic decomposition of organic matter usually containing high percentages of methane and hydrogen sulfide.

**sewerage** The entire system of wastewater collection, treatment, and disposal.

**sewershed** Land area that drains into a sewer.

**SF** See "service factor (SF)."

**SFA** Spectral flame analyzer.

**SFT™** Sediment flushing tank by John Meunier, Inc.

**ShallowTray** Aeration system for removal of volatile organics by Northeast Environmental Products, Inc.

**Shann-No-Corr** Zinc metaphosphate corrosion inhibitor and sequestering agent by Shannon Chemical Corp.

**Sharples®** Division of Alfa Laval Separation, Inc.

**sharps** Hypodermic needles, pipettes, scalpel blades, blood vials, needles with attached tubing, broken or unbroken glass, and culture dishes used in animal or human patient care or treatment, or in medical, research, or industrial laboratories.

**Sharpshooter** Polymer feed and control system by Norchem Industries.

**Shartles** Product line by Thermal Black Clawson.

**Shearfuser** Cast iron diffuser for anaerobic digestion by USFilter/Diffused Air Products Group.

**sheet flow** Overland stormwater flow in a thin sheet of uniform thickness.

**shell-and-tube heat exchanger** A tubular heat exchanger housed within the shell of a pressure vessel.

**sherardizing** A process for protecting iron from corrosion by means of a corrosion resistant layer of zinc on the iron surface.

**Shigella** A bacterium associated with dysentery that is transmitted through consumption of water or food contaminated with fecal matter.

**shigellosis** A gastrointestinal disorder usually caused by food or waterborne organisms of the genus *Shigella*.

**shock load** A sudden hydraulic or organic load to a treatment plant.

**shore** (1) The land bordering a body of water. (2) To brace or give support.

**short circuiting** Uneven flow through a vessel that results from density currents or inadequate mixing which allows some currents to leave the vessel more quickly than others.

**short term exposure limit (STEL)** The maximal allowable level of a material in workplace air, usually measured over a 15-minute period.

**short ton** See “ton.”

**Shriver®** Plate and frame filter press by Baker Process.

**shute** The horizontal wire in woven wire mesh, also called the “weft” wire.

**SHWL** Seasonal high water level.

**SI unit** The international system of units (Système International) largely based on the metric system used for measuring length, mass, volume, and radiation.

**SIC** See “Standard Industrial Classification (SIC).”

**sick building syndrome (SBS)** Condition in which at least 20% of a building’s occupants display symptoms of illness for more than 2 weeks and the source of the illness cannot be positively identified.

**side hill screen** See “static screen.”

**side water depth (SWD)** The depth of water measured along a vertical interior wall of a basin or tank.

**Side Winder** Environmental screens by Cook Screen Technologies, Inc.

**SideCar™** RBC aeration system by Jones MacCrea, Inc.

**siderite** A mineral of ferrous carbonate.

**sidewall** The wall at the side of a structure.

**Sidewall Separator** In-channel clarifier for an oxidation ditch by Lakeside Equipment Corp.

**sieve analysis** A size distribution analysis of a filter sand sample using a series of standard sieve screens.

**sieve size** The standard sieve size through which a sample of sand will pass.

**sievert** Unit of radiation equal to the amount that produces the same damage to humans as 1 roentgen of high voltage X-rays.

**SightWell** Circular clarifier with hydraulic suction type sludge removal system by Walker Process Equipment.

**Sigma** Low speed surface aerator by Purestream, Inc.

**Sigma Flight** Fiberglass sludge collector flight by USFilter/Envirex.

**signal words** The words used on a pesticide label — “Danger, Warning, Caution” — to indicate level of toxicity.

**significant deterioration** Pollution resulting from a new source in previously “clean” areas. See “prevention of significant deterioration (PSD).”

**significant municipal facilities** Those publicly owned sewage treatment plants that discharge a million gallons per day or more and are therefore considered by states to have the potential to substantially affect the quality of receiving waters.

**significant violations** Violations by point source dischargers of sufficient magnitude or duration to be a regulatory priority.

**SIHI Pumps** Former name of Sterling Fluid Systems (USA).

**SIHI-Halberg** Digester draft tube sludge mixer by SIHI Pumps, Inc.

**Silent Pump** Portable sewage pumping station by Gorman-Rupp Co.

**silica** A mineral composed of silicon and oxygen.

**silicate** Any compound containing silicon, oxygen, and one or more metallic compounds.

**siliceous** Composed of or containing silica or a silicate compound.

**siliceous gel zeolite** A synthetic hydrated sodium aluminosilicate with ion exchange properties, once widely used in ion exchange water softeners. See also “gel zeolite.”

**silicosis** A lung disease caused by prolonged inhalation of silica dust which results in fibrosis or scarring of lung tissue.

**Sil-Kleer®** Filter aid by Silbrico Corp.

**silo** A tall, cylindrical storage vessel for dry solids.

**Silo Pac** Chemical feed system by USFilter/Wallace & Tiernan.

**Siloda™** High rate sludge composting process by USFilter/Krüger (North America) and OTV.

**silt** Individual mineral particles ranging in size between fine sand and clay.

**silt density index (SDI)** A measure of the fouling tendency of water based on the timed flow of a liquid through a membrane filter at a constant pressure.

**silting** The deposition of silt or sediment in a waterbody.

**silviculture** Forest management for the cultivation and harvest of timber.

**Silver Band** Granular media pressure filter by Baker Hughes Process Systems.

**Silver Series™** Membrane diffuser by Sanitaire Corp.

**Silverback™** Aqueous cleaner recovery system using ceramic membrane filters by USFilter/Industrial Wastewater Systems.

**silviculture** Management of forest land for timber.

**Simcar®** Turbine aerator by United Industries, Inc.

**Simplex** Low speed surface mechanical aerators by USFilter/Asdor.

**Simplex™** Single module air scrubber by USFilter/Davis Process.

**Sim-Pre™** Biological nutrient removal process for wastewater treatment by USFilter/Envirex.

**Simrake** Rotary bar screen by Simon-Hartley, Ltd.

**Simspray** Rectangular distributor for fixed film reactor by Simon-Hartley, Ltd.

**Simultech™** Biological nutrient removal system by Schreiber Corp.

**Simul-Wash™** Simultaneous air/water filter backwash system by Tonka Equipment Co.

**Sinclair** Internally fed rotary fine screen by Bielomatik London, Ltd.

**sink** Place in the environment where a compound or material collects.

**sinking** Controlling oil spills by using an agent to trap the oil and sink it to the bottom of the body of water where the agent and the oil are biodegraded.

**sinter** To bond and partly fuse masses of metal particles together through the use of heat below the melting point, without actually liquefying.

**SIP** See “State Implementation Plan (SIP).”

**siphon** A closed conduit, a portion of which lies above the hydraulic grade line, resulting in a pressure less than atmospheric and requiring a vacuum within the conduit to start flow.

**SITE** See “Superfund Innovative Technology Evaluation (SITE).”

**site assessment program** A means of evaluating hazardous waste sites through preliminary assessments and site inspections to develop a Hazard Ranking System score.

**Sitepro™** Remediation site control system by Geotech ORS Environmental Equipment.

**siting** The process of choosing a location for a facility.

**SIU** Significant industrial user.

**Siverseries™** Packaged desalination system by Matrix Desalination, Inc.

**SK®** Variable area flowmeter by McCrometer, Inc.

**skid mounted** Equipment or equipment packages mounted on a horizontal structure or platform to facilitate handling and/or installation.

**Skim-Kleen®** Oil removal belt skimmer by Tenco Hydro, Inc.

**skimming** The process of removing or diverting water and/or floating matter from the surface of a liquid.

**Skim-Pak™** Floating, self-adjusting weir skimmer by Douglas Engineering.

**Skim-Pak™** Floating skimmer by ABS Pumps, Inc.

**skip** Bar screen cleaning rake.

**SKRAM** Acoustic fish behavioral control device by USFilter/Rex & Link-Belt Products.

**SL™** Granular media filter underdrain by F.B. Leopold Co., Inc.

**slag** Waste residues produced by metal smelting and coal gasification.

**slake** The process of mixing lime with water to accomplish a chemical combination.

**slaked lime** See “hydrated lime.”

**slash and burn** An agricultural practice where vegetation is cut, allowed to dry, and burned prior to soil cultivation and planting.

**Slide Gate** Screenings press by Andritz-Ruthner, Inc. (Western Hemisphere) and USFilter/Contra-Shear.

**slime** (1) Substances of a viscous organic nature, usually formed from a microbiological growth, which attach themselves to other objects, forming a coating. (2) The coating of biomass that accumulates in trickling filters or sand filters and periodically sloughs away to be collected in clarifiers.

**Slinger®** Sludge spreader by Knight Manufacturing Corp.

**Slo-Mixer** Axial flow paddle flocculators by USFilter/Envirex.

**slop oil** Separator skimmings and tramp oil generated during refinery startup, shutdown, or abnormal operation.

**slough** A swamp, bog, or marsh, especially if part of an inlet or backwater.

**sloughing** The disattachment of accumulated biological solids from trickling filter media.

**slow sand filter** Sand filter characterized by low flow rates relying on the formation of a layer of solids on the top of the sand bed to accomplish most of the filtration.

**sludge** Accumulated and concentrated solids generated within the wastewater treatment process that have not undergone a stabilization process.

**sludge age** The average time microbial cell remains in an activated sludge system. It is equal to the mass of cells divided by the rate of cell wasting from the system.

**Sludge Age Controller™** Sludge age control system by United Industries, Inc.

**sludge blanket** The accumulated sludge hydrodynamically suspended in a clarifier or other enclosed body of water.



**sludge bulking** A phenomenon that occurs in activated sludge plants where a sludge does not readily settle or concentrate.

**sludge cake** Dewatered residue from a filter press, centrifuge, or other sludge dewatering device.

**sludge collector** Mechanisms used in clarifiers to collect and remove settled solids from the tank bottom.

**sludge conditioning** See “conditioning.”

***Sludge Detention Optimizer*<sup>TM</sup>** Sludge thickening/conditioning process by Don-tech, Inc.

**sludge dewatering** The removal of a portion of the water contained in sludge by means of a filter press, centrifuge, or other mechanism.

**sludge digestion** See “digestion.”

**sludge dryer** A device utilizing heat for the removal of a large portion of water within sludge.

**sludge drying bed** A partitioned area consisting of sand or other porous material upon which sludge is dewatered by drainage and evaporation. Also known as “drying bed” or “sand drying bed.”

***Sludge Expert*** Automatic belt press control and management system by Alpine Technology, Inc.

***Sludge Gun*<sup>®</sup>** Sludge level detector by Markland Specialty Engineering, Ltd.

***Sludge Guzzler*** Hydraulically driven sludge pump by Guzzler Manufacturing, Inc.

***Sludge Mate*<sup>TM</sup>** Container filter by Flo Trend Systems, Inc.

**sludge stabilization** A treatment process to convert sludge to a stable product for ultimate disposal or use and reduce pathogens to produce a less odorous product.

***Sludge Sucker*<sup>TM</sup>** Clarifier sludge removal device by USFilter/General Filter.

**sludge volume index (SVI)** The volume in milliliters occupied by 1 gram of settled sludge after settling for 30 minutes in a graduated cylinder.

***Sludgebuster*<sup>TM</sup>** Sewage shredder by ZMI/Portec Chemical Processing.

***SludgeCleaner*<sup>®</sup>** Sludge and scum screen and compactor by Parkson Corp.

***SludgeMaster*<sup>®</sup>** Sludge dryer by USFilter/Davis Process.

***SludgeMaster*<sup>®</sup>** Submersible air-powered pump by Warren Rupp, Inc.

***SludgeMIZER*** Sludge dryer by Fen-Tech Environmental, Inc.

***Sludgepactor*** Sludge screen and compactor by Waste-Tech, Inc.

***SludgePress*<sup>TM</sup>** Biosolids dewatering products by Enviroquip, Inc.

***Sludgifier*** Lagoon dredge by VMI Inc.

***Sludglite*<sup>®</sup>** Sludge blanket level detector by Ecolotech Corp.

**slug load** A sudden hydraulic or organic load to a treatment unit.

**sluice gate** Manual or power-operated gate used to isolate a channel from flow.

**slurry** A suspension of a relatively insoluble chemical in water, usually having a suspended solids concentration of 5000 mg/L or more.

***Slurrycup*<sup>TM</sup>** Grit removal system by Eutek Systems, Inc.

***Slurrystore*<sup>®</sup>** Slurry storage system by A.O. Smith Engineered Storage Products.

**small calorie (cal)** See “calorie.”

**small quantity generator (SQG)** A generator of between 100 and 1000 kg/month of hazardous wastes. Sometimes called a “squeegee.”

**small-quantity handlers (SQHs)** Universal waste handlers who accumulate up to 5000 kilograms of wastes.

**Smart Skimmer** Oil removal system by Douglas Engineering.

**SmartFilter™** Traveling bridge filter by Agency Environmental, Inc.

**SmartRO™** Reverse osmosis system by Water and Power Technologies.

**SMBS** Sodium metabisulfite.

**SMCL** Secondary maximum contaminant level.

**SMCLs** EPA-mandated maximum contaminant level in drinking water based on taste, odor, or aesthetics.

**SMCRA** See “Surface Mining Control and Reclamation Act (SMCRA).”

**smelter** A facility that melts or fuses ore, often with an accompanying chemical change, to separate its metal content.

**SMOA** Superfund Memorandum of Agreement.

**smog** A type of air pollution characterized by reduced visibility due to atmospheric particulates and elevated levels of photochemical oxidants.

**Smogless™** Wastewater treatment and sludge drying and incineration plants by USFilter/Smogless.

**smoke** The suspended matter in an exhaust emission which obscures the transmission of light.

**smoke number (SN)** A dimensionless term quantifying smoke emissions.

**Smooth-tex** Rectangular woven mesh for screening equipment by USFilter/Rex & Link-Belt Products.

**SMSA** Standard metropolitan statistical area.

**SMX** Belt filter press by Andritz-Ruthner, Inc.

**SN** See “smoke number (SN).”

**SNAAQS** Secondary National Ambient Air Quality Standards.

**Snail** Grit dewatering system by Eutek Systems, Inc.

**SNARL** Suggested no adverse response level.

**SNC** Significant noncompliers.

**Snowflake Packing** Plastic packing media for air stripping applications by Norton Co.

**SO<sub>2</sub>** Sulfur dioxide.

**SOC** See “synthetic organic chemicals (SOC).”

**SOCMA** Synthetic Organic Chemical Manufacturers Association.

**SOCMI** Synthetic organic chemical manufacturing industry.

**SOD** Sediment oxygen demand.

**soda ash** See “sodium carbonate.”

**sodium absorption ratio (SAR)** An expression describing the relative activity of sodium ions in exchange reactions with soil.

**sodium aluminate** An auxiliary coagulant used in water treatment. Chemical formula is Na<sub>2</sub>Al<sub>2</sub>O<sub>4</sub>.

**sodium bisulfite** A liquid dechlorinating agent. Chemical formula is NaHSO<sub>3</sub>.

**sodium carbonate** A compound often used in water softening operations, also called “soda ash.” Chemical formula is Na<sub>2</sub>CO<sub>3</sub>.

**sodium chloride** The chemical name for common salt. Chemical formula is NaCl.

**sodium cycle exchange** Ion exchange water softening process in which sodium on the ion exchange resin is exchanged for hardness and other ions in water. Sodium chloride is commonly used as the regenerant.

**sodium hexametaphosphate (NaHMP)** An alkaline metallic element which is water soluble and commonly used as a sequestering or dispersing agent.

**sodium hydroxide** Caustic soda. Chemical formula is NaOH.

**sodium hypochlorite** A liquid chlorine solution frequently used as a water or wastewater disinfectant. Chemical formula is Na(OCl)<sub>2</sub>.

**sodium metabisulfite** A crystalline form of sulfur dioxide used to remove chlorine. Chemical formula is Na<sub>2</sub>S<sub>2</sub>O<sub>5</sub>.

**sodium sulfite** An oxygen scavenger used in boiler and cooling water systems. Chemical formula is Na<sub>2</sub>SO<sub>3</sub>.

**sodium-free water** Bottled water containing less than 5 milligrams of sodium per serving.

**soft detergents** Cleaning agents that break down in nature. See also “linear alkyl sulfonate (LAS).”

**soft water** Any water containing less than 17.1 mg/L (1 gpg) of calcium or magnesium expressed as calcium carbonate.

**softening** Treatment process that involves the removal of calcium and magnesium ions from water.

**SOG** Stripper off-gas.

**soil** The combination of mineral and organic matter that supports plant life on the surface of the earth.

**soil adsorption field** A sub-surface area containing a trench or bed with clean stones and a system of piping through which treated sewage may seep into the surrounding soil for further treatment and disposal.

**soil conditioner** An organic material like humus or compost that helps soil absorb water, build a bacterial community, and take up mineral nutrients.

**soil erodibility** A measure of the soil’s susceptibility to raindrop impact, runoff, and other erosional processes.

**soil flushing** In-situ remediation technique where large volumes of water or other solutions are injected into the soil or groundwater to flush hazardous contaminants to a recovery point.

**soil gas** Gaseous elements and compounds in the small spaces between particles of the earth and soil. Such gases can be moved or driven out under pressure.

**soil horizon** A zone or layer within a soil made distinctive by its color, texture, or mineral content.

**soil sterilant** A chemical that temporarily or permanently prevents the growth of all plants and animals depending on the chemical.

**soil vapor extraction (SVE)** Technique to remove VOCs and promote bioremediation of compounds in unsaturated soils.

**Sokalan®** Antiscalant for desalination of seawater by BASF.

**sol** Colloidal dispersion of solids in liquid.

**solar constant** The rate that the sun’s radiant energy is received per unit area on a horizontal surface at the top of the earth’s atmosphere.

**solar pond** Pond used to accomplish evaporation via direct solar heating.

**solar still** A distillation device that utilizes solar energy.

**solder** Metallic compound used to seal joints between pipes, and until recently, usually contained 50% lead. Use of lead solder containing more than 0.2% lead is now prohibited for pipes carrying drinking water.

**sole-source aquifer** An aquifer that supplies 50% or more of the drinking water of an area.

**solid bowl centrifuge** Continuous operation centrifuge consisting of a cylindrical, tapered bowl and an internal helical scroll, both revolving at slightly different speeds to separate solids from water by means of a centrifugal force. Also called “scroll centrifuge” or “decanter.”

**solid waste** Garbage, refuse, sludge, and other discarded material resulting from community activities or commercial or industrial operations.

**solid waste disposal** The final placement of refuse that is not salvaged or recycled.

**solid waste management** Supervised handling of waste materials from their source through recovery processes to disposal.

**Solidex** Screw press system by Hosokawa Bepex Corp.

**solidification** A process where materials are added to waste to produce a solid.

**solidification and stabilization** Removal of wastewater from a waste or the chemical change that makes it less permeable and susceptible to transport by water.

**solids balance** A mathematical representation of a treatment system that defines the amount of solids entering and exiting each unit treatment process.

**solids contact clarifier** A clarifier in which liquid passes upward through a solids blanket and discharges at or near the surface.

**solids retention time (SRT)** The mass of solids in a vessel (kg) divided by the solids removed (L/d).

**Solidur** UHMW polyethylene components for chain and flight sludge collectors by Solidur Plastics Co.

**Soliquator** Clarification unit by Orival, Inc.

**Solo™** Controllerless downwell cleanup pumps by QED Environmental Systems, Inc.

**Solu Comp®** Water measurement instrument by Rosemount Analytical, Inc.

**solubility** The amount of a substance that can dissolve in a solution under a given set of conditions.

**solubility product** The equilibrium constant that describes the reaction by which a precipitate dissolves in pure water to form its constituent ions.

**soluble** Capable of being dissolved in a fluid.

**solum** The upper layers of soil including the top soil (A-horizon) and intermediate soil (B-horizon).

**solute** A substance dissolved in a fluid.

**solution** A liquid that contains dissolved solute.

**Solvay Interlox** Product group of Solvay America.

**Solvay Minerals** Product group of Solvay America.

**solvent** Liquid capable of dissolving or dispersing one or more substances.

**solvent extraction** The process of selectively extracting a liquid constituent from a wastewater using an organic solvent. Also called “liquid-liquid extraction (LLE).”

**Solvo-Salvager®** Vacuum assisted distillation equipment by Westport Environmental Systems.

**Som-A-System®** Sludge thickening process by Somat Corp.

**son** A subjectively determined unit of the loudness of a sound.

**Sonix 100** Tank-mounted chlorinator by USFilter/Wallace & Tiernan.

**Sonozaire™** Electronic odor control device by Howe-Baker Engineers, Inc.

**soot** Carbon dust formed by incomplete combustion.

**sorbent** A solid material used to concentrate dissolved solids.

**Sorb-N-C™** Packaged stack gas sorbent by Church & Dwight Co. Inc.

**Sorbond®** Sludge stabilizer by Colloid Environmental Technologies Co.

**sorption** The concentration of dissolved solids through absorption or adsorption on a solid.

**SOS** Stormwater overflow screens by John Meunier, Inc.

**SOTE** Standard oxygen transfer efficiency.

**sough** A ditch used to drain mine water.

**SOUR** See “specific oxygen uptake rate (SOUR).”

**sour environment** Environment containing significant amounts of hydrogen sulfide.

**sour gas** Natural gas containing impurities such as hydrogen sulfide which give the gas an acrid odor.

**sour water** Water containing hydrogen sulfide or other malodorous compounds.

**source** The point of origin or part of a facility that generates or releases an excess of a substance.

**Southern Oscillation** A circulation pattern in the atmosphere that brings low pressure to the eastern Pacific and high pressure to the Indian Ocean. See also “El Niño/Southern Oscillation (ENSO).”

**SOx** See “sulfur oxides (SOX).”

**Soxhlet Extraction Method** An extraction process using trichlorofluoroethane to determine the oil and grease content in a liquid.

**SoyGold®** Biodegradable, nontoxic solvent by Ag Environmental Products LLC.

**sparingly soluble compounds** Term used to describe compounds with solubility ranges from near zero to a few thousand milligrams per liter.

**Sparjair** Package wastewater treatment plant by Walker Process Equipment.

**Sparjer** Aeration products by Walker Process Equipment.

**SparjLift** One- or two-level air injection pump by Walker Process Equipment.

**sparkling water** Carbonated water for which the carbon dioxide content comes from the same source as the water.

**SPCC** (1) Spill prevention control and countermeasures. (2) Spill prevention, containment, and countermeasure.

**SPCCP** See “Spill Prevention Control and Countermeasures Plan (SPCCP).”

**SPE** Secondary particulate emissions.

**special waste** Items such as household hazardous waste, bulky wastes including refrigerators and pieces of furniture, and tires or used oil.

**species** A population of similar organisms that interbreed among themselves.

**specific conductance** The measure of electrical conductance of water or a water solution and the reciprocal of specific resistance. Usually stated in micromhos per cm.

**specific gravity** The ratio of the density of a substance to the density of water.

**specific oxygen uptake rate (SOUR)** An indicator of a sludge's odor-causing potential by aerating a sludge sample and measuring the rate of oxygen depletion.

**specific resistance** A measure of total ionized solids concentration determined by the resistance of a 1 cm cube of water to the passage of electricity under standard conditions.

**specific ultraviolet absorbance (SUVA)** The amount of ultraviolet light that can be absorbed per unit of total organic carbon which may indicate DBP formation potential.

**SpectraGuard™** Liquid antiscalant and stabilizer for reverse osmosis systems by Professional Water Technologies, Inc.

**spectrophotometer** An instrument for measuring the amount of electromagnetic radiation absorbed by a sample as a function of wavelength.

**Spectrum™** Aeration-mixing systems by Environmental Dynamics Inc.

**Speedi-Berm™** Secondary containment system by Aero Tec Laboratories, Inc.

**Spektrotherm®** Low pressure, high intensity ultraviolet lamps by PCI-Wedeco Environmental Technologies, Inc.

**spent caustic** Waste product formed when petrochemicals and refined hydrocarbons are treated with caustic soda solutions to remove impurities.

**spent regenerant** Wastes from the regeneration of an ion exchange system.

**Sphaerotilus** A filamentous bacteria which commonly causes sludge bulking in activated sludge wastewater treatment plants.

**Spher-Flo** Single stage sewage pumps by Aurora Pump.

**sphericity** A measure of roundness and wholeness of filter media and ion exchange resin beads.

**Spill Prevention Control and Countermeasures Plan (SPCCP)** Plan covering the release of hazardous substances as defined in the Clean Water Act.

**spill water** Water released from an impoundment.

**spillway** The channel designed to direct overflowing water at the top of a dam.

**Spira-Cel®** Spiral wound, cross flow filtration membranes by Celgard LLC.

**Spiracone®** Conical tank upflow clarifier by USFilter/General Filter.

**Spiractor®** Lime softener by USFilter/Warren.

**Spiraflo** Peripheral feed clarifier by Lakeside Equipment Corp.

**Spirafloc** Peripheral feed clarifier with flocculation zone in outer raceway by Lakeside Equipment Corp.

**Spiragester** Combination digester and clarifier by Lakeside Equipment Corp.

**Spiragrit** Grit removal system by Lakeside Equipment Corp.

**Spiral Flow®** Water/solids separator by Alar Engineering Corp.

**spiral heat exchanger** A type of heat exchanger used in heavy fouling applications.

**Spiral Scoop** Dissolved air flotation skimming device by Krofta Engineering Corp.

**Spiralflow** Dewatering screen fabric by Geschmay GmbH.

**Spiralift™** Screw pump by USFilter/Zimpro.

**Spiralklean®** Screenings washer by Parkson Corp.

**Spiraltek™** Dry sump filters by Osmonics, Inc.

**Spira-Pac** Package digester clarifier combination by Lakeside Equipment Corp.

**Spiratex™** Point-of-use filtration system by Osmonics, Inc.

**Spirathickener** Peripheral feed gravity thickener by Lakeside Equipment Corp.

**Spiratrex** Ultrafiltration membrane by Osmonics, Inc.

**Spira-Twin Spiragester** Clarifier/digester unit for primary and secondary sedimentation of trickling filter effluents by Lakeside Equipment Corp.

**Spiravac** Peripheral feed clarifier with vacuum assisted sludge removal by Lakeside Equipment Corp.

**Spirolift®** Screw-type vertical conveyor by Spirac.

**Spiropac®** Screw-type compactor by Spirac.

**Spiropress®** Screw-type solids dewatering press by Spirac.

**Spirosand®** Shaftless grit classifier by Andritz-Ruthner, Inc.

**Spirovortex** Activated sludge treatment system including tertiary filtration by GL&V/Dorr-Oliver, Inc.

**Split-ClarAator™** Secondary clarifier by Waterlink/Aero-Mod Systems.

**splitter box** A chamber that equally divides incoming flow into two or more streams.

**spoil** Dirt or rock removed from its original location by strip-mining, dredging, or construction.

**sponge ball cleaning** The use of flexible sponge balls added to a recirculating liquid to scour scale or other deposits that form on the inside of condenser or heat exchanger tubes.

**spore** A reproductive cell or seed of a microbe, often dormant or environmentally resistant.

**sprawl** Unplanned development of open land.

**spray dryer** Sludge-drying device utilizing centrifugal force to atomize sludge into fine particles and spray them into the top of a drying chamber.

**spray irrigation** The spreading of treated wastewater on agricultural land by spraying.

**spray tower scrubber** A device that sprays alkaline water into a chamber where acid gases present to aid in the neutralizing of the gas.

**Spray-Film®** Vapor compression distillation unit by Aqua-Chem, Inc.

**Spraymaster®** Low-headroom packaged deaerator by Cleaver-Brooks.

**spring** A natural flow of water from the ground.

**spring turnover** See “turnover.”

**spring water** Bottled water collected from an underground formation from which the water flows naturally from the surface, or a bore hole that taps the spring and is located near where the spring emerges.

**Sprint™** Submersible pump product line by Crane Pumps & Systems.

**Sprout-Bauer** Former name of Andritz-Ruthner, Inc. screening equipment product line.

**Spyder™** Fixed-grid sludge withdrawal system by Roberts Filter Group.

**SQBE** Small quantity burner exemption.

**SQG** See “small quantity generator.”

**SQHs** See “small-quantity handlers.”

**Squarex** Circular sludge collector mechanism with pivoted corner extensions for square basins by GL&V/Dorr-Oliver, Inc.

**squeegee** See “small quantity generator (SQG).”

**SR-7™** Ion exchange resins by Sybron Chemicals, Inc.

**SRC** Solvent-refined coal.

**SRF** See “State Revolving Fund (SRF).”

**SRM** Standard reference method.

**SRT** See “solids retention time (SRT).”

**SS** See “suspended solids (SS).”

**SSA** Sole source aquifer.

**SSAC** Soil site assimilated capacity.

**SSI** Screening Systems International.

**SSMS** Spark source mass spectrometry.

**SSO** See “sanitary sewer overflow (SSO).”

**SSPC** Society for Protective Coatings. Formerly “Steel Structures Painting Council.”

**SSPMA** Sump and Sewage Pump Manufacturers Association.

**SST** See “stainless steel (SST).”

**SSV** See “settled sludge volume (SSV).”

**Stabilaire** Package contact stabilization treatment plant formerly offered by USFilter/Envirex.

**stability index** See “Langelier Saturation Index (LSI).”

**stabilization pond** A large shallow basin used for wastewater treatment by natural processes involving the use of algae and bacteria to accomplish biological oxidation of organic matter.

**StablCal™** Formazin turbidity standards by Hach Co.

**stable air** A motionless mass of air that holds instead of dispersing pollutants.

**stack** (1) A vertical conveyance method for the elevated discharge and dispersion of pollutants. (2) Common term for the key element of an electro dialysis unit consisting of multiple membrane cells with electrodes on both ends.

**stack effect** Air, as in a chimney, that moves upward because it is warmer than the ambient atmosphere.

**stack gas** See “flue gas.”

**StackMasterIMS™** Continuous emissions monitor by Molecular Analytics LLC.

**stage** One of several units of a flash evaporator, each of which operates at a successively lower pressure.

**stagnant** Motionless, not flowing in a current or stream.

**Stahlermatic®** Rotating biological contactor wastewater treatment system by Stahler GmbH.

**stainless steel (SST)** Corrosion resistant steel containing a minimum of 12% chromium as the principal alloying element.

**stakeholder** Any organization, governmental entity, or individual that has a stake in or may be impacted by a given approach to environmental regulation, pollution prevention, energy conservation, etc.

**STAKfilter** High volume vertical pressure screen filter by Everfilt Corp.



**Stak-Tracker™** Continuous emissions monitoring system by GE Reuter-Stokes.

**Standard Industrial Classification (SIC)** A U.S. government numbering system used to categorize industrial facilities.

**Standard Methods** Common abbreviation for the reference book *Standard Methods for the Examination of Water and Wastewater*, widely used in water and wastewater testing and analysis, and published jointly by APHA, AWWA, and WEF.

**standard plate count** See “heterotrophic plate count (HPC).”

**standard seawater** A widely accepted “standard” total dissolved solids concentration of approximately 36,000 mg/L, considered to be typical of most seawaters.

**standard solution** A solution whose strength or reacting value per unit volume is known.

**standpipe** A vertical, cylindrical water storage tank of uniform diameter with a height greater than its diameter.

**Stanley Compo-Cast** Former manufacturer of nonmetallic sludge collector wear shoes now made by Trusty Cook, Inc.

**stapling** The entanglement of stringy or fibrous debris on a mesh or bar rack.

**Star Filter®** Filter press by Star Systems, Inc.

**STAR®** Anaerobic package plants by ADI Systems, Inc.

**StarScreen** In-channel fine screen by Sernaggiotto Technologies.

**Sta-Sieve** Static fine screen by SWECO Engineering Corp.

**Stata-Tube Mixer™** Motionless mixer by TAH Industries, Inc.

**State Implementation Plan (SIP)** Plans to implement air quality standards required of each state under the Clean Air Act.

**State Revolving Fund (SRF)** A U.S. EPA program awarding grants to states for use in community projects which comply with public health protection needs, with an emphasis on small drinking water systems.

**static head** The vertical distance between a fluid’s supply surface level and free discharge level.

**Static Mixerator™** Static mixing aerators by JDV Equipment Corp.

**static mixer** Motionless device consisting of fixed baffles incorporated into channels or pipelines to create turbulence and mix additives added upstream.

**static pile composting** A composting method where piles of municipal wastewater solids are aerated to eliminate the need for remixing.

**static screen** Fine screen using a stationary, inclined screen deck that acts as a sieve to remove solids from liquids. Also known as a “rundown screen” or “sidehill screen” or “static screen.”

**static tube diffuser** A coarse bubble diffuser consisting of a vertically oriented cylinder with internal baffles to promote air/water mixing.

**stationary source** A fixed-site producer of pollution, mainly power plants and other facilities using industrial combustion processes.

**stator** The stationary member of an electric motor or generator.

**Stato-Screen** Static screen by Vulcan Industries, Inc.

**Stauffer Chemical** Former name of Rhone-Poulenc Basic Chemical Co.

**steady state** An equilibrium condition that exists in a system.

**Steady Stream** Turbidimeter by GLI International.

**steam chest** The steam chamber adjacent to a heat exchanger tubesheet.

**steam stripper** The process of removing volatile and semi-volatile contaminants from liquid where steam and liquid are passed countercurrently through a packed tower.

**STEL** See “short term exposure limit (STEL).”

**STEM** Scanning transmission-electron microscope.

**Stengel Baffle** Inlet baffle for rectangular sludge collector by USFilter/Zimpro.

**stenothermophiles** Bacteria that grow best at temperatures above 60°C.

**step aeration** Variation of the activated sludge process where settled wastewater is introduced at several points in the aeration tank to equalize the F/M ratio.

**Step Screen®** In-channel fine screen by Hans Huber GmbH.

**Stepaire** Circular package step aeration wastewater treatment plant formerly offered by USFilter/Envirex.

**sterile** Free from bacteria or other microorganisms.

**sterilization** The destruction or removal of all living organisms within a system.

**Ster-L-Ray™** Germicidal ultraviolet lamps by Atlantic Ultraviolet Corp.

**SternPAC™** Polyaluminum coagulant by Sternson Ltd.

**Stiff & Davis Index** Index used to determine the saturation point of calcium carbonate in seawater or other highly saline water.

**STIG** Steam injected gas turbine.

**still** Apparatus used in distillation.

**stilling well** A tube or chamber used to dampen waves or surges in a large body of water usually used for purposes of water level measurement.

**Sti-P<sup>3</sup>®** Steel tank standard for double wall underground tank with cathodic protection by Steel Tank Institute.

**stock solution** A concentrated chemical solution, often used as a reagent.

**stoichiometric** The ratio of chemical substances reacting in water that corresponds to their combining weights in the theoretical chemical reaction.

**stoker** A mechanical device that feeds solid fuel to a furnace.

**Stokes’ Law** Law that defines the settling velocity of a particle based on its density and size.

**stop log** A removable wooden, steel, or concrete bulkhead which fits into vertical grooves in a channel to stop water flow.

**storage lagoon** A lagoon constructed with a sealed bottom used to store and collect solids.

**Stord** Former name of Atlas-Stord, Inc.

**Storm King™** Vortex-type separation system by H.I.L. Technology, Inc.

**storm sewer** Collection system of underground piping used to remove water resulting from precipitation runoff.

**Stormceptor®** Stormwater treatment device by Stormceptor Corp.

**StormFilter™** Stormwater filtration and management system by Stormwater Management.

**StormGate™** High flow bypass by Stormwater Management.

**StormTreat™** Stormwater collection and treatment system by StormTreat Systems, Inc.

**stormwater** Water resulting from precipitation runoff.

**STP** (1) Sewage treatment plant. Equivalent to “WWTP.” (2) Standard temperature and pressure.

**Straightline**<sup>®</sup> Group of wastewater treatment products by USFilter/Envirex.

**strainer** A device that retains solids but allows liquids to flow through.

**Strain-O-Matic** Self-cleaning strainer by Hayward Industrial Products, Inc.

**StrainPress**<sup>®</sup> Screenings and trash removal compactor by Parkson Corp.

**Stranco** Former name of USFilter/Stranco.

**Stranrol** Chemical controller for disinfection systems by USFilter/Stranco.

**Strata Clear** Water flotation separator by Smith & Loveless, Inc.

**StrataMix** Fine bubble diffuser by Wilfley Weber, Inc.

**Strata-Sand**<sup>™</sup> Continuously backwashed gravity sand filter by F.B. Leopold Company, Inc. (U.S.) and Simon-Hartley, Ltd. (U.K.).

**Stratavap** Evaporator system by Licon, Inc.

**stratosphere** The level of the atmosphere containing most of the earth’s ozone that lies between the troposphere and the mesosphere.

**stray current corrosion** Electrochemical corrosion caused by stray currents leaking from an electrical installation.

**Stream Saver**<sup>™</sup> Automated spill control system by ILC Dover, Inc.

**streaming current** The net ionic and colloidal surface charges of suspended solid particles in solution.

**streaming current detector (SCD)** Measuring device used to detect and monitor the net electrical charge of particles in solution after coagulants have been added.

**Streamline** Flow proportional sampler by American Sigma, Inc.

**Streamline** Rectangular chain and flight collector by Purestream, Inc.

**streptococcus** A genus of bacteria that includes some of the most common human pathogens.

**stress corrosion cracking** Formation of cracks caused by the action of a corrosive medium in combination with tensile stress.

**stress relieving** Heat treatment carried out to reduce internal stresses in steel.

**Stress-Key** Pre-cast concrete packaged sewage treatment plants by Marolf, Inc.

**strip cropping** Growing crops in a systematic arrangement of strips or bands that serve as barriers to wind and water erosion.

**strip mining** A method of mining where surface soil and strata are removed to gain access to the mineral deposits.

**stripper** Device used to remove volatile and semi-volatile contaminants from water.

**Stripper**<sup>®</sup> Multistaged diffused-bubble aeration system by Lowry Aeration Systems, Inc.

**Stripperator** Treatment unit for hydrocarbon-contaminated water by Ejector Systems, Inc.

**strong acid** An acid that approaches 100% ionization in dilute solutions.

**strong acid cation exchanger** A cation exchange resin with an exchange site capable of splitting neutral salts to form their corresponding free acids.

**strong acid ion exchanger** Ion exchange using a cationic resin that contains exchangeable functional groups derived from a strong acid.

**strong base anion exchanger** An anion exchange resin with an exchange site capable of splitting neutral salts to form their corresponding free bases.

**strong base ion exchange** Ion exchange using an anionic resin that contains exchangeable functional groups.

**strong base load factor z** The sum of alkalinity, sulfate, chloride, silica, and carbon dioxide expressed as calcium carbonate equivalents.

**Stuart-Carter** Walking beam flocculator by JDV Equipment Corp.

**SU** Standard unit.

**subchronic** Of intermediate duration, usually used to describe studies or levels of exposure between 5 and 90 days.

**subdrainage** The control and removal of excess groundwater, usually by means of pipe drains that intercept seepage and/or lower the water table.

**subbituminous coal** A grade of coal with a heat content higher than that of lignite but lower than bituminous.

**sublimation** The process of changing a gas to a solid, or a solid to a gas, without going through the liquid phase.

**submerged aquatic vegetation** Vegetation such as sea grasses that cannot withstand excessive drying and therefore live with their leaves at or below the water surface.

**submerged MBR** An MBR configuration in which the membranes are immersed directly within the activated sludge reactor.

**submerged tube evaporator** An evaporator where steam enters a tube bundle submerged in the fluid to be boiled.

**submerged weir** A weir which when in use has a water level on the downstream side at an elevation equal to, or higher than, the weir crest. Also called a “drowned weir.”

**subnatant** Liquid remaining beneath the surface of floating solids.

**Suboscreen®** In-channel rotary fine screen by Andritz-Ruthner, Inc. (Western Hemisphere) and USFilter/Contra-Shear.

**Subrotor** Progressing cavity pump by Monoflo.

**subsidence** The lowering of the natural land surface due to a reduction of the fluid pressure, removal of underlying supporting material, compaction due to wetting, or added loads on the land surface.

**subsonic flow** Liquid flow at a speed that is less than the speed of sound in the fluid.

**substrate** The organic matter or nutrients used as food substances during biological wastewater treatment.

**subtropics** The regions bordering the tropical zone.

**Sucoflow®** Aeration diffuser by Huber+Suhner AG.

**suction head** The head between the centerline of a pump and the water level on the pump’s suction side.

**Sulf Control®** Sulfide inhibitor for prevention of hydrogen sulfide formation by NuTech Environmental Corp.

**sulfamic acid** Acid often used as a cleaning agent. Chemical formula is  $\text{HSO}_3\text{NH}_2$ .

**sulfate** The divalent, negative  $\text{SO}_4$  anion or an ester containing the anion.

**sulfate-reducing bacteria** Bacteria capable of reducing sulfate or other forms of oxidized sulfur to hydrogen sulfide gas.

**SulfaTreat®-OC** Hydrogen sulfide removal process by SulfaTreat Co.

**Sulfaver** Reagent chemical used to determine phosphates concentration in water by Hach Co.

**Sulfex**<sup>®</sup> Sulfide precipitation process for heavy metal removal by USFilter/Industrial Wastewater Systems.

**sulfide** The divalent, negative S anion or a salt containing the anion.

**sulfonator** Device used to inject and meter sulfur dioxide to dechlorinate water.

**sulfonic acid** An organic acid used to provide some cation exchange resin with its ion exchange capability. Chemical formula is SO<sub>3</sub>H.

**SulfOx**<sup>™</sup> Biological oxidant for elimination of odors and toxicity from wastewater and sludges by Sybron Chemicals, Inc.

**Sulftech**<sup>®</sup> Reducing agent by General Chemical Corp.

**sulfur** A flammable, nonmetallic element with many commercial uses. Chemical symbol is S.

**sulfur oxides (SOX)** Air contaminants resulting from the combustion of fuels containing sulfur in the presence of oxygen.

**sulfuric acid** A toxic corrosive acid capable of dissolving most metals. Chemical formula is H<sub>2</sub>SO<sub>4</sub>.

**Sulfur-Rite**<sup>™</sup> A hydrogen sulfide and light mercapton scavenger system by USFilter/Gas Technologies.

**sullage** Wastewater that drains from a home, farmyard, refuse heap, or street.

**Sulzer** Screenings grinder by GL&V/Dorr-Oliver, Inc.

**Sumigate**<sup>®</sup> Rubber dam for combined sewer overflow applications by Rodney Hunt Co.

**sump** A pit or reservoir that serves to collect water or wastewater for subsequent removal from the system.

**sump pump** A pump used to remove water or wastewater from a sump or wet well.

**Sumpaire**<sup>™</sup> Self-aspirating jet aerator by ABS Pumps, Inc.

**Sump-Gard**<sup>®</sup> Vertical centrifugal pump by Vanton Pump & Equipment Corp.

**Suparator**<sup>®</sup> Oil/water separator by Lemacon Techniek B.V.

**super austenitic stainless steel** Stainless steel alloyed with more than 4% molybdenum.

**Super Blend**<sup>™</sup> Cellulose acetate reverse osmosis membranes by TriSep Corp.

**Super Detox**<sup>™</sup> Encapsulation process to chemically stabilize furnace dust and other heavy metal residues by Conversion Systems, Inc.

**Super Dome**<sup>™</sup> Ceramic dome diffuser by Ferro Corp.

**Super Shredder**<sup>®</sup> In-line macerator by Franklin Miller, Inc.

**Super Sieve Screen** Sieve screen by Sizetec, Inc.

**Superblock II**<sup>®</sup> Filter underdrain with water and air/water backwash capabilities by F.B. Leopold Co., Inc.

**Super-Cel**<sup>®</sup> Diatomaceous earth filter media by Celite Corp.

**Supercell** Dissolved air flotation unit by Krofta Engineering Corp.

**Superceptor**<sup>®</sup> Pump station for oily and greasy wastewater by Thermaco, Inc.

**superchlorination** Chlorination with excess dosages which insures disinfection with short contact times and which produces free or combined residuals so large as to require dechlorination.

**supercool** To cool a substance in its liquid state at a temperature below its freezing point.

**supercritical water oxidation (SCWO)** High temperature/pressure wastewater treatment process where organic material is oxidized at temperatures above a fluid's critical point.

**Super-D-Canter<sup>®</sup>** Solid bowl decanter centrifuge by Alfa Laval Separation, Inc.

**Superdraw** Supernatant withdrawal unit by Walker Process Equipment.

**Superfloc<sup>®</sup>** High charge cationic flocculant by Cytec Industries, Inc.

**Superfund** A U.S. federal law authorizing identification and remediation of unsupervised hazardous waste sites. See "CERCLA."

**Superfund Amendments and Reauthorization Act** A 1986 U.S. law passed to reauthorize and expand CERCLA and require public disclosure of chemical release information and development of an emergency response plan.

**Superfund Innovative Technology Evaluation (SITE)** EPA-supported research, development, and demonstration projects designed to develop new remediation technologies.

**Superfuser** Fine bubble diffuser by USF/Envirex.

**superheat** The sensible heat in a gas above the amount needed to maintain the gas phase.

**superheated steam** Steam with additional heat added after vaporization, increasing its temperature and energy.

**Supermal** Pearlitic malleable iron chain material by Jeffrey Chain Corp.

**supernatant** Liquid above the settled sludge layer in a sedimentation basin.

**Superpulsator<sup>®</sup>** Solids contact clarifier utilizing inclined plates and intermittent pulsing to expand the sludge blanket by Infilco Degremont, Inc.

**SuperSand<sup>™</sup>** Continuous sand filter by Waterlink Separations, Inc.

**supersaturation** A solution containing more of a dissolved substance than is usually possible at equilibrium.

**SuperScraper<sup>™</sup>** Bottom sludge scraper by Waterlink Separations, Inc.

**SuperSettler<sup>™</sup>** Inclined plate clarifier by Waterlink Separations, Inc.

**SuperSkimmer<sup>™</sup>** Surface scum skimmer by Waterlink Separations, Inc.

**Superslant<sup>™</sup>** Inclined plates for clarification by Filtronics, Inc.

**Supersorbon** Solvent recovery plant by Dedert Corp.

**Superstill** Former name of VaPure vapor compression still by Paul Mueller Co.

**Superthickener** Large diameter center pier gravity thickener by GL&V/Dorr-Oliver, Inc.

**Super-Trasher** Vertical sludge pump by Vanton Pump & Equipment Corp.

**supplied air respirator (SAR)** Respirator using an airline or tank to provide air to the facepiece.

**support gravel** Layers of graded gravel between underdrain openings and filter media to prevent media from leaking into the underdrain.

**Supracell** Dissolved air flotation unit by Krofta Engineering Corp.

**Suprex<sup>™</sup>** Mixed bed-type condensate polisher by Graver Co.

**surcharge** (1) The height of wastewater in a sewer manhole above the crown of the sewer when the sewer is flowing completely full. (2) Loads on a system

beyond those normally anticipated. (3) An extra monetary charge imposed — especially on flows into a wastewater collection system — when set quantity or quality limits are exceeded.

**SURF®** Two-stage contact clarifier/filter by USFilter/General Filter.

**surface aerator** Mechanical aeration device consisting of a partially submerged impeller attached to a motor and mounted on floats or a fixed structure.

**surface condenser** A condenser, usually of the shell-and-tube design, that provides a suitable heat transfer surface area for condensing to occur where cooling water and process fluid remain separated.

**surface impoundment** A natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials to hold an accumulation of liquid wastes or waste-containing free liquids.

**surface loading rate** A criteria used for design of sedimentation tanks expressed as flow per day per unit of basin surface area. Also called “overflow rate.”

**surface mining** See “strip mining.”

**Surface Mining Control and Reclamation Act (SMCRA)** A 1977 U.S. law that set performance standards for environmental protection to be met at most surface mining operations for coal.

**surface runoff** Precipitation, snow melt, or irrigation in excess of what can infiltrate the soil surface and be stored in small surface depressions.

**Surface Scatter** On-line turbidimeter by Hach Co.

**surface tension** The force acting on a liquid surface that results in a minimum liquid surface area. Produced by the unbalanced inward pull exerted on the layer of surface molecules by molecules below the liquid surface.

**surface wash** An auxiliary high pressure water spray system used to agitate and wash the surface of granular media filters.

**surface water** Water from sources open to the atmosphere including lakes, reservoirs, rivers, and streams.

**Surface Water Treatment Rule** A 1989 EPA regulation that set maximum contaminant level goals for constituents including *Giardia lamblia* and viruses for public water systems using surface water sources or groundwater under the direct influence of surface water.

**surface-active agent** See “surfactant.”

**Surfact** Process to upgrade activated sludge system with air driven rotating biological contactors by USFilter/Envirex.

**surfactant** A surface-active agent such as a detergent which, when mixed with water, generally increases its cleaning ability, solubility, and penetration, while reducing its surface tension.

**Surfaer** Slow speed surface aerator by USFilter/Aerator Products.

**Surfpac™** Vertical-type PVC trickling filter media by the former American Surfpac Corp.

**surge-flow irrigation** A surface irrigation technique that involves intermittent application of irrigation water to a field for 50% of an irrigation cycle and diversion to another area for the remainder of the cycle.

**suspect material** Building material suspected of containing asbestos.

**suspended growth process** Biological wastewater treatment process where the microbes and substrate are maintained in suspension within the liquid.

**suspended loads** Sediment particles maintained in the water column by turbulence and carried with the flow of water.

**suspended solids (SS)** Solids captured by filtration through a glass wool mat or 0.45 micron filter membrane.

**suspension** A system in which very small particles are uniformly dispersed in a liquid or gaseous medium.

**suspensoid** Colloidal dispersion of solids in liquid.

**sustainable development** Growth that does not result in ecological damage.

**Sutorbilt®** Air blower by Gardner Denver Blower Division.

**SUVA** See “specific ultraviolet absorbance (SUVA).”

**SVE** See “soil vapor extraction (SVE).”

**SVI** See “sludge volume index (SVI).”

**SVOC** Semi-volatile organic compound.

**SVP-Pure™** Single vessel process for chlorine dioxide technology by EKA Chemicals.

**SW846** Test methods for evaluating solid waste.

**swamp** A type of wetland dominated by woody vegetation but without appreciable peat deposits. See also “wetlands.”

**swamp gas** See “marsh gas.”

**Swan®** Analytical instruments by Industrial Analytics, Corp.

**SWD** See “side water depth (SWD).”

**SWDA** Solid Waste Disposal Act.

**sweep flocculation** Coagulation/flocculation process using relatively large amounts of iron or metal salts to form voluminous floc particles used to trap smaller particles.

**sweet environment** Environment containing no, or negligible amounts of, hydrogen sulfide.

**sweet water** Brackish water that may be used for drinking even though it may not meet potable water standards.

**sweeten** To remove sulfur contaminants from petroleum products.

**swelling** Condition that exists as a result of intrusion of water into a particle.

**Swing-Flex™** Check valve by Val-Matic Valve & Manufacturing Corp.

**Swingfuser®** Removable aeration header and drop pipe assembly by USFilter/Diffused Air Products Group.

**Swingtherm®** Regenerative catalytic oxidizer by Kvaerner Chemetics.

**SwingUp** Removable aeration header and drop pipe assembly by USFilter/Aerator Products.

**Swingwirl** Vortex flow meter by Endress+Hauser.

**Swirl-Flo™** Solids/liquid separation process by H.I.L. Technology, Inc.

**SwirlMix** Complete mix package wastewater treatment plant by Walker Process Equipment.

**Swiss Combi System** Sludge drying and pelletization system by Wheelabrator Water Technologies, Inc.

**SWRO** Seawater reverse osmosis.



**SWTR** See “Surface Water Treatment Rule.”

**SybrSorb™** Oil and oleophilic compound absorbent by Sybron Chemicals, Biochemical Division.

**SymBio™** Wastewater nitrification/denitrification treatment process by Enviroquip, Inc.

**symbiotic** A relationship between organisms of different species that benefits both members of the relationship such that neither could carry out certain activities alone.

**syndet** Commonly used contraction for “synthetic detergent.”

**synergy** The combined action of two agents that results in a reaction greater than the sum of the individual agents acting alone.

**synfuels** Liquid or gaseous fuels produced from coal, lignite, or other solid carbon sources.

**synthetic detergent** Cleaning agents such as linear alkyl sulfonate that react with water hardness but whose products are soluble.

**synthetic organic chemicals (SOC)** Manmade organic chemicals, some of which are volatile while others tend to stay dissolved in water instead of evaporating.

**Syphonid** Recovery device for sinker contaminants by Science Application International Corp.

**System-3** Oily water treatment system by Megator Corp.

**systemic toxicity** Adverse effects caused by a substance that affects a body in a general rather than local manner.

## T

**T&O** Taste and odor.

**T-2000®** Dry sorbent for use in baghouses by Solvay America.

**tailings** Residue from the separation of useful values from ore.

**tailpipe standards** Emissions limitations applicable to engine exhausts from mobile sources.

**tailwater** The runoff of irrigation water from the lower end of an irrigated field.

**Tait-Andritz** Former name of Andritz-Ruthner, Inc.

**TAK®** Ultraviolet systems by PCI-Wedeco Environmental Technologies, Inc.

**TAMS** Toxic air monitoring system.

**tangential screen** See “static screen.”

**tank blanketing** See “gas blanket.”

**Tankleenor** Petroleum tank cleaner by Gorman-Rupp Co.

**tannin** Colored compounds that form when plant matter degrades in water.

**tapered aeration** Variation of the activated sludge process where the amount of air supplied in an aeration basin is tapered to match the demand exerted by the microbes.

**tapered flocculation** A flocculation process utilizing multiple compartments and a gradually increasing velocity gradient.

**tapeworm** A parasitic flatworm that can live in the digestive tract or liver of vertebrates.

**TAPPI** Technical Association of the Pulp and Paper Industry.

**tardigrade** Minute water animals with segmented bodies and four pairs of unsegmented legs.

**tare** The empty weight of a vessel or container determined by deducting the weight of the contents from the total weight of the full load.

**Targa** Vapor compression water desalination unit by Mechanical Equipment Co., Inc.

**Taskmaster**<sup>®</sup> Screenings grinder by Franklin Miller, Inc.

**taste and odors** Two important characteristics of drinking water which are the targets of minimization or elimination in a water treatment plant.

**Taulman/Weiss** In-vessel composting system by USFilter/Davis Process.

**taxis** The involuntary movement of a free-moving cell or organism toward or away from an external stimulus such as light.

**TBF** See “traveling bridge filter (TBF).”

**TBT** See “top brine temperature.”

**TC** See “total carbon (TC).”

**TCA** Trichloroethane.

**TCD** Thermo-compression distillation.

**TCDD** Tetrachlorodibenzoparadioxin. A dioxin byproduct.

**TCDF** Tetrachlorodibenzofuran.

**TCE** See “trichloroethylene (TCE).”

**TCF** Totally chlorine free.

**TCF**<sup>®</sup> Horizontal tube cartridge filter by Ropur AG.

**TCLP** See “toxicity characteristic leaching procedure (TCLP).”

**TCR** See “Total Coliform Rule (TCR).”

**TCRI** Toxic Chemical Release Inventory.

**TD** Toxic dose.

**TDH** See “total dynamic head (TDH).”

**T-Disc**<sup>™</sup> Disc-type oil skimmer by Vikoma International Ltd.

**TDS** See “total dissolved solids (TDS).”

**Teacup**<sup>™</sup> Grit removal system by Eutek Systems, Inc.

**TEC** Tonka Equipment Co.

**Technasand**<sup>™</sup> Continuous backwashing sand filter by WesTech Engineering Inc.

**technology-based limitations** Industry-specific effluent limitations applied to a discharge when it will not cause a violation of water quality standards at low stream flows.

**TechXtract**<sup>™</sup> Chemical decontamination process by EET, Inc.

**TecTank** Bolted steel storage tank by A.O. Smith Engineered Storage Products.

**tectonic** Relating to changes in the structure and forces produced in the earth’s crust.

**Tecweigh**<sup>®</sup> Volumetric feeder by Tecnetics Industries, Inc.

**TEFC** See “totally enclosed fan cooled (TEFC).”

**TEG** Tetraethylene glycol.

**Tekkem** Lime slaker by RDP Technologies, Inc.

**Tekleen™** Filter screen by Automatic Filters, Inc.

**TEL** See “tetraethyl lead (TEL).”

**telemetry** The process of transmitting measured data by radio to a distant station.

**TeleTote™** Open channel electromagnetic flow meter by Marsh-McBirney, Inc.

**TEM** See “transmission electron microscope (TEM).”

**TEMA** Tubular Equipment Manufacturers Association.

**temperate zone** The middle latitude regions of the earth, located between latitude 23°26′ and 66°33′ north or south, which have moderate climates and distinct summer and winter seasons.

**temperature inversion** See “inversion.”

**temporary hardness** Hardness associated with bicarbonates of calcium and magnesium which precipitate upon boiling.

**temporary threshold shift (TTS)** A temporary reduction in hearing ability resulting from noise overexposure.

**Ten States Standards** Common name for “Recommended Standards for Wastewater Facilities,” a report of the Wastewater Committee of the Great Lakes-Upper Mississippi River Board of State Public Health and Environmental Engineers.

**Tenkay®** Cartridge air filter by Farr Co.

**tensile strength** The maximum tensile load per square unit of cross section that a material is able to withstand.

**Tenten** Continuously backwashed gravity sand filter by F.B. Leopold Company, Inc. (U.S.) and Simon-Hartley, Ltd. (U.K.).

**TEOM®** Ambient air particulate sampler by Rupprecht & Patashnick Co., Inc.

**teratogenic** A chemical or agent with properties which cause disfiguring by affecting the genetic characteristics of an organism.

**terminal headloss** The headloss at the end of a filter run cycle signifying that the filter bed is filled with solids.

**terminal settling velocity** The maximum sedimentation rate of an unhindered suspended particle.

**terracing** Dikes built along the contour of sloping farm land which hold runoff and sediment to reduce erosion.

**Terra-Gator®** Pressurized waste sludge injection system by Ag-Chem Equipment Co.

**TerraStor™** Temporary containment system by ModuTank, Inc.

**tertiary effluent** The effluent discharged from a tertiary treatment process.

**tertiary filtration** The use of a granular media filter to improve secondary wastewater effluent quality.

**tertiary treatment** The use of physical, chemical, or biological means to improve secondary wastewater effluent quality.

**TES Filter** Package, dual media gravity filter by USFilter/Davco.

**tetrachloroethylene (PCE)** See “perchloroethylene (PCE, also PERC).”

**tetraethyl lead (TEL)** An antiknock additive used in gasoline. The U.S. phased out its use in 1989 due to concerns over lead emissions.

**Tetratex**<sup>®</sup> Microporous PTFE membrane for filtration by Tetratex.

**tetratogenesis** The introduction of nonhereditary birth defects in a developing fetus by exogenous factors such as physical or chemical agents acting in the womb to interfere with normal embryonic development.

**Texas Star** Circular membrane diffuser by Aeration Research Co.

**TF/AS** See “trickling filter-activated sludge (TF/AS).”

**TF/SC** Trickling filter-solids contact.

**TFC**<sup>®</sup> Reverse osmosis membrane by Koch Membrane Systems, Inc.

**TFCL**<sup>®</sup> Thin film composite reverse osmosis membrane by Koch Membrane Systems, Inc.

**TFCS**<sup>™</sup> Reverse osmosis elements by Koch Membrane Systems, Inc.

**TFM**<sup>®</sup> Reverse osmosis membrane by Osmonics Desal.

**TGNMO** Total gaseous nonmethane organics.

**thalweg** The line of maximum depth in a river or stream.

**THC** Total hydrocarbons.

**theoretical oxygen demand (ThOD)** Determination of organic matter in a water or wastewater calculated on the basis of the chemical formula of the constituents.

**therapeutic index** The ratio of the dose required to produce toxic or lethal effects to dose required to produce nonadverse or therapeutic response.

**ThermaGrid**<sup>™</sup> Regenerative thermal oxidizer by McGill Airclean Corp.

**thermal oxidizer** An emissions control device that utilizes heat to accomplish VOC oxidation.

**thermal pollution** The discharge of heated effluent into the environment resulting in an undesired increase in ambient temperature, above that resulting from natural solar radiation.

**thermal treatment** Processes such as incineration or pyrolysis which use elevated temperatures to treat hazardous waste.

**thermal value** See “heat value.”

**ThermoBlender**<sup>™</sup> Sludge and quicklime blending unit by RDP Technologies, Inc.

**thermocline** The middle layer in a stratified lake that results from varying water densities.

**thermocompressor** A steam ejector that uses high pressure steam to increase the pressure of a lower pressure steam.

**ThermoFeeder**<sup>™</sup> Chemical feed unit by RDP Technologies, Inc.

**ThermoFlo** Spray coolers by Aqua-Aerobic Systems, Inc.

**thermophiles** Bacteria that grow best at temperatures between 45° and 60°C.

**thermophilic digestion** Sludge digestion within a thermophilic range of approximately 45° to 60°C.

**Thermo-Sludge Dewatering**<sup>™</sup> Float-type sludge thickening process by Dontech, Inc.

**Thermox**<sup>®</sup> Flue gas analyzer by Ametek Inc., Process & Analytical Division.

**thickener** A tank, vessel, or apparatus used to reduce the proportion of water in a slurry or sludge.

**thickening** A procedure used to increase the solids content of sludge by removing a portion of the liquid.

**ThickTech**<sup>™</sup> Rotary drum thickener by Waterlink Separations, Inc.

**thin film evaporator** Evaporator where liquid flows or is sprayed over heat transfer surfaces, usually tubes, in a thin, turbulent film.

**Thioguard**<sup>®</sup> Odor and corrosion control product by Premier Chemicals.

**thiols** See “mercaptans.”

**Thio-Red** Dissolved metal precipitant by Etus, Inc.

**thixotrope** A colloid whose properties are affected by mechanical treatment.

**thixotropy** The time-dependent property of some emulsions and sludges to change rheological and physical characteristics when left at rest.

**THM** See “trihalomethane (THM).”

**THMFP** See “trihalomethane formation potential (THMFP).”

**ThOD** See “theoretical oxygen demand (ThOD).”

**Thomas Conveyor** Former name of USFilter/Thomas Conveyor

**3DP**<sup>™</sup> Three-belt dewatering filter by Baker Process.

**threshold dose** The minimum dose of a substance to produce an effect.

**threshold level** Time-weighted average pollutant concentration values, exposure beyond which is likely to adversely affect human health.

**threshold limit value (TLV)** The maximal allowable workplace air level for a chemical.

**threshold odor number (TON)** The number of dilutions of odor-free water required to eliminate the odor in a water sample.

**Thru Clean** Back cleaned mechanical bar screen by USFilter/Headworks Products.

**TIC** See “total inorganic carbon (TIC).”

**tidal marsh** Low, flat marshlands traversed by channels and tidal hollows and subject to tidal inundation. Normally the only vegetation present is salt tolerant bushes and grasses.

**tide** The periodic rising and falling of the sea that results from the gravitational attraction of the moon.

**tide gate** A swinging gate in a sewer pipe that prevents seawater from entering the system during high tides.

**Tideflex**<sup>™</sup> Air diffuser and flexible check valve by Red Valve Co., Inc.

**TIE** Toxicity identification evaluation.

**Tile** Ceramic tile filter underdrain by Roberts Filter Group.

**tile field** A system used for subsurface discharge of treated wastewater effluent using open-jointed tile placed on gravel fill.

**tilted plate separator** Oil separation device utilizing inclined plates to separate free nonemulsified oil and water based on their density difference.

**time-lag** The time interval between the beginning of an event and the response that occurs as a result of the event.

**time-weighted average (TWA)** In air sampling, the average air concentration of contaminants during a given period.

**TIN** Total inorganic nitrogen.

**tinajero** A home water filtration device where water is collected in a clay pot after filtration through a porous stone.

**tines** The teeth or prongs of a bar screen cleaning rake.

**tipping** The dumping of the contents of a waste truck at a waste disposal facility.

**tipping fee** The fee charged to dispose of solid waste at a sanitary landfill.

**Tipping Scum Weir** Pivoting scum weir by F.B. Leopold Co., Inc.

**TISE** Take it somewhere else. See also “NIMBY.”

**Titan ASD 200™** Reverse osmosis antiscalant/dispersant by Professional Water Technologies, Inc.

**Titan-90™** Multi-media automatic backwashing system by Serfilco, Ltd.

**titer** The concentration of a substance in solution as determined by titration.

**Titeseal®** Copolymer fluid control gate by Plasti-Fab, Inc.

**titration** A method of determining the concentration of a dissolved substance in terms of the smallest amount of a reagent required to bring about a given effect in reaction with a known volume of test solution.

**Titraver** Chemicals used in analysis of water hardness by Hach Co.

**TKN** See “total Kjeldahl nitrogen (TKN).”

**TLC™** Thin layer composite reverse osmosis membrane by Osmonics, Inc.

**TLV** See “threshold limit value (TLV).”

**TLV-C** TLV-Ceiling.

**TLV-STEL** TLV-Short term exposure limit.

**TLV-TWA** TLV-time weighted average.

**TMDL** Total maximum daily load. An estimate of the capacity of a specific waterbody to assimilate pollution and still achieve designated uses.

**TMP** See “transmembrane pressure (TMP).”

**TMRC** Theoretical maximum residue contribution.

**TMU** Multiple-tank unit cars used to carry chlorine ton cylinders.

**TMX®** Thermatrix, Inc.

**TNCWS** See “transient, noncommunity water system (TNCWS).”

**TNT** Trinitrotoluene.

**TOA** Trace organic analysis.

**TOC** See “total organic carbon (TOC).”

**TOD** See “total oxygen demand (TOD).”

**toilet** A small room with a bowl-shaped fixture for urination and defecation. Also can refer specifically to the fixture.

**Tolhurst** Laboratory basket centrifuge by Baker Process/Ketema.

**ton** A unit of weight equal to 2000 pounds or 907.2 kilograms. Also called “short ton.”

**TON** See “threshold odor number (TON).”

**ton container** A 1-ton chlorine storage container.

**TonkaFlo** Pumps for RO/UF/DI applications by Osmonics, Inc.

**tonnage** The amount of waste that a landfill accepts, usually expressed in tons per month.

**tonne** See “metric ton.”

**Tonozone** Ozone generator by Praxair-Trailigaz Ozone Co.

**top brine temperature** The maximum temperature of the fluid being evaporated in an evaporator system.

**topography** The physical features of a surface area including relative elevations and the position of natural and manmade features.

**topping cycle** Cogeneration system where electricity is produced by the combustion process, and then byproduct heat is scavenged for thermal processes.

**Tornado®** Aspirating type surface aerator by Aeromix Systems, Inc.

**Torpedo™** Clarifier foam and grease removal unit by United Industries, Inc.

**Torpedo Filter** Floating microfilter by BTG, Inc.

**Torpedo Pump** Reverse osmosis pump by Pumps Unlimited.

**Torque-Flow** Grit handling vortex slurry pump by Envirotech Pumpsystems.

**TorusDisc** Sludge dryer/cooler by Hosokawa Bepex Corp.

**Torvex®** Catalytic oxidation system by Süd-Chemie Prototech Inc.

**total carbon (TC)** A quantitative measure of both total inorganic and total organic carbon in water and wastewater, determined instrumentally by chemical oxidation to carbon dioxide and subsequent infrared detection in a carbon analyzer.

**Total Coliform Rule (TCR)** An EPA rule regulating known pathogens in drinking water.

**total dissolved solids (TDS)** The weight per unit volume of all volatile and non-volatile solids dissolved in a water or wastewater after a sample has been filtered to remove colloidal and suspended solids.

**total dynamic head (TDH)** The total energy a pump must impart to water to move it from one point to another, measured as the difference in height between the free water surface level on the discharge and suction sides of a pump.

**total inorganic carbon (TIC)** The sum of all inorganic carbon species in a water or wastewater.

**total Kjeldahl nitrogen (TKN)** The sum of the organic plus ammonia nitrogen in a water sample which is determined by digesting and distilling the sample and then measuring the ammonia concentration in the distillate.

**total organic carbon (TOC)** Measurement of organic matter in a water or wastewater that can be oxidized in a high temperature furnace.

**total oxygen demand (TOD)** Measurement of organic matter in a water or wastewater that can be converted to stable end products in a platinum-catalyzed combustion chamber.

**total solids (TS)** The sum of dissolved and suspended solids in a water or wastewater. Matter remaining as residue upon evaporation at 103 to 105°C.

**total suspended particulates (TSP)** The concentration of all airborne particulate matter usually expressed as micrograms of particulate per cubic meter of sampled air.

**total suspended solids (TSS)** The measure of particulate matter suspended in a sample of water or wastewater. After filtering a sample of a known volume, the filter is dried and weighed to determine the residue retained.

**total toxic organics (TTO)** The sum of the concentrations of all toxic organic compounds found in a sample.

**total trihalomethane (TTHM)** The sum of the concentration of trihalomethane compounds rounded to two significant figures.

**totally enclosed fan cooled (TEFC)** Designation for motor enclosure that is not airtight but doesn't allow free exchange of air between the inside and outside of the motor case. Exterior cooling is provided by an integral external fan.

**totally enclosed nonventilated (TENV)** Designation for motor enclosure that is not airtight, but constructed so as to prevent free exchange of air between the inside and outside of the motor case.

**TotalSep** Oil/water separator by Hydro-Flo Technologies, Inc.

**TotalTreat** Package wastewater treatment system by USFilter/Industrial Wastewater Systems.

**TotlSep** Oil/water separator by Hydro Flo Technologies.

**Toveko**<sup>®</sup> Continuously operating sand filter by USFilter/Krüger.

**Tow-Bro**<sup>®</sup> Suction-type sludge removal system for circular clarifiers by USFilter/Envirex.

**Tower Press** Belt filter press by Roediger Pittsburgh, Inc.

**Towerbrom**<sup>®</sup> Bromine-based biocide by Calgon Corp.

**Towermaster** Pressurized sand filter for cooling tower applications by Axsia Serck Baker, Inc.

**TOX** (1) Total organic halogen. (2) Tetrachloroethylene.

**ToxAlarm**<sup>™</sup> On-line toxicity monitor by Anatel Corp.

**TOXFP** Total organic halogen formation potential.

**toxic** Capable of causing an adverse effect on biological tissue following physical contact or absorption.

**toxic chemical** Any chemical listed in the EPA rules as “Toxic Chemicals Subject to Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986.”

**toxic cloud** Airborne plume of gases, vapors, fumes, or aerosols containing toxic materials.

**Toxic Release Inventory (TRI)** Database of toxic releases in the U.S. compiled from SARA Title III section 313 reports.

**toxic substance** Any chemical or material that may present an unreasonable risk of injury to one’s health or the environment.

**Toxic Substances Control Act (TSCA)** A 1976 U.S. law authorizing the EPA to collect information on chemical risks.

**toxic waste** A waste that can produce injury upon contact with or by accumulation in or on the body of a living organism.

**toxicant** A substance that is toxic to another organism.

**toxicity** The property of being poisonous or causing an adverse effect on a living organism.

**toxicity characteristic leaching procedure (TCLP)** Method used to determine the amount of a hazardous substance which will leach from a solid when the solid is subjected to water.

**toxicology** The study of adverse effects of chemical on living organisms.

**Toxilog** Portable single gas detector by Biosystems, Inc.

**toxin** A poisonous material that can cause damage to biological tissue following physical contact or absorption.

**TPAD** Temperature-phased anaerobic digestion, which combines thermophilic and mesophilic anaerobic digestion.

**TPC**<sup>®</sup> Potassium permanganate by Carus Chemical Co., Inc.

**TPH** Total petroleum hydrocarbons.

**TPY** Tons per year.

**TQM** Total Quality Management.

**Trac Pump** Sludge-dredging system by E.S.G. Manufacturing, LLC.



**trace elements** (1) Any elements in a water or wastewater that are present in very low concentrations. (2) Elements present in minor amounts in the earth's crust.

**trace organics** Organic matter present in water supplies in very low concentrations which originates from natural sources and the synthetic chemical industry.

**Tractor Drive** Circular clarifier drive unit by Walker Process Equipment.

**Trac-Vac<sup>®</sup>** Suction sludge removal mechanism by Baker Process.

**TracWare<sup>™</sup>** Particle counting system by Chemtrac Systems, Inc.

**TrailgazConcept<sup>™</sup>** Ozone generator by Praxair-Trailgaz Ozone Co.

**transboundary pollutants** Air pollution that travels from one jurisdiction to another, often crossing state or international boundaries.

**transducer** A device that receives energy from one system and retransmits it, often in another form, to another system.

**Trans-Flo<sup>™</sup>** Rectangular tank secondary clarifier by USFilter/Envirex.

**transient, noncommunity water system (TNCWS)** A noncommunity water system that does not serve 25 of the same nonresidents per day for more than 6 months per year.

**transient water system (TWS)** A public water system that serves a nonresident population.

**Transmax<sup>®</sup>** Medium/coarse bubble air diffuser by Enviroquip, Inc.

**transmembrane pressure (TMP)** The average pressure across a membrane, measured as the hydraulic pressure differential from the feed side to the permeate side.

**transmission electron microscope (TEM)** A microscope with a magnification range of 220X to 1,000,000X at a resolution of 2 Å, where illumination is provided by a beam of electrons which pass through the electron transparent specimen.

**transmission lines** Pipelines that transport raw water from its source to a water treatment, and then to the distribution grid system.

**transmissivity** The rate that water flows through an aquifer under a hydraulic gradient.

**transmutation** Changing one element into another by changing the number of protons in the atom nucleus.

**Trans-Pak<sup>®</sup>** Solid waste compacting/baling unit by Harris Waste Management Group, Inc.

**transpiration** The loss of water from the leaves and stems of plants.

**transpiration ratio** The ratio of the weight of water lost to atmosphere through transpiration and the weight of dry plant material produced.

**transuranic wastes** Radioactive wastes containing isotopes above uranium in the periodic table which are byproducts of fuel assembly, weapons fabrication, and reprocessing.

**Transvap** Mobile wastewater reduction/recovery system by Licon, Inc.

**Trasar<sup>®</sup>** Control and diagnostic technology by Nalco Chemical Co.

**trash** Combustible waste including up to 10% plastic or rubber scraps from commercial and industrial sources.

**Trash Hog<sup>®</sup>** Self-priming, solids handling pumps by ITT A-C Pump.

**trash rack** A coarse screening device using a parallel set of stationary bars typically spaced at 38 mm (1.5 inch) to 150 mm (6 inches).

**trash rake** A mechanical screening device used to remove rough or debris or trash from a trash rack.

**trash-to-energy** Burning trash to produce energy.

**Travalift™** Traversing sludge collecting and pumping mechanism formerly offered by USFilter/Envirex.

**TravcyI™** Precision metering pump by EncyNova International, Inc.

**traveling band screen** See “traveling water screen (TWS).”

**traveling bridge clarifier** A rectangular clarifier with the sludge removal mechanism supported by a traversing bridge.

**traveling bridge filter (TBF)** A granular media filter with multiple compartments which can be individually cleaned by a moveable, bridge-mounted backwashing device without taking the entire filter out of service.

**traveling screen** See “traveling water screen (TWS).”

**traveling water screen (TWS)** Automatically cleaned screening devices employing chain-mounted wire mesh panels to remove floating or suspended solids from a channel of water.

**Traypak™** Deaerator trays by Graver Co.

**TRC** Total residual chlorine.

**TRE** Toxicity reduction evaluation.

**treatability study** A study in which a waste is subjected to a treatment process to determine whether it is amenable to treatment and/or to determine the treatment efficiency or optimal process conditions for treatment.

**treated wastewater** Wastewater that has been subjected to one or more physical, chemical, and biological processes to reduce its pollution of health hazards.

**treatment, storage, and disposal (TSD)** A description of a facility where hazardous waste is treated, stored, and/or disposed.

**Trebler** Automatic sampler by Lakeside Equipment Corp.

**Trey Deaerator™** Three-stage deaerator by USFilter/Rockford.

**TRI** See “Toxic Release Inventory (TRI).”

**trial burn** An incinerator test to demonstrate compliance of the unit with RCRA operating standards.

**Triangle Brand®** Copper sulfate product by Phelps Dodge Refining Co.

**Triboflow** Continuous particulate emissions monitor by Auburn Systems LLC.

**Tricanter®** Centrifuge by Krauss Maffei Corp.

**Tricellorator** Three compartment dissolved air flotation unit by Pollution Control Systems, Inc.

**Tricep™** Granular resin filtration process for the removal of iron and copper oxides with oil by Graver Co.

**trichloramine** A compound formed by the chlorination of water containing ammonia which may be the source of taste and odors.

**trichloroethylene (TCE)** A chlorinated hydrocarbon used as an industrial cleaner or solvent which may cause organ damage or tumors in humans.

**trickle irrigation** Method in which water drips to the soil from perforated tubes or emitters.

**trickling filter** An aerobic, fixed film wastewater treatment process where organic matter present in a wastewater is degraded as it is distributed over a biological filter bed.

**trickling filter-activated sludge (TF/AS)** Process combining trickling filter wastewater treatment followed by an activated sludge process to satisfy some unique treatment requirement.

**Tricon** Concrete water treatment plant with buoyant media flocculator/clarifier by USFilter/Microfloc.

**Tridair** Dissolved air flotation unit by Engineering Specialties, Inc.

**Trident®** Modular water treatment plant with buoyant media flocculator/clarifier by USFilter/CPC.

**trihalomethane (THM)** Disinfectant byproducts formed when chlorine reacts with organic compounds in water. These halogenated organics are named as derivatives of methane and include suspected carcinogens.

**trihalomethane formation potential (THMFP)** An indirect measure of trihalomethanes determined by a laboratory test procedure that measures the amount of trihalomethane precursors in a sample.

**Trimite™** Package water treatment plant with buoyant media flocculator/clarifier USFilter/Microfloc.

**Tri-NOx®** NOx removal process by Tri-Mer Corp.

**Triogen** UV disinfection systems by Ozonia North America.

**Tri-Packs®** Plastic packing media by Jaeger Products, Inc.

**triple point** The condition at which the solid, liquid, and gaseous states of a substance coexist simultaneously in equilibrium.

**Triplex™** Three-stage air scrubber by USFilter/Davis Process.

**Trisep™** Oil/solids/water separation filters by Graver Co.

**Triton®** Surface mounted aerator/mixer by Aeration Industries, Inc.

**Triton®** Wedgewire screen lateral underdrain system USFilter/Microfloc.

**Tritor** Front cleaned bar screen and grit removal device by USFilter/Headworks Products.

**Triturator** Screenings grinder by USFilter/Envirex.

**TriZone™** Packaged water treatment/ozonation system by USFilter/Microfloc.

**Troll** Submersible water and temperature level probe by In-Situ, Inc.

**Tromax™** Trommel screen by Norkot Mfg. Co.

**tromeling** The removal of small diameter solids using a trommel screen.

**trommel screen** A cylindrical, rotating screen used to separate solid waste material according to size and density.

**trophic level** Any of the distinct feeding levels in a food chain.

**tropical** Term used to describe the region, climate, or vegetation characteristic of the tropical zone.

**tropical rain forest** The densely forested equatorial regions of the world that experience very high annual rainfall.

**tropical zone** The region of the earth located between the Tropic of Cancer at latitude 23°26' north and the Tropic of Capricorn at latitude 23°26' south, which has a warm/hot year-round climate.

**troposphere** The lowest level of the atmosphere that extends to a height of between 9 and 16 km above the earth's surface.

**TroubleShooter™** Portable containment unit for hazardous waste spills by ThermaFab, Inc.

**TRPH** Total recoverable petroleum hydrocarbons.

**true color** The color in water caused by the presence of humic or fulvic acids which result from the decomposition of organic matter.

**Tru-Grit** Grit washing and separation system by Waterlink Separations, Inc.

**Tru-Gritter** Grit removal system by Vulcan Industries, Inc.

**trunnion** A pivot or pin mounted on bearings used to rotate or tilt something.

**Tru-Test** Automatic liquid sampler formerly offered by USFilter/Headworks Products.

**TS** See "total solids (TS)."

**TSCA** See "Toxic Substances Control Act (TSCA)."

**TSD** See "treatment, storage, and disposal (TSD)."

**TSDF** Treatment, storage, and disposal facility.

**TSE** Treated sewage effluent.

**TSP** See "total suspended particulates (TSP)."

**TSS** See "total suspended solids (TSS)."

**TSV** Telescoping sludge valve.

**TTHM** See "total trihalomethane (TTHM)."

**TTHM>0** Instantaneous total trihalomethane concentration.

**TTHMFP** Total trihalomethane formation potential.

**TTO** See "total toxic organics (TTO)."

**TTS** See "temporary threshold shift (TTS)."

**TU** Turbidity unit. See "nephelometric turbidity unit (NTU)."

**Tub Scrubber** Single stage dry chemical air scrubber by Purafil, Inc.

**tube settlers** A series of parallel inclined tubes used to increase the settling efficiency of sedimentation basins.

**tubercles** Knob-like mounds of corrosion on pipe surfaces.

**tuberculation** Development or formation of small mounds of corrosion products on the inside of iron pipe which roughen the pipe and increase its resistance to water flow.

**tubesheet** Flat plate used to secure the ends of tubes in an evaporator, heat exchanger, or boiler.

**TUc** Chronic toxicity unit.

**Tuff-Span** Modular tank covers by Enduro Composite Systems.

**Tulsion®** High temperature ion exchange resin by Thermax, Ltd.

**tundra** An ecosystem dominated by lichens, mosses, grasses, and woody plants found at high latitudes (arctic tundra) and high altitudes (alpine tundra). Arctic tundra is underlain by permafrost and is usually saturated.

**Tunnel Reactor®** In-vessel composting system by the former Waste Solutions.

**turbid** Cloudy or opaque condition of water caused by unsettled particles or sediment.

**turbidimeter** Instrument used to measure water turbidity by detecting the intensity of light scattered at angles from a beam of light projected through a water sample.

**turbidity** A qualitative measurement of water clarity resulting from suspended matter that scatters or otherwise interferes with the passage of light through the water.

**Turbo**<sup>®</sup> Mechanical surface aerator by Aeration Industries, Inc.

**Turbo**<sup>™</sup> Reverse osmosis booster pump by Pump Engineering, Inc.

**TurboBlade**<sup>™</sup> Low speed mixer with variable pitch impeller blades by Baker Process.

**TurboClean**<sup>™</sup> Spiral wound membrane element by TriSep Corp.

**Turbodrain** Gravity belt thickener by Gebr. Bellmer GmbH.

**TURBO-Dryer**<sup>®</sup> Sludge dryer by Wyssmont Co., Inc.

**Turbofill**<sup>™</sup> Random packed air stripper media by Diversified Remediation Controls, Inc.

**TurboFlow**<sup>™</sup> Soil remediation exhausters and blowers by Invincible AirFlow Systems.

**Turbo-Scour** Continuously cleaned package sand filters by Smith & Loveless, Inc.

**Turboshredder** Cutter assembly for grinder pump by Homa Pump Technology.

**TurboStripper**<sup>™</sup> Air stripping technology by Diversified Remediation Controls, Inc.

**Turbotron**<sup>®</sup> Rotary lobe blower by Gardner Denver Blower Division.

**Turbo-Vac**<sup>®</sup> Central vacuum system for dust and airborne particulates by PBR Industries.

**Turbozone**<sup>®</sup> Catalytic odor oxidizer by RGF O3 Systems, Inc.

**Turbulator** Rapid mixing unit by Walker Process Equipment.

**turbulence** (1) The fluid property characterized by irregular variation in the speed and direction of movement of individual particles or elements of the flow.  
(2) A state of flow of water in which the water is agitated by cross currents and eddies, as opposed to laminar, streamlined, or laminar flow.

**turbulent flow** A flow situation in which the fluid moves in a random manner with a Reynolds number usually greater than 4000.

**turgid** Swollen or distended by a buildup of fluid.

**turndown** A ratio expressing the maximum-to-minimum capacity of a process or device.

**turnover** Seasonal (spring and fall) change that occurs in a lake's thermal gradients, resulting in the circulation of biological and chemical materials.

**TVA** Tennessee Valley Authority.

**TVC** Thermal vapor compression. See "vapor compression evaporation (VC)."

**TVR** Thermal vapor recompression. See "vapor compression evaporation (VC)."

**TWA** See "time-weighted average."

**Twister** Fine bubble diffuser by MixAir Technologies, Inc.

**Twister** Low speed surface aerator by Aeromix Systems, Inc.

**TWL** Top water level.

**two-tray clarifier** Space-saving wastewater clarifier arrangement where one longitudinal clarifier basin is located above another and both are operated in parallel or series.

**TWPS** Tactical water purification system.

**TWS** (1) See “traveling water screen (TWS).” (2) See “Transient water system.”

**TxPro™** Solids transmitter by BTG, Inc.

**TxPro-2™** Suspended solids/turbidity transmitter by Zellweger Analytics, Inc.

**Tync Aeration** Former name of Aeration Research Company.

**type I settling** See “discrete particle settling.”

**type II settling** See “flocculant settling.”

**type III settling** See “hindered settling.”

**type IV settling** See “compression settling.”

**typhoid** Highly infectious disease of the gastrointestinal tract caused by water-borne bacteria.

**Typhoon** High speed surface aerator by Aeromix Systems, Inc.

**Tysul** Hydrogen peroxide oxidant by E.I. DuPont De Nemours, Inc.

**TZ** Treatment zone.

## U

**U.S. Filter** Former name of USFilter Corp.

**UAQI** Uniform Air Quality Index.

**UARG** Utility Air Regulatory Group

**UBC** Uniform Building Code.

**UBlock™** Air/water filter underdrain by Tetra Process Technologies.

**UCC** See “ultra clean coal (UCC).”

**UCCI** Urea-formaldehyde foam insulation.

**UCL** Upper control limit.

**UDMH** Unsymmetrical dimethyl hydrazine.

**UEL** Upper explosive limit.

**UF** See “ultrafiltration (UF).”

**UFL** Upper flammability limit.

**UFRV** See “unit filter run volume (UFRV).”

**UFW** See “unaccounted-for water (UFW).”

**UHMW** Ultrahigh-molecular-weight.

**UHR Filter** Dual media sand filter by Idreco USA, Ltd.

**UIC** See “Underground Injection Control (UIC).”

**UL®** Underwriters Laboratories, Inc.

**ullage** The amount that a container or tank lacks of being full.

**Ultima** Nonmetallic sludge collector flight by Budd Co.

**ultimate BOD (BOD<sub>u</sub>)** The amount of oxygen required to completely satisfy the carbonaceous and nitrogenous biochemical oxygen demand.

**ultimate strength** The stress calculated on the maximum value of the force and the original area of the cross section which causes fracture of the material.

**Ultimer®** Acrylamide polymer for sedimentation and sludge conditioning by Nalco Chemical Co.

**Ultrileaf®** High flow filtration element by Pall Corp.

**Ultrapor III®** Coreless filter elements by Pall Corp.

**ultra clean coal (UCC)** Coal that is washed, ground into fine particles, and chemically treated to remove sulfur, ash, silicone, and other substances.

**Ultrabar™** Ultrafiltration barrier process by F.B. Leopold Co., Inc.

**Ultracept®** Oil water separators by Jay R. Smith Mfg. Co.

**UltraChem™** Membrane for oily waste applications by Membrex, Inc.

**Ultradome®** Domed, aluminum tank cover by Ultraflote Corp.

**ultrafiltration (UF)** A low pressure (200-700 kPa, 20-100 psi) membrane filtration process which separates solutes in the 20 to 1000 angstrom (up to 0.1 micron) size range.

**UltraFlex®** LPDE containment liner by SLT North America, Inc.

**Ultraflow** Programmable open-channel flow measurement device by Monitek Technologies, Inc.

**Ultra-Guard** Ultraviolet disinfection system by UV Systems Technology, Inc.

**Ultramix™** High efficiency mixer motor by Lightnin.

**ultrapure water** Water with a specific resistance higher than 1 megohm-cm.

**UltraScrub** Wet scrubber by Tri-Mer Corp.

**Ultrasep** Ion exchange membrane for pressure driven processes by Ionics, Inc.

**ultrasonic** Acoustic waves with frequencies above 20 kHz, not audible to the human ear.

**ultrasonic flowmeter** A measurement device that transmits and receives sound waves through the flow to determine liquid flow rate.

**UltraStrip** Air stripper by GeoPure Continental.

**Ultra-Sweep™** Spiral blade clarifier by Hi-Tech Environmental, Inc.

**Ultratest** Polyelectrolyte used to enhance liquid/solid separation by Ashland Chemical, Drew Industrial.

**Ultra-Urban™** Stormwater runoff filter screen by AbTech Industries.

**ultraviolet light (UV)** Light rays beyond the violet region in the visible spectrum, invisible to the human eye.

**Ultrex** Tubular membrane diffuser by Aeration Research Company.

**Ultrion SVC®** Low molecular weight organic coagulant by Nalco Chemical Co.

**Ultrox®** Organic destruction process using ultraviolet light and oxidants by USFilter/Industrial Wastewater Systems.

**unaccounted-for water (UFW)** The fraction of water fed into a water distribution system which is not registered by the customers' meters.

**unburned lime** Another term for "calcium carbonate."

**unconfined aquifer** An aquifer containing water that is not under pressure.

**underdrain** Flow collection and backwash water distribution system used to support the filter bed in most granular media filters. Also called "filter bottom."

**underflow** The concentrated solids removed from the bottom of a tank or basin.

**Underground Injection Control (UIC)** The program under the Safe Drinking Water Act that regulates the use of wells to pump fluids into the ground.

**underground storage tank (UST)** A tank used to contain accumulations of regulated substances with 10% or more of its volume underground.

**UNEP** United Nations Environment Program.

**Uni-Dose™** Electronic metering pump by Liquid Metronics, Inc.

**Uniflap** Cast urethane flap valve by Ashbrook Corp.

**Uniflow** Sloped bottom settling tanks equipped with chain and flight sludge collector by USFilter/Envirex.

**uniformity coefficient** Method of characterizing filter sand where the uniformity coefficient is equal to the sieve size in millimeters that will pass 60% of the sand divided by that size passing 10%.

**UniMag™** Closed pipe flow meter by Isco, Inc.

**UniMix** Vertical or horizontal flocculation unit by Walker Process Equipment.

**Uni-Pac** Water treatment equipment products by Cochrane Inc.

**Unipak™** Induced gas flotation system by Unicel, Inc.

**UniPro™** Reverse osmosis pump system by David Brown Union Pump Co.

**Unipure** Heavy metals package waste removal system by Unipure Corp.

**Uni-Scour** Dual media filter with self-contained backwash storage by Smith & Loveless, Inc.

**Unisweep™** Filter surface wash system by Roberts Filter Group.

**Unisystem®** Activated sludge wastewater treatment system by Aeration Industries, Inc.

**unit filter run volume (UFRV)** The amount of liquid filtered between backwashes expressed as the product of the filter run length and the filtration rate.

**Unitank®** Continuous flow wastewater treatment system by Seghers Better Technology USA.

**Unitech** Evaporator and crystallizer product line by Graver Co.

**United States Filter** USFilter.

**Unitherm™** Thermal VOC oxidation unit by Dürr Environmental, Inc.

**Unitube** Suction-type sludge removal system for circular clarifiers by USFilter/Envirex.

**Uni-Vayor** Sludge removal conveyor by the former Bowser-Briggs Filtration Co.

**Univer** Chemicals used to determine water hardness by Hach Co.

**Universal®** Sand filter underdrain by F.B. Leopold Co., Inc.

**Universal RAI®** Rotary positive blowers by Dresser Industries/Roots Division.

**Universal Screen** Reciprocating rake bar screen by Meurer Industries, Inc.

**universal treatment standards (UTS)** Rule addressing sampling methods of metal constituents in hazardous wastes for compliance with treatment standards.

**Universal Venturi Tube™** Flow measurement device by BIF.

**universal wastes** Wastes that include used, nonlead acid batteries, recalled pesticides, and mercury-containing thermostats.

**UniversaLevel** Continuous liquid level transmitter by Ametek Drexelbrook Engineering Co.

**Unizone** Ozone generators by Praxair-Trailigaz Ozone Co.



**unleaded gasoline** Gasoline containing very little or no “tetraethyl lead” anti-knock additives.

**Unox**<sup>®</sup> A pure oxygen, activated sludge wastewater treatment process by Lotepro Corp (Western Hemisphere) and Linde-KCA-Dresden GmbH.

**unreasonable risk** Under the Federal Insecticide, Fungicide, and Rodenticide Act, that is any unreasonable risk to man or the environment, taking into account the medical, economic, social, and environmental costs and benefits of any pesticide.

**unsaturated zone** The area above the water table where soil pores are not fully saturated, although some water may be present.

**unstable** Condition describing an element or compound that reacts spontaneously to form other elements or compounds.

**Upcore**<sup>™</sup> Upflow countercurrent regeneration process and resins by Dow Chemical Co.

**UPE**<sup>®</sup> Universal Process Equipment Co.

**upflow clarifier** Clarifier where flocculated water flows upward through a sludge blanket to obtain floc removal by contact with flocculated solids in the blanket.

**upflow filter** Granular media filter characterized by an upward flow of liquid through the filter bed.

**UPS** Uninterruptible power supply.

**upset** An unexpected disturbance of a process or operation.

**uptake** The absorption or ingestion of an element or compound in an organism or substance.

**UPW** Ultrapure water.

**urban runoff** Stormwater from city streets and adjacent domestic or commercial properties which carries pollutants of various kinds into the sewer systems and receiving waters.

**urea** A soluble nitrogen compound that is a component of mammalian urine.

**urease** An enzyme that converts urea in urine into ammonia.

**USAID** U.S. Agency for International Development.

**USC** Unified soil classification.

**USCM** U.S. Conference of Mayors.

**USDA** U.S. Department of Agriculture.

**USDW** Underground sources of drinking water.

**USEPA** See “Environmental Protection Agency (EPA).”

**user fee** Fee collected from only those persons who use a particular service, as compared to one collected from the public in general.

**USF** USFilter.

**USFS** United States Forest Service.

**USGS** U.S. Geological Survey.

**USP** U.S. Pharmacopeia.

**USPHS** U.S. Public Health Service.

**USP-purified water** Water meeting USP-quality requirements that has been purified by distillation, ion exchange, or other suitable processes from water complying with the U.S. EPA’s drinking water regulations and contains no added substances.

**UST** See “underground storage tank (UST).”

**UTS** See “universal treatment standards (UTS).”

**U-tube manometer** See “manometer.”

**UV** See “ultraviolet light (UV).”

**UV<sub>254</sub>** A measure of water’s ultraviolet absorption at a 254 nanometer wavelength which is considered representative of the humic content of natural organic matter and a surrogate for disinfection byproduct precursors.

**UV3000™** Package ultraviolet water and wastewater disinfection system by Trojan Technologies, Inc.

**UV4000™** Ultraviolet wastewater disinfection system by Trojan Technologies, Inc.

**UV8000™** Medium and low pressure ultraviolet water disinfection system by Trojan *Technologies*, Inc.

**Uvaster®** UV disinfection system by USFilter.

**UVOX** Ultraviolet oxidation.

**UVT™** Universal venturi tube flow measurement by BIF.

## V

**V\*Sep®** Membrane filtration process using vibration to prevent fouling by New Logic International.

**V. cholerae** See “*Vibrio cholerae*.”

**Vacflush®** Aeration cleaning system by USFilter/Jet Tech.

**Vacpac™** Specialized waste container by PacTec, Inc.

**Vacuator** Vacuum-operated system for removal of floating solids and scum by GL&V/Dorr-Oliver, Inc.

**VacuLift™** Vacuum sludge removal system by Waterlink Separations, Inc.

**Vacu-Treat** Rotary vacuum filter by USFilter/Envirex.

**vacuum** A space from which air and gas have been removed and the pressure is less than normal atmospheric pressure.

**vacuum breaker** A backflow prevention device that automatically vents a water line to the atmosphere when subjected to partial vacuum.

**vacuum deaerator** Device operating under vacuum to remove dissolved gases from a liquid.

**vacuum filter** A dewatering device utilizing a cloth-covered cylindrical drum slowly rotating in a tank of sludge while subject to an internal vacuum. Sludge is drawn to the filter cloth while water passes through the sludge cake.

**vacuum truck** A tank truck used to remove wastewater or other liquid wastes in which the air inside the tank is pumped out and the liquid to be removed rushes in to fill the empty space.

**vadose zone** Designation of the layer of the ground below the surface but above the water table.

**value engineering** The process of subjecting an engineering design to a peer review by a group of experts who challenge the design concepts in an attempt to optimize the initial design and project cost.

**ValueMAX™** Reverse osmosis system by USFilter.

**valve** A device used to regulate flow of fluids through a piping system.

**Valve PAC™** Valve positioning controller by F.B. Leopold Co., Inc.

**van der Waals' Force** An attractive force apparent in colloidal particles.

**Vanguard®** Air stripper by Delta Cooling Towers, Inc.

**Vanguard®** Self-cleaning bar screen by Nuove Energie s.r.l.

**VAPCCIs** See "Vatavuk Air Pollution Control Indexes (VAPCCI)."

**vapor** The gaseous phase of a material in the solid or liquid state at standard temperature and pressure.

**Vapor Combustor™** Vapor extraction unit by QED Environmental Systems, Inc.

**vapor compression evaporation (VC)** Evaporative system where vapor boiled off in the evaporator is mechanically compressed and reused as the heating medium.

**Vapor Guard™** Fabric membrane odor control tank cover by ILC Dover, Inc.

**Vapor Pacs** Replaceable carbon canister systems for VOC emission control by Calgon Carbon Corp.

**vapor plumes** Flue gases visible because they contain water droplets.

**vapor pressure** The pressure at which equilibrium is established between the liquid and gas phases of a substance.

**vapor recovery system** A system to gather all vapors and gases discharged from a storage tank and process them to prevent their emission to the atmosphere.

**vapor trail** See "contrail."

**vaporization** The process where a substance changes from a liquid or solid to the gaseous state.

**VaporMate™** Volatile organic carbon treatment system by North East Environmental Products, Inc.

**VaPure®** Vapor compression still by Paul Mueller Co.

**VAR** Vector attraction reduction.

**variable declining-rate filtration** Filter operation where the rate of flow through the filter declines and the level of liquid above the filter rises throughout the filter run.

**Variair** Diffuser by USFilter/Diffused Air Products Group.

**variance** Government permission for a delay or exception in the application of a given law, ordinance, or regulation.

**Vari-Ator** Variable energy controller for floating aerator by USFilter/Aerator Products.

**Vari-Cant™** Jet aeration system by USFilter/Jet Tech.

**Variflo®** Wastewater distributor nozzle for high rate trickling filter by USFilter/Microfloc.

**Vari-Pond®** Centrifuge pond control system by Wesfalia Separator, Inc.

**VariPort™** Anaerobic digester gas mixing system by USFilter/Envirex.

**VariSieve™** Solids classifier by Krebs Engineers.

**VariTank™** Bolted steel tank by ModuTank, Inc.

**Varivoid™** High rate granular media filter by Graver Co.

**Vatavuk Air Pollution Control Indexes (VAPCCI)** Set of U.S. EPA indexes used to escalate air pollution equipment control costs.

**VATIP** Voluntary Advanced Technology Incentives Program. An EPA program intended to encourage environmental performance beyond what is required by the Cluster Rule.

**vault** An above- or below-ground-reinforced concrete structure for storing radioactive or other hazardous waste materials.

**vault privy** A holding tank with a seat or seats to provide for excretion of human wastes directly into the tank.

**V-Auto™** In-line strainer by Andritz-Ruthner, Inc. (Western Hemisphere) and Andritz Sprout-Bauer S.A. (Eastern Hemisphere).

**VC** See “vapor compression evaporation (VC).”

**VCE** Vapor compression evaporation.

**VCM** Vinyl chloride monomer.

**V-Cone®** Differential pressure flow design flow meter by McCrometer, Inc.

**VDB** Vacuum drying bed by U.S. Environmental Products, Inc.

**VDS** Vertical drum screen by Waste-Tech, Inc.

**VE** Visual emissions.

**vector** An insect or other carrier capable of transmitting a pathogen from one organism to another.

**vector-borne transmission** The transmission of an infectious agent from an insect or other vector to a human.

**Vee-wire®** Wedge-shaped wire by USFilter/Johnson Screens.

**vegetative controls** Nonpoint source pollution control practices that involve vegetative cover to reduce erosion and minimize loss of pollutants.

**vehicle miles travelled (VMT)** A measure of the extent of motor vehicle operation; the total number of vehicle miles travelled within a specific geographic area over a given period of time.

**Vekton** Nylon sludge collector sprockets by Norton Performance Plastics.

**Vektor™** Mixer by Lightnin.

**veliger** A free-swimming, larval mollusk.

**VeliGON®** Molluscicide used to kill zebra mussels by Calgon Corp.

**velocity cap** The horizontal cap on a vertical, offshore water intake which results in a horizontal inflow, thus reducing fish entrainment.

**velocity gradient (G value)** A measurement of the degree of mixing imparted to water or wastewater during flocculation.

**velocity head** The kinetic energy in a hydraulic system.

**velometer** A device used to measure air velocity.

**ventilation** The act of admitting fresh air into a space in order to replace stale or contaminated air; achieved by blowing air into the space.

**VentOXAL®** Oxygenator system by Air Liquide America.

**Vent-Scrub™** Powder-activated carbon adsorption unit by USFilter/Westates.

**VentSorb** Disposable granular activated carbon filters by Calgon Carbon Corp.

**Ventura™** VOC oxidizer by Megtec Systems, Inc.

**venturi effect** An increase in the velocity of a fluid as it passes through a constriction in a pipe or channel.

**venturi meter** A meter used to measure flows in closed conduits by registering the difference in velocity heads between the entrance and outlet of a contracted throat.

**venturi scrubber** A wet scrubber used to remove particulates from gaseous emissions.

**VEO** Visible emission observation.

**VerderFlex** Hosepump by Verder, Inc.

**vermiculture** A stabilization and conversion process using earthworms to consume organic matter in sludge.

**Versipad** Oil absorption device for light to medium oils by Mother Environmental Systems, Inc.

**VerTech™** Wet oxidation process by Air Products & Chemicals, Inc.

**VertiCel™** Biological wastewater treatment process by USFilter/Envirex.

**Verti-Flo** Vertical flow, rectangular tank clarifier by USFilter/Envirex.

**Verti-Jet™** Vertical pressure leaf filter by USFilter Corp.

**Vertimatic** Upflow sand filter by USFilter Corp.

**Vertimill™** Lime slaker by Svedala Industries, Inc.

**Verti-Press** High pressure filter press by Filtra-Systems Hydromatation.

**Verti-Press** Inclined screw-type solids/screenings press by Dontech, Inc.

**Vertiscreen** Vertical stationary screen by Thermal Black Clawson.

**very low sodium water** Bottled water containing 35 mg or less of sodium per serving.

**Vestrip™** Vacuum extraction system by Ejector Systems, Inc.

**VFD** Variable frequency drive.

**Vibra-Matic™** Vibrating pressure leaf filter cleaning system by USFilter Corp.

**Vibra-Screen** Vibrating fine screen by Triton Technologies.

**Vibrasieve®** Vibrating fine screen by Andritz-Ruthner, Inc.

**vibrating screen** A mechanical screening device whose screening surface is shaken or vibrated to enhance solid/liquid separation. A variation of this screen is used as a solids classifier.

**Vibrio cholerae** The bacterium responsible for causing cholera. Also called “*V. cholerae*.”

**Viggers Valve** Automatic sludge blow-off valve by Walker Process Equipment.

**VIGR™** Electostatic precipitator by Wheelabrator Air Pollution Control, Inc.

**Vincent Press** Horizontal dewatering screw press by Vincent Corp.

**Vinyl Core** PVC biological filter media formerly offered by B.F. Goodrich Co.

**viral** Pertaining to or caused by a virus.

**VIRALT** A mathematical model used to calculate the concentration of viruses at the water table and well after water has been transported through a subsurface media.

**Virchem®** Corrosion control product by Carus Chemical Co., Inc.

**virtual water** Water embedded in water-intensive commodities such as cereals.

**virulent** Extremely infectious or damaging to organisms.

**virus** Smallest biological structure capable of reproduction which infect their host, producing disease.

**viscera** The internal organs of an animal.

**Viscomatic** Lime slaker by Infilco Degremont, Inc.

**viscosity** The property of a fluid that offers resistance to flow due to the existence of internal friction.

**Vistex** Grit removal system by Vulcan Industries, Inc.

**Vitec™** Antiscalants and dispersants by Avista Technologies.

**Vitox®** Oxygen injection system for wastewater treatment plants by BOC Gases.

**vitrified clay** A kiln-fired clay product used to make pipe and brick.

**VLA** Very large array. See “array.”

**VMT** See “vehicle miles travelled (VMT).”

**V-notch weir** A weir with a triangular, v-shaped notch.

**VO Nozzle** Variable orifice spray nozzle by USFilter/Rex & Link-Belt Products.

**VOC** See “volatile organic compounds (VOC).”

**VOC Wagon™** Self-contained thermal oxidizer by NAO Inc.

**VOCarb** Activated carbon by USFilter/Westates.

**void volume** The volume of the spaces between granular material such as filter media or ion exchange resin, expressed as a percentage of the total volume occupied by the material.

**volatile** A substance that evaporates or vaporizes at a relatively low temperature.

**volatile liquids** Liquids which easily vaporize or evaporate at room temperature.

**volatile organic compounds (VOC)** Highly evaporative organic compounds often found in paints, solvents, and similar products.

**volatile suspended solids (VSS)** Organic content of suspended solids in a water or wastewater. Determined after heating a sample to 600°C.

**Volcano™** Continuous downflow sandfilter by Lighthouse Separation Systems, Inc.

**Volclay®** Sodium bentonite soil sealant liner systems by Colloid Environmental Technologies Co.

**Vollmar** Stormwater holding tank tipping bucket by Waterlink Separations, Inc.

**Voluette** Ampules of standard reagents solutions for analytical laboratory use by Hach Co.

**volume reduction** Processing waste materials to decrease the amount of space they occupy, usually by compacting or shredding, incineration, or composting.

**Volumeter™** Flow monitoring instrument by Marsh-McBirney, Inc.

**volumetric feeder** Dry chemical feeder that supplies a constant preset or proportional chemical delivery by volume and will not recognize a change in material density.

**volumetric tank test** A test to determine the physical integrity of a storage tank where the volume of fluid in the tank is measured directly or calculated from product-level changes, and a marked drop in volume indicates a leak.

**Vortair®** Low speed surface aerator by Infilco Degremont, Inc.

**Vortechs™** Stormwater treatment system by Vortechtechnics, Inc.

**vortex** A flow with a whirling, rotary motion forming a cavity in the center toward which particles are drawn.

**Vortex™** Circular tank grit removal system with a turbine type rotor by Infilco Degremont, Inc.

**vortex flow regulator** A funnel-shaped flow control device used to generate a uniform flow rate from a storage basin, tank, or cistern.

**vortex grit removal** Grit removal system relying on a mechanically induced vortex to capture grit solids in the center hopper of a circular tank.

**Vorti-Mix**<sup>®</sup> Submerged turbine aerator by Infilco Degremont, Inc.

**Vostrip**<sup>™</sup> Air stripping tower by EnviroSystems Supply.

**Voyager**<sup>™</sup> Portable GC by PerkinElmer Instruments.

**VPST**<sup>™</sup> Vapor phase odor control system by NuTech Environmental Corp.

**VRTO** Valveless regenerative thermal oxidizer. See “regenerative thermal oxidizer (RTO).”

**VSD** Virtually safe dose.

**VSR** Volatile solids reduction.

**VSS** See “volatile suspended solids (VSS).”

**VTCT**<sup>™</sup> Vertical tube coalescing oil/water separator by AFL Industries, Inc.

**VTE** Vertical tube evaporator.

**VTSH**<sup>®</sup> Vertical turbine solids handling pump by Fairbanks Morse Pump Corp.

**VTX** Vertical vortex pump by Yeomans Chicago Corp.

**vulnerability analysis** Assessment of elements in the community susceptible to damage should a release of hazardous materials occur.

**vulnerable zone** An area over which the airborne concentration of a chemical accidentally released could reach the level of concern.

**VVC** Vacuum vapor compression.

## W

**W&T** USFilter/Wallace & Tiernan.

**W/O** Water-in-oil emulsion.

**WAC** Weak-acid cation exchanger.

**WAC**<sup>®</sup> Polyaluminum chloride flocculant by Water Treatment Solutions division of Elf Atochem North America, Inc.

**wadi** A dry stream or river bed which carries flash flood water.

**Wagner** Sand filter underdrains by Infilco Degremont, Inc.

**Walhalla Process** Sulfate and heavy metals precipitation and removal process by Graver Co.

**walking beam flocculator** A mechanical flocculation device whose mixing paddles are attached to a horizontal beam that rocks back and forth to produce a reciprocating motion.

**Wallace & Tiernan** Former name of USFilter/Wallace & Tiernan.

**walnut shell filter** A filtration device that uses ground walnut shells as granular filter media to remove hydrocarbons and other suspended solids from water.

**WAO** See “wet air oxidation (WAO).”

**warp** The vertical wire in woven wire mesh.

**WAS** See “waste activated sludge (WAS).”

**Wash Press** Screenings washer/press by Lakeside Equipment Corp.

**Washpactor** Sewage screenings washing and compacting unit by Waste-Tech, Inc.

**wash-water trough** The trough located above filter media used to sluice away backwash water.

**waste-activated sludge (WAS)** Excess activated sludge discharged from an activated sludge treatment process.

**waste characterization** Identification of chemical and microbiological constituents of a waste material.

**waste feed** The continuous or intermittent flow of wastes into an incinerator.

**waste heat evaporator** An evaporator that uses the heat of a gas turbine, diesel engine jacket water, or exhaust gas.

**waste load allocation** The maximum load of pollutants each waste discharger is allowed to release into a particular waterway.

**Waste Management, Inc.** Former name of WMX Technologies, Inc.

**waste minimization** Pollution control plan that includes both pollution source reduction and environmentally sound recycling.

**waste oil emulsion** A thick, viscous waste that results from a water-in-oil emulsion.

**waste oils** Lubricating oils that have completed their intended use cycle and must be treated and reused or receive proper disposal.

**waste reduction** Using source reduction, recycling, or composting to prevent or reduce waste generation.

**waste stabilization pond** A pond receiving raw or partially treated wastewater in which stabilization occurs.

**Wastebuster II™** Biological wastewater treatment plant by HRI-Biotek.

**Wastemaster™** Wastewater headworks treatment unit by WesTech Engineering Inc.

**Wastewarrior** Ultrafiltration wastewater treatment system by Hyde Marine, Inc.

**wastewater** Liquid or waterborne wastes polluted or fouled from household, commercial, or industrial operations, along with any surface water, stormwater, or groundwater infiltration.

**water** A colorless, transparent liquid essential for all life which freezes as ice at 0°C (32°F) and vaporizes forming steam at 100°C (212°F). Water occurs naturally on earth as rivers, lakes, and oceans, and falls from the clouds as rain. Water's chemical formula is H<sub>2</sub>O and it is a nonsymmetrically formed molecule of two hydrogen atoms which form an angle of 104.5 degrees with the oxygen atom lying between them.

**water banking** The process of storing excess water as groundwater during wet years for later extraction and use during dry cycles.

**Water Blaze** Wastewater evaporator by Landa, Inc.

**Water Boy®** Package water treatment plant by USFilter/Microfloc.

**Water Buffalo™** Reverse osmosis unit by Mechanical Equipment Co., Inc.

**Water Champ** Chemical induction unit by USFilter/Stranco.

**water closet (WC)** A common term for "toilet."

**water demand** The water requirements for a particular purpose.



**water dilution volume (WDV)** The volume of water required to dilute radioactive waste to a concentration that meets drinking water standards.

**Water Eater** Wastewater evaporator by Equipment Manufacturing Corp.

**water effect ratio (WER)** A test procedure that determines the capacity of site water to mitigate metal toxicity by comparing the toxic endpoint of site water to the toxic endpoint of laboratory water.

**Water Factory 21** An Orange County, California treatment plant designed to produce high quality water from municipal wastewater for injection into aquifers, creating a coastal barrier and preventing sea water intrusion of underground water supplies.

**water for injection (WFI)** Water purified to USP standards by distillation, ion exchange, or other suitable process, containing no additives, and intended for use as a solvent for preparation of parenteral solutions.

**Water Free™** Grit and screenings gate by Tetra Process Technologies.

**water hammer** Condition that may cause damage or rupture to a piping system resulting from a rapid increase in pressure that occurs in a closed piping system when the liquid velocity is suddenly changed.

**water hyacinth** See “hyacinth.”

**Water Maze®** Wastewater clarifier by Landa, Inc.

**water meter** A device installed in a pipe that measures and registers the quantity of water passing through it.

**water pollution** The presence in water of enough harmful or objectionable material to damage the water’s quality.

**Water Pollution Control Corp.** Former name of Sanitaire Corp.

**water purveyor** An agency or person that supplies water.

**water reclamation** The restoration of wastewater to a state that will allow its beneficial reuse.

**water recycling** Reclamation of effluent generated by a given user for on-site reuse by the same user.

**water reuse** The beneficial use of reclaimed water for purposes such as irrigation, cooling, or washing.

**water scarce** The condition existing in a country with annual, internal renewable freshwater resources of less than 1000 cubic meters per capita per year.

**water splitting** An electrically driven membrane process that separates ionic species in solution through the use of a bipolar membrane that dissociates water into hydrogen and hydroxyl ions. Also referred to as “bipolar membrane electro dialysis.”

**water stress** The condition existing in a country with total freshwater resources of 1000 to 1600 cubic meters per capita per year with major problems in drought years.

**water supplier** One who owns or operates a public water system.

**water supply system** The collection, treatment, storage, and distribution of potable water from source to consumer.

**water table** The upper limit of the portion of the ground saturated with water.

**Water Tech** Former equipment manufacturer acquired by Roberts Filter Group.

**Water Tiger™** Rotary and static fine screens by Komline-Sanderson Engineering Corp.

**water vapor** The gaseous form of water.

**water-based disease** A disease caused by hosts that either live in water or require water for part of their lifecycle, and are passed to humans when they are ingested or come in contact with the skin.

**Waterbetter®** Filter cartridges by Harmsco Filtration Products.

**waterborne** Of, or related to, something that can be carried by water.

**waterborne disease** A disease transmitted through a drinking water supply.

**waterbox** The chamber at the inlet end of a condenser tubesheet.

**waterflood** A method of secondary oil recovery in which water is injected into an oil reservoir to force additional oil out of the formation into a producing well.

**WaterKare** Dissolved air flotation product line by Kemco Systems, Inc.

**Waterloo System** Groundwater sampling and monitoring system by Solinst Canada Ltd.

**watermaker** A common term for a packaged, vapor compression thermal desalination unit.

**watershed** The land areas that drain into a surface waterbody.

**watershed approach** A coordinated framework for environmental management that addresses the highest priority problems within hydrologically defined geographic areas, taking into consideration both ground and surface water flow.

**water-soluble** The description of a material that dissolves in water.

**WaterSweet™** Granular media used for removal of hydrogen sulfide from drinking water by SultaTreat Co.

**watertube boiler** Boiler in which the flame and hot combustion gases flow across the outside of the tubes and water is circulated within the tubes.

**water-washed disease** A disease that results from inadequate sanitation or contact with contaminated water and can be prevented by washing with clean water.

**Waterweb®** Mesh used in air scrubbers by Misonix, Inc.

**waterwheel** A wheel driven by water flowing into buckets or falling on vanes on the periphery of the wheel.

**waterworks** The system of reservoirs, treatment, and pumping by which a water supply is obtained and distributed to a community.

**Waukesha Pump** Former name of Watson Marlow, Inc.

**Wave Oxidation®** Fluctuating aerobic and anaerobic biological wastewater treatment system by Parkson Corp.

**WaveOx®** Wastewater treatment process for biological nutrient removal by Parkson Corp.

**WBA** Weak-base anion exchanger.

**WC** See “water closet (WC).”

**WDV** See “water dilution volume (WDV).”

**weak acid** A poorly ionized acid that dissociates very little and produces few hydrogen ions in aqueous solution.

**weak acid cation exchanger** Cation exchange products with functional groups incapable of splitting neutral salts to form corresponding free acids.

**weak base anion exchanger** Anion exchange products with functional groups incapable of splitting neutral salts to form corresponding free bases.

**Wedge-Flow™** Wedge wire filtration products by LEEM Filtration Products, Inc.

**WedgePress** Belt filter press by the former Gray Engineering Co.

**Wedgewater Filter Bed™** Gravity sludge dewatering filter bed by Gravity Flow Systems, Inc.

**Wedgewater Sieve** Static bar screen by Gravity Flow Systems, Inc.

**wedgewire** General term to describe trapezoidal or v-shaped wire.

**WEF** Water Environment Federation.

**weft** The horizontal wire in woven wire mesh, also called the “shute” wire.

**weighted composite sample** A composite sample where the sample amounts are based on flow rates at the time of collection, i.e., the higher the flow, the larger the portion of sample taken at that time.

**weir** A baffle over which water flows.

**weir loading** The rate of flow out of a basin stated in terms of the volume of liquid passing over a stated length of weir per unit of time.

**weir overflow rate** A measurement of the volume of water flowing over each unit length of weir per day.

**Weiss** In-vessel composting system by USFilter/Davis Process.

**well** A bored, drilled, or driven shaft or hole whose depth is greater than the largest surface dimension.

**well monitoring** Measurement by on-site instruments or laboratory methods of the quality of water in a well.

**well plug** A watertight and gastight seal installed in a bore hole or well to prevent movement of fluids.

**well screen** A slotted or perforated well casing that allows passage of water while preventing solids from entering the well.

**well water** Water from a hole bored, drilled, or otherwise constructed in the ground to tap an aquifer.

**Well Wizard®** Groundwater monitor and sampling device by QED Environmental Systems, Inc.

**Welles Products** Equipment product line acquired by USFilter/Aerator Products.

**wellhead protection area** A protected surface and subsurface zone surrounding a well or wellfield supplying a public water system to keep contaminants from reaching the well water.

**Wemco®** Product line of Baker Hughes Process Systems.

**Wemco Pump** Product line of Envirotech Pumpsystems.

**WER** See “water effect ratio (WER).”

**WESP** See “wet electrostatic precipitator (WESP).”

**Westates Carbon** Carbon products and services by USFilter/Westates.

**Westchar™** Activated carbon by Osmonics, Inc.

**Westchlor®** Polyaluminum coagulants by Westwood Chemical Corp.

**Western Filter Company** Former manufacturer acquired by Osmonics, Inc.

**WestRO™** Reverse osmosis and membrane products by Osmonics, Inc.

**WET** See “whole effluent toxicity (WET).”

**WET®** Product line of Waterlink Inc.

**wet air oxidation (WAO)** Process where sludge and compressed air are pumped into a pressurized reactor and heated to oxidize the volatile solids without vaporizing the liquid.

**wet bulb temperature** The temperature reading taken from a thermometer with a wetted wick surrounding its bulb.

**wet electrostatic precipitator (WESP)** An electrostatic precipitator whose collecting electrodes are rinsed with water to remove particulates.

**wet scrubber** An air pollution control device used to remove particulates and fumes from air by entraining the pollutants in a water spray.

**wet steam** Steam containing water droplets.

**wet weather flow** The flow in a combined sewer during snowmelt and rain events.

**wet well** A chamber in which water or wastewater is collected and to which the suction of a pump is connected.

**Wetec™** Wet aeration installation system by Aeration Technologies, Inc.

**wetlands** Surface areas including swamps, marshes, and bogs which are inundated or saturated by groundwater frequently enough to support a prevalence of vegetation adapted for life in saturated soil conditions.

**wetlands treatment** A wastewater treatment system using the aquatic root system of cattails, reeds, and similar plants to treat wastewater applied either above or below the soil surface.

**wetness index** The precipitation for a given year expressed as a ratio of the mean annual precipitation.

**wetted perimeter** The length of wetted contact area between a stream of flowing water and the channel that contains it.

**WFI** See “water for injection (WFI).”

**Wheeler** Sand filter underdrain by Roberts Filter Group.

**Whirl-Flo®** Solids handling vortex pump by ITT A-C Pump.

**Whirl-Wet-AG** Airborne dust collector by Tri-Mer Corp.

**Whispair®** Rotary blower and gas pump product line by Dresser Industries/Roots Division.

**white goods** Large household appliances such as stoves, refrigerators, or washing machines which are discarded as wastes.

**white water** Filtrate from a paper- or board-forming machine, usually recycled for density control.

**Whitewater** Dissolved air flotation system by Water Resources Group, Inc.

**WhiteWater™** Low profile air strippers by QED Environmental Systems, Inc.

**WHM®** Bulk chemical handling products by USFilter/Zimpro.

**WHO** World Health Organization.

**whole effluent toxicity (WET)** The aggregate toxic effect of an effluent measured directly by a toxicity test.

**WHPP** Wellhead protection program.

**Wiese-Flo®** Self-cleaning filter screen by USFilter/Headworks Products.

**wildlife refuge** An area designated for the protection of wild animals, within which hunting and fishing are either prohibited or strictly controlled.

**Willett Pump** Electro/hydraulic ram pump by USFilter/Dewatering Systems.

**William Green** Former screening equipment manufacturer acquired by Brackett Geiger.

**Willowtech®** Sludge mixer/blender by Ashbrook Corp.

**windage emission** Emission of vapors resulting from wind blowing through a free-vented tank and educting some of the saturated vapors.

**windbreak** A row of trees planted on level land as protection against winds and erosion.

**Windjammer™** Brush aerator by United Industries, Inc.

**windrow composting** A composting method where municipal wastewater solids are arranged in long triangular-shaped piles, called windrows, which are mechanically turned and remixed periodically.

**Windrow-Mate** Compost odor control system by NuTech Environmental Corp.

**Winklepress®** Belt filter press by Ashbrook Corp. (U.S.), and Gebr. Bellmer GmbH (Europe).

**Winkler titration** A standard iodometric titration method of determining the dissolved oxygen level of a water or wastewater.

**wire-to-wire efficiency** The efficiency of a pump and motor together.

**witching** See “dowsing.”

**WLM** See “working level month (WLM).”

**work** A force acting over a distance measured in joules or foot-pounds.

**work exchanger** A mechanical energy recovery device where the energy of one fluid stream is transferred to another fluid.

**working level month (WLM)** A unit of measure used to determine cumulative exposure to radon.

**working load** An allowable recommended tensile load for chains used on conveyors, screens, or other applications of low relative speeds.

**worm** A shank having at least one complete thread around the pitch surface.

**worm gear** A gear with teeth cut on an angle to be driven by a worm; used to connect nonparallel, nonintersecting shafts.

**WPCF** Water Pollution Control Federation. Former name of “Water Environment Federation (WEF).”

**WPCP** Water pollution control plant.

**WQA** Water Quality Act of 1987.

**WQS** Water Quality Standard.

**WRDA** Water Resources Development Act.

**WRI** World Resources Institute.

**Wring-Dry** Internally fed rotary fine screen by Schlueter Co.

**WSA™** Former name of BG-WSA, Inc.

**WSF** Water soluble fraction.

**WSRA** Wild and Scenic Rivers Act.

**WSTA** Water Science and Technology Association.

**WSTB** Water Sciences and Technology Board.

**WTP** Water treatment plant.

**WTS** Former name of product group integrated into USFilter/Industrial Wastewater Systems.

**WW** Wastewater.

**WWEMA** Water and Wastewater Equipment Manufacturers Association.  
**WWF** World Wildlife Fund.  
**WWTF** Wastewater treatment facility.  
**WWTP** Wastewater treatment plant.  
**Wyss®** Fine bubble diffuser by Parkson Corp.

## X

**X-20™** Thin film composite reverse osmosis membrane by TriSep Corp.  
**XCELL™** Cell-less filter by USFilter/Davco.  
**xenobiotic** A description for any chemical compound that is foreign, and usually harmful, to the body of a living organism or biosystem.  
**Xentra** Continuous emissions analyzer by Servomex Co.  
**xeric** An organism that requires very little moisture to sustain life.  
**xeriscape** A landscape design used in arid climates that utilizes native and drought-tolerant plants in conjunction with water conservation techniques.  
**X-Flo™** Crossflow-type plastic trickling filter media by the former American Surfpac Corp.  
**XLP™** Rotary positive blower by Dresser Industries/Roots Division.  
**XL-Plus®** Solid bowl centrifuge by Baker Process.  
**XOthem™** Spray cooling system by Environmental Dynamics Inc.  
**XP** See “explosion proof (XP).”  
**X-Pru™** Explosion proof portable submersible pump by Crane Pumps & Systems.  
**xQy** A design stream flow condition that describes the lowest flow that will occur for (x) consecutive days not more than once every (y) years. See also “7Q10.”  
**XR-5®** Containment geomembrane lining by Seaman Corp.  
**X-ray fluorescence** A technique used in the analysis of water-formed deposits and heavy metals or corrosion products in water.  
**Xtractor™** Sludge removal process by USFilter/Davco.  
**xylene** The common name for dimethylbenzene, a volatile organic compound used as a solvent and insecticide. Chemical formula is  $C_6H_4(CH_3)_2$ .

## Y

**yard waste** Grass clippings, leaves, and miscellaneous vegetative matter.  
**yellow cake** One of the final precipitates in uranium extraction.  
**Yellow Jacket™** Floating hydrocarbon detection device by QED Environmental Systems, Inc.  
**yellow water** Water colored as a result of the presence of iron, also called “red water.”

- yellow-boy** Iron oxide flocculent usually observed as orange-yellow deposits in surface streams with excess iron content.
- yield** The amount of a material produced by a process or chemical reaction.
- yield point** The stress at which a substance undergoes significant change without an increase in applied stress.

## Z

- Z Chlor™** Chlorine and sulfite measurement and control unit by Bailey-Fischer & Porter.
- ZD** See “zero discharge (ZD).”
- zebra mussel** Freshwater mollusk that can foul water intake systems, treatment plants, and piping by attaching itself to a solid structure, eventually restricting flow.
- ZeeWeed®** Membrane bioreactor technology by Zenon Environmental, Inc.
- Zenobox** Membrane filtration system by Zenon Environmental, Inc.
- Zenofloc** Polymer control system for belt filter press by Zenon Environmental, Inc.
- ZenoGem®** Membrane bioreactor treatment process for tertiary treated wastewater by Zenon Environmental, Inc.
- Zeo-Karb®** Sulfonated coal cation exchange process by USFilter/Warren.
- Zeol™** Rotor concentrator for VOC abatement by Munters Zeol Corp.
- zeolite** Minerals or synthetic resins that have ion exchange capabilities.
- zeolite softening** Water softening process using a zeolite resin bed to accomplish ion exchange.
- Zeo-Rex®** Oxidizing filter for iron and manganese removal by USFilter/Warren.
- Zephyr®** Cartridge-type air filter by Farr Co.
- Zephyr™** Induced air flotation system by Aeromix Systems, Inc.
- zero discharge (ZD)** A facility that discharges no material to the environment.
- zero liquid discharge (ZLD)** A facility that discharges no liquid effluent to the environment.
- zero ODP** Zero ozone depletion potential.
- zero order reaction** A reaction in which the rate of change is independent of the concentration of the reactant.
- zero population growth (ZPG)** The situation where the birthrate is constant and equal to the death rate.
- zero soft water** Water having less than 1.0 grain per gallon as calcium carbonate.
- Zerofuel** Fluidized bed sludge incinerator by Seghers Better Technology USA.
- zeta potential (ZP)** The voltage differential between the surface of the diffuse layer surrounding a colloidal particle and the bulk liquid beyond.
- Zetag®** Cationic polyelectrolytes by Ciba Specialty Chemicals.
- Zeta-Pak** Cartridge filter by Alsop Engineering Co.
- Zickert** Product line of Waterlink, Inc.
- ZID** See “zone of initial dilution (ZID).”

**Zimmerman Process** Wet air oxidation process by USFilter/Zimpro.

**Zimpress** Plate and frame sludge press by USFilter/Zimpro.

**Zimpro Environmental** Former name of USFilter/Zimpro.

**Zimpro Process** Thermal sludge conditioning process by USFilter/Zimpro.

**ZLD** See “zero liquid discharge (ZLD).”

**Z-list** OSHA’s tables of toxic and hazardous air contaminants.

**Z-metal** Pearlitic malleable iron chain material by USFilter/Envirex.

**ZOC** See “zone of contribution.”

**ZOI** See “zone of incorporation.”

**zone of aeration** The comparatively dry soil or rock located between the ground surface and the top of the water table.

**zone of contribution (ZOC)** The area surrounding a pumping well that includes all areas that supply water to recharge the well.

**zone of incorporation (ZOI)** The depth to which soil on a landfarm is plowed or tilled to receive wastes.

**zone of initial dilution (ZID)** The part of a lake or river where a discharge from an outfall first mixes with the receiving waters.

**zone of saturation** The portion of the earth’s crust below the water table where the pores are filled with water at greater than atmospheric pressure.

**zooglea** A gelatinous matrix developed by growing bacteria associated with trickling filter beds and activated sludge floc.

**zooplankton** Small aquatic animals that possess little or no means of propulsion.

**ZP** See “zeta potential (ZP).”

**ZPG** See “zero population growth (ZPG).”

**ZRL** Zero risk level.



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## MANUFACTURERS DIRECTORY

A.B. Marketech, Inc.  
9708 N. Range Line Rd.  
Mequon, WI 53092  
Phone: 262-255-7448  
Fax: 262-241-3443

A.O. Smith Engineered Products  
2101 S. 21st St.  
Parsons, KS 67357  
Phone: 316-421-0200  
Fax: 316-421-9122  
[www.tectank.com](http://www.tectank.com)

A-C Compressor Corp.  
401 E. South Island St.  
Appleton, WI 54915  
Phone: 920-738-3080  
Fax: 920-738-3141  
[www.accompressor.com](http://www.accompressor.com)

Abanaki Corp.  
17387 Munn Rd.  
Chagrin Falls, OH 44022  
Phone: 440-543-7400  
Fax: 440-543-7404  
[www.abanaki.com](http://www.abanaki.com)

ABB Air Preheater, Inc.  
P.O. Box 372  
Wellsville, NY 14895  
Phone: 716-593-2700  
Fax: 716-593-2721  
[www.abb.com](http://www.abb.com)

ABB Raymond  
650 Warrenville Rd.  
Lisle, IL 60532  
Phone: 630-971-2500  
Fax: 630-971-1076

ABS Pumps, Inc.  
140 Pond View Dr.  
Meriden, CT 06450  
Phone: 203-238-2700  
Fax: 203-238-0738  
[www.abspumpsusa.com](http://www.abspumpsusa.com)

AbTech Industries  
4110 N. Scottsdale Rd., Ste. 235  
Scottsdale, AZ 85251  
Phone: 602-874-4000  
Fax: 602-970-1665

Acrison, Inc.  
20 Empire Blvd.  
Moonachie, NJ 07074  
Phone: 201-440-8300  
Fax: 201-440-4939  
[www.acrison.com](http://www.acrison.com)

ACS Industries, Inc.  
14211 Industry Rd.  
Houston, TX 77053  
Phone: 713-434-0934  
Fax: 713-433-6201

ADI Systems, Inc.  
1133 Regent St., Ste. 300  
Fredericton, NB E3B 3Z2  
Phone: 506-452-9000  
Fax: 506-459-3954  
[www.adi.ca](http://www.adi.ca)

Advanced Microbial Systems  
P.O. Box 540  
Shakopee, MN 55379  
Phone: 612-445-4251  
Fax: 612-445-7233  
[www.amsmicrobes.com](http://www.amsmicrobes.com)

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123 Saginaw Dr.  
Redwood City, CA 94063  
Phone: 650-366-2626  
Fax: 650-365-6490  
[www.advancedpolymer.com](http://www.advancedpolymer.com)

Advanced Sensor Devices, Inc.  
430 Ferguson Dr.  
Mountian View, CA 94043  
Phone: 650-960-3007  
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Advanced Separation Technologies  
5315 Great Oak Dr.  
Lakeland, FL 33815  
Phone: 941-687-4460  
Fax: 941-687-9362  
[www.advsep.com](http://www.advsep.com)

Advanced Structures, Inc.  
200 Industrial Parkway  
Escondido, OH 44024  
Phone: 440-286-4116  
Fax: 800-942-7659  
[www.pentairwater.com](http://www.pentairwater.com)

Adwest Technologies, Inc.  
1175 N. Van Horne Way  
Anaheim, CA 92806-2506  
Phone: 714-632-9801  
Fax: 714-632-9812  
[www.adwestusa.com](http://www.adwestusa.com)

Aeration Industries, Inc.  
P.O. Box 59144  
Minneapolis, MN 55459-0144  
Phone: 952-448-6789  
Fax: 952-448-7293  
[www.aireo2.com](http://www.aireo2.com)

Aeration Tehnologies, Inc.  
P.O. Box 488  
North Andover, MA 01845  
Phone: 978-475-6385  
Fax: 978-475-6387  
[www.aertec.com](http://www.aertec.com)

Aero Tec Laboratories, Inc.  
Spear Rd. Industrial Park  
Ramsey, NJ 07446-1251  
Phone: 201-825-1400  
Fax: 201-825-1962  
[www.atlinc.com](http://www.atlinc.com)

Aeromix Systems, Inc.  
2611 N. Second St.  
Minneapolis, MN 55411-1634  
Phone: 612-521-8519  
Fax: 612-521-1455  
[www.aeromix.com](http://www.aeromix.com)

Aeropulse, Inc.  
1746 Winchester Rd.  
Bensalem, PA 19020  
Phone: 215-245-7554  
Fax: 215-245-7849  
[www.aerpulse.com](http://www.aerpulse.com)

AFL Industries, Inc.  
3661 West Blue Heron Blvd.  
Riviera Beach, FL 33404  
Phone: 561-844-5200  
Fax: 561-844-5246

Ag Environmental Products LLC  
9804 Pflumm Rd.  
Lenexa, KS 66215  
Phone: 913-599-6911  
Fax: 913-599-2121  
[www.soygold.com](http://www.soygold.com)

Ag-Chem Equipment Co.  
5720 Smetana Dr.  
Minnetonka, MN 55343-9688  
Phone: 612-933-9006  
Fax: 612-933-7432  
[www.agchem.com](http://www.agchem.com)

Agar Corp.  
1600 Townhurst  
Houston, TX 77043  
Phone: 713-464-4451  
Fax: 713-464-7741

Agency Environmental, Inc.  
8362 Veterans Highway, Ste. 101  
Millersville, MD 21108  
Phone: 410-729-8490  
Fax: 410-729-8492

Air Liquide America  
5230 S. East Ave.  
Countryside, IL 60525  
Phone: 708-482-8400  
Fax: 708-579-7702

Air Products & Chemicals, Inc.  
7201 Hamilton Blvd.  
Allentown, PA 18195  
Phone: 610-481-4911  
Fax: 610-481-5084

Air-O-Lator Corp.  
8100 Paseo  
Kansas City, MO 64131  
Phone: 816-363-4242  
Fax: 816-363-2322  
[www.airolator.com](http://www.airolator.com)

Airmaster Aerator  
P.O. Box 156  
Wisner, LA 71378  
Phone: 318-724-7626  
Fax: 318-724-6528  
[www.airmasteraerator.com](http://www.airmasteraerator.com)

AirSep Corp.  
260 Creekside Dr.  
Buffalo, NY 14228-2075  
Phone: 716-691-0202  
Fax: 716-691-0707  
[www.airsep.com](http://www.airsep.com)

Airvac, Inc.  
P.O. Box 528  
Rochester, IN 46975  
Phone: 219-223-3980  
Fax: 219-223-5566  
[www.airvac.com](http://www.airvac.com)

Alar Engineering Corp.  
9651 W. 196th St.  
Mokena, IL 60448  
Phone: 708-479-6100  
Fax: 708-479-9059

Albright & Wilson Americas  
P.O. Box 4439  
Glen Allen, VA 23058-4439  
Phone: 804-968-6300  
Fax: 804-968-6385  
[www.albright-wilson.com](http://www.albright-wilson.com)

Alfa Laval Separation, Inc.  
955 Mearns Rd.  
Warminster, PA 18974-0556  
Phone: 215-443-4000  
Fax: 215-443-4155  
[www.alfalaval.com](http://www.alfalaval.com)

Alpine Technology, Inc.  
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Phone: 512-329-2809  
Fax: 512-328-4792

Alsop Engineering Co.  
P.O. Box 3449  
Kingston, NY 12402  
Phone: 914-338-0466  
Fax: 914-339-1063

Alzeta Corp.  
2343 Calle del Mundo  
Santa Clara, CA 95054  
Phone: 408-727-8282  
Fax: 408-727-9740

Ambient Technologies Inc.  
2999 N.E. 191 St., Ste. 407  
Aventura, FL 33180  
Phone: 305-937-0610  
Fax: 305-937-2137  
[www.ide-tech.com](http://www.ide-tech.com)

AMCEC, Inc.  
2525 Cabot Dr., Ste. 205  
Lisle, IL 60532  
Phone: 630-577-0400  
Fax: 630-577-0401  
[www.amcec.com](http://www.amcec.com)

American Bio Tech, Inc.  
3223 Harbor Dr.  
St. Augustine, FL 32095  
Phone: 904-825-1500  
Fax: 904-825-1524

American International Chemical, Inc.  
17 Strathmore Rd.  
Natic, MA 01760  
Phone: 508-655-5805  
Fax: 508-655-0927

American Minerals, Inc.  
901 E. Eighth Ave., Ste. 200  
King of Prussia, PA 19406  
Phone: 610-337-8030  
Fax: 610-337-8033  
[www.ceramics.com/enviro-blend](http://www.ceramics.com/enviro-blend)

American Products  
1049 Southeast Holbrook Ct.  
Port St. Lucie, FL 34952  
Phone: 561-398-9881  
Fax: 561-398-9840  
[www.americanproducts1.com](http://www.americanproducts1.com)

American Sigma, Inc.  
P.O. Box 820  
Medina, NY 14103  
Phone: 716-798-5580  
Fax: 716-798-5599  
[www.americansigma.com](http://www.americansigma.com)

AMETEK Drexelbrook  
205 Keith Valley Rd.  
Horsham, PA 19044  
Phone: 215-674-1234  
Fax: 215-674-2731  
[www.drexelbrook.com](http://www.drexelbrook.com)

Ametek Inc., Process & Analytical  
Division  
150 Freeport Rd.  
Pittsburgh, PA 15238  
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Fax: 412-826-0399  
[www.thermox.com](http://www.thermox.com)

Ametek, PMT Products  
820 Pennsylvania Blvd.  
Feasterville, PA 19053-7886  
Phone: 215-355-6900  
Fax: 215-355-2937  
[www.ametekusg.com](http://www.ametekusg.com)

AMETEK Rotron Biofiltration  
75 North St.  
Saugerties, NY 12477  
Phone: 914-246-3711  
Fax: 914-246-3802  
[www.rotrontmd.com](http://www.rotrontmd.com)

Amwell, Inc.  
1740 Molitor Rd.  
Aurora, IL 60505  
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Fax: 630-898-1647

Analytical Technology, Inc.  
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Oaks, PA 19456-9969  
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Fax: 610-917-0992  
[www.analyticaltechnology.com](http://www.analyticaltechnology.com)

Anatel Corp.  
2200 Central Ave.  
Boulder, CO 80301  
Phone: 303-442-5533  
Fax: 303-447-8365  
[www.anatel.com](http://www.anatel.com)

Andersen Instruments, Inc.  
500 Technology Ct.  
Smyrna, GA 30082-5210  
Phone: 770-319-9999  
Fax: 770-319-0336  
[www.anderseninstruments.com](http://www.anderseninstruments.com)

Andritz Sprout-Bauer S.A.  
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F-45071 Orleans Cedex 2, France  
Phone: 33-3851-5738  
Fax: 33-3863-1565

Andritz-Ruthner, Inc.  
1010 Commercial Blvd. S.  
Arlington, TX 76017  
Phone: 817-465-5611  
Fax: 817-468-3961  
[www.andritz.com](http://www.andritz.com)

Anthratech Western, Inc.  
7260 12th St. SE  
Calgary, Alberta, T2H 2S5  
Phone: 403-255-7377  
Fax: 403-255-3129

Applied Biochemists, Inc.  
W175 N11163 Stonewood Dr.  
Germantown, WI 53022  
Phone: 262-255-4449  
Fax: 262-255-4268  
[www.appliedbiochemists.com](http://www.appliedbiochemists.com)

Applied Process Technology, Inc.  
35 Wellington  
Conroe, TX 77034  
Phone: 409-539-4099  
Fax: 409-539-4089  
[www.centra-flo.com](http://www.centra-flo.com)

Applied Regenerative Technologies Co.  
45 Park Place S.  
Morristown, NJ 07960  
Phone: 201-984-8811  
Fax: 201-326-1845

Applied Spectrometry  
W226 N555G Eastmound Dr.  
Waukesha, WI 53186  
Phone: 414-896-2650  
Fax: N/A  
[www.chemscan.com](http://www.chemscan.com)

APV Crepaco, Inc.  
9525 Bryn Mawr Ave.  
Rosemont, IL 60018  
Phone: 847-678-4300  
Fax: 847-678-4407  
[www.apv.com](http://www.apv.com)

Aqua Ben Corp.  
1390 N. Manzanita St.  
Orange, CA 92867  
Phone: 714-771-6040  
Fax: 714-771-1465  
[www.aquaben.com](http://www.aquaben.com)

Aqua Care Systems  
9542 Hardpan Rd.  
Angola, NY 14006  
Phone: 716-549-2500  
Fax: 716-549-3950

Aqua Magnetics International, Inc.  
915-B Harbor Lake Dr.  
Safety Harbor, FL 34695  
Phone: 727-447-2575  
Fax: 727-726-8888

Aqua Products, Inc.  
25 Rutgers Ave.  
Cedar Grove, NJ 07009  
Phone: 973-857-2700  
Fax: 973-857-8981

Aqua-Aerobic Systems, Inc.  
P.O. Box 2026  
Rockford, IL 61130-0026  
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Fax: 815-654-2508  
[www.aqua-aerobic.com](http://www.aqua-aerobic.com)

Aqua-Chem, Inc.  
P.O. Box 421  
Milwaukee, WI 53201  
Phone: 414-359-0600  
Fax: 414-577-2723  
[www.aqua-chem.com](http://www.aqua-chem.com)

AquaClear Technologies Corp.  
1550 Harbor Bou, Ste. 130  
West Sacramento, CA 95691  
Phone: 916-372-6826  
Fax: 916-372-6827

Aqualogic Inc.  
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North Haven, CT 06473  
Phone: 203-248-8959  
Fax: 203-288-4308  
[www.aqualogic.com](http://www.aqualogic.com)

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Warren, NJ 07059-5191  
Phone: 732-563-2800  
Fax: 732-563-2816  
[www.aqualytics.com](http://www.aqualytics.com)

AquaPro, Inc.  
1573 Fairway View Dr.  
Birmingham, AL 35244  
Phone: 205-988-5824

Aquarium Systems  
8141 Tyler Blvd.  
Mentor, OH 44060  
Phone: 440-255-1997  
Fax: 440-255-8994

Aquatrol Ferr-X Corp.  
P.O. Box 531  
Toms River, NJ 08754  
Phone: 732-505-3100  
Fax: 732-505-3038

AquaTurbo Systems  
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Springdale, AR 72765  
Phone: 501-927-1300  
Fax: 501-927-0700

Arch Chemicals  
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Charleston, TN 37310  
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Fax: 877-321-2724  
[www.archwaterchemicals.com](http://www.archwaterchemicals.com)

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Fax: 905-457-1730  
[www.arlat.com](http://www.arlat.com)

Artisan Industries, Inc.  
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Waltham, MA 02451  
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Fax: 781-647-0143  
[www.artisanind.com](http://www.artisanind.com)

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Fax: 781-321-4421  
[www.asahi-america.com](http://www.asahi-america.com)

Ashbrook Corp.  
P.O. Box 16327  
Houston, TX 77222  
Phone: 281-449-0322  
Fax: 281-449-1324

Ashland Chemical, Drew Industrial  
One Drew Plaza  
Boonton, NJ 07005  
Phone: 973-236-7600  
Fax: 973-263-4495  
[www.ashchem.com](http://www.ashchem.com)

Astraco Water Engineering  
P.O. Box 52  
8560 AB Balk,  
Phone: 31-(0)514-608765  
Fax: 31-(0)514-608766

ATA Technologies Corp.  
1240 Valley Belt Rd.  
Cleveland, OH 44131  
Phone: 216-459-1930  
Fax: 216-459-1958  
[www.ata-technologies.com](http://www.ata-technologies.com)

Atlantic Ultraviolet Corp.  
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Hauppauge, NY 11788  
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Fax: 516-273-0771  
[www.atlanticuv.com](http://www.atlanticuv.com)

Atlas Polar Co., Hydrorake Division  
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Fax: 416-751-6475  
[www.atlaspolar.com](http://www.atlaspolar.com)

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Greensboro, NC 27409  
Phone: 336-668-7727  
Fax: 336-668-0537  
[www.atlas-stord.com](http://www.atlas-stord.com)

Auburn Systems LLC  
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Danvers, MA 01923  
Phone: 978-777-2460  
Fax: 978-777-8820  
[www.auburnsys.com](http://www.auburnsys.com)

Aurora Pump  
800 Airport Rd.  
Aurora, IL 60542-1494  
Phone: 630-859-7000  
Fax: 630-859-7060  
[www.pentairpump.com](http://www.pentairpump.com)

Automatic Filters, Inc.  
2672 S. La Cienega  
Los Angeles, CA 90034  
Phone: 310-839-2828  
Fax: 310-839-6878  
[www.tekleen.com](http://www.tekleen.com)

Automation Products, Inc.  
3030 Max Roy St.  
Houston, TX 77008-9981  
Phone: 713-869-0361  
Fax: 713-869-7332  
[www.dynatrolusa.com](http://www.dynatrolusa.com)

Avista Technologies  
133 North Pacific St., Ste. E  
San Marcos, CA 92069  
Phone: 760-744-0536  
Fax: 760-744-0619  
[www.avistatech.com](http://www.avistatech.com)

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Sandy, UT 84090-0488  
Phone: 801-576-1930  
Fax: 801-523-8450

Axsia Serck Baker, Inc.  
8601 Jameel Ste. 190  
Houston, TX 77040  
Phone: 713-934-8900  
Fax: 713-934-8688  
[www.axsia.com](http://www.axsia.com)

Azur Environmental  
2232 Rutherford Rd.  
Carlsbad, CA 92008-8883  
Phone: 760-438-8282  
Fax: 760-438-2980  
[www.azurenv.com](http://www.azurenv.com)

B.F. Goodrich Co.  
9911 Brecksville  
Brecksville, OH 44141  
Phone: 216-447-5000  
Fax: 216-447-5250

Badger Meter, Inc.  
P.O. Box 581390  
Tulsa, OK 74158  
Phone: 918-836-8411  
Fax: 918-832-9962

Bailey Polyjet  
P.O. Box 8070  
Fresno, CA 93747  
Phone: 559-252-4491  
Fax: 559-453-9030

Bailey-Fischer & Porter  
125 E. County Line Rd.  
Warminster, PA 18974  
Phone: 215-674-6000  
Fax: 215-674-7183  
[www.ebpa.com/bfp/](http://www.ebpa.com/bfp/)

Baker Hughes Process Systems  
14990 Yorktown Plaza  
Houston, TX 77040  
Phone: 713-934-4100  
Fax: 713-934-4108  
[www.bakerhughes.com](http://www.bakerhughes.com)

Baker Process - Municipal Division  
669 West 200 S.  
Salt Lake City, UT 84101-1020  
Phone: 801-526-2000  
Fax: 801-526-2014  
[www.bakerhughes.com](http://www.bakerhughes.com)

Baker Process/Ketema  
P.O. Box 1406  
El Cajon, CA 92022  
Phone: 619-449-0202  
Fax: 619-449-0883

Baler Equipment Co.  
P.O. Box 25150  
Portland, OR 97225  
Phone: 503-292-4118  
Fax: 503-297-5991  
[www.baler-eqpt.com](http://www.baler-eqpt.com)

Barnes Pumps, Inc.  
P.O. Box 603  
Piqua, OH 45356-0603  
Phone: 419-774-1511  
Fax: 419-774-1530

BASF  
Carl Bosch Strasse 38  
67056 Ludwigshafen, Germany  
Phone: 49-621-60-42258  
Fax: 49-621-60-72944

BASYS Technologies  
1345 Northland Dr.  
Mendota Heights, MN 55120  
Phone: 612-452-3300  
Fax: 612-683-8888  
[www.basystech.com](http://www.basystech.com)

Bayer Corp.  
100 Bayer Rd.  
Pittsburgh, PA 15205  
Phone: 412-777-2000  
Fax: 412-777-4109  
[www.bayerus.com](http://www.bayerus.com)

Beaird Industries, Inc.  
601 Benton Kelly St.  
Shreveport, LA 71106-7198  
Phone: 318-865-6351  
Fax: 318-868-1701  
[www.beairdindustries.com](http://www.beairdindustries.com)

BEKO Condensate Systems Corp.  
4140 Tuller Rd.  
Dublin, OH 43017  
Phone: 614-798-5275  
Fax: 614-798-5276

Bethlehem Corp.  
25th & Lennox St.  
Easton, PA 18045  
Phone: 610-258-7111  
Fax: 610-258-8154

BetzDearborn, Inc.  
4636 Somerton Rd.  
Trevose, PA 19053-6783  
Phone: 215-355-3300  
Fax: 215-953-5524  
[www.betzdearborn.com](http://www.betzdearborn.com)

BetzDearborn-Argo District  
185 Bosstick Blvd.  
San Marcos, CA 92069  
Phone: 760-727-2620  
Fax: 760-727-3380  
[www.argoscientific.com](http://www.argoscientific.com)



BG-WSA, Inc.  
2969 South Chase Ave.  
Milwaukee, WI 53207  
Phone: 414-481-4133  
Fax: 414-481-4134  
[www.bgwsa.com](http://www.bgwsa.com)

BIF  
16490 Chillicothe Rd.  
Chagrin Falls, OH 44023  
Phone: 440-543-5885  
Fax: 440-543-9128  
[www.bifwater.com](http://www.bifwater.com)

BioChem Technology, Inc.  
100 Ross Rd., Ste. 201  
King of Prussia, PA 19406  
Phone: 610-768-9360  
Fax: 610-768-9363  
[www.biochemtech.com](http://www.biochemtech.com)

BioLab, Inc.  
Tenax Rd., Trafford Park  
Manchester, M17 1WT England  
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Fax: 44-161-875-3175  
[www.wateradditives.com](http://www.wateradditives.com)

BioLab Inc.  
P.O. Box 1489  
Decatur, GA 30031-1489  
Phone: 404-378-1761  
Fax: 404-371-0373  
[www.wateradditives.com](http://www.wateradditives.com)

Bioprime, Ltd.  
14 N. Main St.  
White River Junction, VT 05001  
Phone: 802-291-6123  
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[www.bioprime.com](http://www.bioprime.com)

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[www.bioremtechnologies.com](http://www.bioremtechnologies.com)

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[www.biosint.com](http://www.biosint.com)

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1550 Valley Center Pkwy, Ste. 140  
Bethlehem, PA 18017  
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[www.bioscienceinc.com](http://www.bioscienceinc.com)

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[www.biothane.com](http://www.biothane.com)

Biothermica International, Inc.  
3333 Cavendish Blvd. Ste. 440  
Montreal, Canada H4B QM5  
Phone: 514-488-3881  
Fax: 514-488-3125

Biotrol  
10300 Valley View Rd., Ste. 107  
Eden Prairie, MN 55344  
Phone: 612-942-8032  
Fax: 612-942-8526

Bioway America  
9003H Lincoln Dr. W.  
Marlton, NJ 08053  
Phone: 609-268-6845  
Fax: 609-268-3482  
[www.bioway.net](http://www.bioway.net)

Blace Filtronics, Inc.  
2310 E. 2nd St.  
Vancouver, WA 98661  
Phone: 360-750-7709  
Fax: 360-750-7715

Blue-White Industries  
14931 Chestnut St.  
Westminster, CA 92683  
Phone: 714-893-8529  
Fax: 714-894-9492  
[www.bluwwhite.com](http://www.bluwwhite.com)

BOC Gases  
575 Mountain Ave.  
Murray Hill, NJ 07974  
Phone: 908-464-8100  
Fax: 888-262-3298  
[www.boc.com](http://www.boc.com)

Boliden Intertrade, Inc.  
3379 Peachtree, Ste. 300  
Atlanta, GA 30326  
Phone: 404-239-6700  
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Brackett Geiger  
P.O. Box 210163  
76151 Karlsruhe, Germany  
Phone: 49-721-5001-355  
Fax: 49-721-5001-344  
[www.brackettgeiger.de](http://www.brackettgeiger.de)

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[www.brackettgeiger.co.uk](http://www.brackettgeiger.co.uk)

Brackett Geiger USA, Inc.  
1335 Regents Park Dr, Ste. 140  
Houston, TX 77058  
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Fax: 281-480-8225  
[www.bgusa.com](http://www.bgusa.com)

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Buffalo Grove, IL 60089  
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[www.bran-luebbe.com](http://www.bran-luebbe.com)

Brandt Co.  
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Brentwood Industries, Inc.  
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Reading, PA 19603  
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Browning-Ferris Industries, Inc.  
P.O. Box 3151  
Houston, TX 77253  
Phone: 281-870-8100  
Fax: 281-870-7000  
[www.bfi.com](http://www.bfi.com)

Brunel Corp.  
1304 Twin Oaks  
Wichita Falls, TX 76302  
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BTG, Inc.  
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Norcross, GA 30071  
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Buffalo Technologies, Inc.  
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[www.buffalotechnologies.com](http://www.buffalotechnologies.com)

Calciquest, Inc.  
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[www.calciquest.com](http://www.calciquest.com)

Calgon Carbon Corp.  
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Calgon Corp.  
P.O. Box 1346  
Pittsburgh, PA 15230  
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Capital Controls Co.  
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Colmar, PA 18915  
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Fax: 215-997-4062  
[www.capitalcontrols.com](http://www.capitalcontrols.com)

Carboline Co.  
350 Hanley Industrial Ct.  
St. Louis, MO 63144  
Phone: 314-644-1000  
Fax: 314-644-4617  
[www.carboline.com](http://www.carboline.com)

Carbonite Filter Corp.  
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Delano, PA 18220  
Phone: 717-467-3350  
Fax: 717-467-7272

Carus Chemical Co., Inc.  
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Peru, IL 61354-0599  
Phone: 815-223-1500  
Fax: 815-224-6697  
[www.caruschem.com](http://www.caruschem.com)

CASS Water Engineering, Inc.  
17671 Cowan, Ste. 150  
Irvine, CA 92614-6031  
Phone: 949-474-3933  
Fax: 949-955-2021  
[www.sbrccass.com](http://www.sbrccass.com)

Catalytic Combustion Corp.  
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[www.catalyticcombustion.com](http://www.catalyticcombustion.com)

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Lake Zurich, IL 60047-1557  
Phone: 847-438-0334  
Fax: 847-438-0944  
[www.cpilink.com](http://www.cpilink.com)

CBI Walker, Inc.  
601 W. 143rd St.  
Plainfield, IL 60544  
Phone: 815-439-3100  
Fax: 815-439-4010  
[www.chicago-bridge.com](http://www.chicago-bridge.com)

Celgard LLC  
13800 S. Lakes Dr.  
Charlotte, NC 28273  
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Fax: 704-587-8585  
[www.liquicel.com](http://www.liquicel.com)

Celite Corp.  
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Lampoc, CA 93438-0519  
Phone: 805-735-7791  
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Centrisys Corp.  
501 North Ave.  
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Chemineer, Inc.  
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Fax: 308-381-8475  
[www.chiefind.com](http://www.chiefind.com)

Chlorinators, Inc.  
1044 SE Dixie Cutoff Rd.  
Stuart, FL 34994  
Phone: 561-288-4854  
Fax: 561-287-3238  
[www.regalchlorinators.com](http://www.regalchlorinators.com)

Church & Dwight Co. Inc.  
469 N. Harrison St.  
Princeton, NJ 08543-5297  
Phone: 609-497-7574  
Fax: 609-497-7176  
[www.churchdwright.com](http://www.churchdwright.com)

Ciba Specialty Chemicals  
P.O. Box 820  
Suffolk, VA 23434-0820  
Phone: 757-538-3700  
Fax: 757-538-3989  
[www.cibasc.com](http://www.cibasc.com)

Clack Corp.  
P.O. Box 500  
Windsor, WI 53598-0500  
Phone: 608-846-3010  
Fax: 608-846-2586  
[www.clackcorp.com](http://www.clackcorp.com)

Claude Laval Corp.  
1365 N. Clovis Ave.  
Fresno, CA 93727  
Phone: 559-255-1601  
Fax: 559-255-8093  
[www.lakos-laval.com](http://www.lakos-laval.com)

Clear-Flo International  
6224 Lakeland Ave. N. #108  
Brooklyn Park, MN 55428-2937  
Phone: 612-504-4554  
Fax: 612-504-4553  
[www.clean-flo.com](http://www.clean-flo.com)

Cleaver-Brooks  
P.O. Box 421  
Milwaukee, WI 53201  
Phone: 414-359-0600  
Fax: 414-577-3185  
[www.aqua-chem.com](http://www.aqua-chem.com)

ClorTec  
1077 Dell Ave., Ste. A  
Campbell, CA 95008  
Phone: 408-871-1300  
Fax: 408-871-1314  
[www.clortec.com](http://www.clortec.com)

CMI-Schneible Co.  
P.O. Box 100  
Holly, MI 48442  
Phone: 248-634-8211  
Fax: 248-634-2240

CMS Group, Inc.  
140 Snow Blvd., Ste. 200  
Concord Ontario, Canada L4K 4N9  
Phone: 905-660-7580  
Fax: 905-660-0243  
[www.rotordisk.com](http://www.rotordisk.com)

Cochrane Inc.  
P.O. Box 60191  
King of Prussia, PA 19406  
Phone: 610-265-5050  
Fax: 610-265-5432  
[www.cochrane.com](http://www.cochrane.com)

Colloid Environmental Technologies Co.  
1500 West Shure Dr.  
Arlington Heights, IL 60004-1434  
Phone: 847-392-5800  
Fax: 847-577-5571  
[www.cetco.com](http://www.cetco.com)

Composite Structures  
P.O. Box 737  
Aromas, CA 95004  
Phone: 831-726-2644  
Fax: 408-726-2609  
[www.accuraflo.com](http://www.accuraflo.com)

Conservatek Industries, Inc.  
498 Loop 336 E,  
Conroe, TX 77305  
Phone: 409-539-1747  
Fax: 409-539-5355  
[www.conservatek.com](http://www.conservatek.com)

Conversion Systems, Inc.  
1155 Business Center Dr.  
Horsham, PA 19044  
Phone: 215-956-5500  
Fax: 215-956-5433

Cook Screen Technologies, Inc.  
460 Hoover St. NE  
Minneapolis, MN 55413  
Phone: 612-617-4470  
Fax: 612-379-3149  
[www.pramfiltration](http://www.pramfiltration)

Coors Ceramics Co.  
1100 Commerce Park Dr.  
Oak Ridge, TN 37830  
Phone: 423-481-8021  
Fax: 423-481-0090

Copa Group  
Crest Industrial Estate, Marden  
Tonebridge, Kent, TN12 9QJ England  
Phone: 162-2-832444  
Fax: 162-2-831466

Corning, Inc.  
45 Nagog Park  
Acton, MA 01720  
Phone: 978-635-2200  
Fax: 978-635-2476  
[www.scienceproducts.corning.com](http://www.scienceproducts.corning.com)

Corrpro Waterworks, Inc.  
2421 Iorio St.  
Union, NJ 07083-8105  
Phone: 908-686-1770  
Fax: 908-686-1704

Coster Engineering  
P.O. Box 3407  
Mankato, MN 56002  
Phone: 507-625-6621  
Fax: 507-625-5883

Crane Pumps & Systems  
P.O. Box 603  
Piqua, OH 45356  
Phone: 937-615-3595  
Fax: 937-773-7157

Cromaglass Corp.  
P.O. Box 3215  
Williamsport, PA 17701  
Phone: 570-326-3396  
Fax: 570-326-6426

Crompton & Knowles Colors, Inc.  
P.O. Box 33188  
Charlotte, NC 28233  
Phone: 704-372-5890  
Fax: 704-332-8785

Cross Machine, Inc.  
167 Glen Ave.  
Berlin, NH 03570  
Phone: 603-752-6111  
Fax: 603-752-3825

CSM Worldwide/RaySolv  
P.O. Box 207  
Bound Brook, NJ 08805  
Phone: 732-981-0500  
Fax: 732-356-3629  
[www.csmworldwide.com](http://www.csmworldwide.com)

Culligan International Corp.  
One Culligan Pkwy.  
Northbrook, IL 60062  
Phone: 847-205-6000  
Fax: 847-205-6005  
[www.culligan.com](http://www.culligan.com)

Cytec Industries, Inc.  
Five Garret Mountain Plaza  
West Paterson, NJ 07424  
Phone: 973-357-3100  
Fax: 973-357-3065  
[www.cytec.com](http://www.cytec.com)

D.R. Sperry & Co.  
112 North Grant St.  
North Aurora, IL 60542  
Phone: 630-892-4361  
Fax: 630-892-1664

D&A Instrument Co.  
40 Seton Rd.  
Port Townsend, WA 98368  
Phone: 360-385-0272  
Fax: 360-385-0460

Dacar Chemical Co.  
1007 McCartney St.  
Pittsburgh, PA 15220  
Phone: 412-921-3620  
Fax: 412-921-4478

Danfoss/Instrumark  
1124 Wrigley Way  
Milpitas, CA 95035  
Phone: 408-262-0717  
Fax: 408-262-3610

David Brown Union Pumps Co.  
4600 W. Dickman Rd.  
Battle Creek, MI 49015-1098  
Phone: 616-966-4600  
Fax: 616-962-3534  
[www.unionpump.com](http://www.unionpump.com)

DBS Manufacturing, Inc.  
5421 Hillside Dr.  
Forest Park, GA 30297  
Phone: 404-768-2131  
Fax: 404-761-6360  
[www.dbsmfg.com](http://www.dbsmfg.com)

Dedert Corp.  
2000 Governors Dr.  
Olympia Fields, IL 60461-1074  
Phone: 708-747-7000  
Fax: 708-755-8815  
[www.dedert.com](http://www.dedert.com)

Delta Chemical Corp.  
2601 Cannery Ave.  
Baltimore, MD 21226  
Phone: 410-354-0100  
Fax: 410-354-1021

Delta Cooling Towers, Inc.  
P.O. Box 952  
Fairfield, NJ 07004-2970  
Phone: 973-227-0300  
Fax: 973-227-0458  
[www.deltacooling.com](http://www.deltacooling.com)

Derrick Corp.  
588 Duke Rd.  
Buffalo, NY 14225  
Phone: 716-683-9010  
Fax: 716-683-4991

DesalCo Ltd  
48 Par-la-Ville, Ste. 381  
Hamilton HM 11, Bermuda  
Phone: 441-292-2060  
Fax: 441-292-2024  
[www.desalco.bm](http://www.desalco.bm)

Dexsil Corp.  
One Hamden Park Dr.  
Hamden, CT 06517  
Phone: 203-288-3509  
Fax: 203-248-6523

DHV Water BV  
P.O. Box 484  
3800 AL Amersfoort, The Netherlands  
Phone: 31-33682200  
Fax: 31-33682301

Diagenex, Inc.  
288 Lindbergh Ave.  
Livermore, CA 94550  
Phone: 925-606-5600  
[www.diagenex.com](http://www.diagenex.com)

Dieterich Standard  
P.O. Box 9000  
Boulder, CO 80301  
Phone: 303-530-9600  
Fax: 303-530-7064

Diversified Remediation Controls, Inc.  
21801 Industrial Blvd.  
Rogers, MN 55374  
Phone: 612-428-3000  
Fax: 612-428-3660

Dontech, Inc.  
76 Center Dr.  
Gilberts, IL 60136  
Phone: 847-428-8222  
Fax: 847-428-6855

Douglas Engineering  
1015 Shary Circle  
Concord, CA 94518  
Phone: 925-827-4100  
Fax: 925-827-4999  
[www.douglaseng.com](http://www.douglaseng.com)

Dow Chemical Co.  
P.O. Box 1206  
Midland, MI 48641-9940  
Phone: 517-636-1000  
Fax: 517-638-9783  
[www.dow.com/liquidseps](http://www.dow.com/liquidseps)

Dresser Industries/Roots Division  
900 West Mount St.  
Connersville, IN 47331  
Phone: 765-827-9200  
Fax: 765-825-7669  
[www.rootsblower.com](http://www.rootsblower.com)

Duall Division, Met-Pro Corp.  
1550 Industrial Dr.  
Owosso, MI 48867  
Phone: 517-725-8184  
Fax: 517-725-8188  
[www.met-pro.com](http://www.met-pro.com)

Dürr Environmental, Inc.  
P.O. Box 930459  
Wixom, MI 48393-0459  
Phone: 248-668-5200  
Fax: 248-926-6570  
[www.durrenvironmental.com](http://www.durrenvironmental.com)

Dustex Corp.  
P.O. Box 7368  
Charlotte, NC 28241-7368  
Phone: 704-588-2030  
Fax: 704-588-2032  
[www.dustex.com](http://www.dustex.com)

DWT-Engineering Oy  
Raviraitti 3  
23800 Laitila, Finland  
Phone: 358-(0)2-461-800  
Fax: 358-(0)2-461-8400

Dynal, Inc.  
5 Delaware Dr.  
Lake Success, NY 11042  
Phone: 516-326-3270  
Fax: 516-326-3298

Dynaphore, Inc.  
2709 Willard Rd.  
Richmond, VA 23294  
Phone: 804-672-3464  
Fax: 804-282-1325

E. Beaudrey & Co.  
14 Boulevard Orano  
75018 Paris, France  
Phone: 42-57-14-35  
Fax: 42-64-74-62

E.I. Dupont De Nemours, Inc.  
P.O. Box 6101  
Newark, DE 19714-6101  
Phone: 302-774-1011  
Fax: 302-892-1705

E.S.G. Manufacturing, LLC  
P.O. Box 431  
Holden, LA 70744  
Phone: 225-567-9200  
Fax: 225-567-3091  
[www.pumpit.com](http://www.pumpit.com)

E-Cell Corp.  
52 Royal Rd.  
Guelph, Ontario, N1H 1G3  
Phone: 519-836-2260  
Fax: 519-836-0982  
[www.ecell.com](http://www.ecell.com)

Eagle-Picher Minerals, Inc.  
P.O. Box 12130  
Reno, NV 89510  
Phone: 775-824-7600  
Fax: 775-824-7694  
[www.epcorp.com](http://www.epcorp.com)

Eaglebrook, Inc.  
4801 Southwick Dr.  
Matteson, IL 60443  
Phone: 708-747-5038  
Fax: 708-747-3278  
[www.eaglebrook.net](http://www.eaglebrook.net)

Earth Science Laboratories, Inc.  
P.O. Box 5007  
Bella Vista, AR 72714  
Phone: 501-855-5800  
Fax: 501-855-5806  
[www.earthsciencelabs.com](http://www.earthsciencelabs.com)

Eco Purification Systems USA, Inc.  
1450 South Rolling Rd.  
Baltimore, MD 21227  
Phone: 410-455-5770  
Fax: 410-455-5777  
[www.eps.com](http://www.eps.com)

Ecolab Inc.  
1345 Taney  
North Kansas City, MO 64116  
Phone: 816-842-0560  
Fax: 816-842-6388

Ecolochem, Inc.  
P.O. Box 12775  
Norfolk, VA 23502  
Phone: 757-855-9000  
Fax: 757-855-1478  
[www.ecolochem.com](http://www.ecolochem.com)

Ecoloquip Inc.  
1657 Oak Tree Dr.  
Houston, TX 77080  
Phone: 713-849-1984  
Fax: 713-827-9396  
[www.ecoloquip.com](http://www.ecoloquip.com)

Ecolotech Corp.  
P.O. Box 1268  
Flat Rock, NC 28731-1268  
Phone: 828-692-2276  
Fax: 828-692-2229



Eden Equipment Co.  
17552 Griffin  
Huntington Beach, CA 92647  
Phone: 714-842-8181  
Fax: 714-842-1284

EET Inc.  
4710 Bellaire Blvd., Ste. 300  
Houston, TX 77401  
Phone: 713-662-0727  
Fax: 713-662-2322

Eichrom Industries, Inc.  
8205 South Cass, Ste. 111  
Darien, IL 60561  
Phone: 630-963-0320  
Fax: 630-963-0381

Ejector Systems, Inc.  
232 Westgate Dr.  
Carol Stream, IL 60188  
Phone: 630-668-5150  
Fax: 630-668-6270

EKA Chemicals  
1775 West Oak Commons Ct.  
Marietta, GA 30062  
Phone: 770-578-0858  
Fax: 770-321-5865  
[www.ekachem.com](http://www.ekachem.com)

Ekokan  
P.O. Box 5354  
Cary, NC 27512  
Phone: 919-469-3727  
Fax: 919-467-0294

Elf Atochem North America, Inc.  
2000 Market St.  
Philadelphia, PA 19103  
Phone: 215-419-7000  
Fax: 215-419-5230  
[www.elf-atochem.com](http://www.elf-atochem.com)

EMI, Inc.  
P.O. Box 912  
Clinton, CT 06413  
Phone: 860-669-1199  
Fax: 860-669-7461

EncyNova International, Inc.  
557 C Burbank St.  
Broomfield, CO 80020  
Phone: 303-404-3583  
Fax: 303-466-7105

Endress+Hauser  
2350 Endress Pl.  
Greenwood, IN 46143  
Phone: 317-535-7138  
Fax: 317-535-8498  
[www.endress](http://www.endress)

Enduro Composite Systems  
1005 Bluemound Rd.  
Fort Worth, TX 76131  
Phone: 817-232-1127  
Fax: 817-232-1582

Energy Recovery, Inc.  
820 Greenbriar Circle, Ste. 24  
Chesapeake, VA 23320  
Phone: 757-420-8149  
Fax: 757-523-7349

Engelhard Corp.  
554 Engelhard Dr.  
Seneca, SC 29678  
Phone: 864-882-9841  
Fax: 864-885-1374

Engineering Specialties, Inc.  
P.O. Box 2960  
Covington, LA 70434  
Phone: 504-892-0071  
Fax: 504-892-0474

Entoleter, Inc.  
251 Welton St.  
Hamden, CT 06517  
Phone: 203-787-3575  
Fax: 203-787-1492

Enviro-Care Co.  
1214 Shappert Dr.  
Rockford, IL 61115  
Phone: 815-282-9064  
Fax: 815-282-4121  
[www.enviro-care.com](http://www.enviro-care.com)

Enviroflow, Inc.  
12181 Balls Ford Rd.  
Manassas, VA 22110  
Phone: 703-368-9067  
Fax: 703-368-7336

Envirogen  
4100 Quakerbridge Rd.  
Lawrenceville, NJ 08648  
Phone: 609-936-9300  
Fax: 609-936-9221

Environetics, Inc.  
1201 Commerce St.  
Lockport, IL 60441  
Phone: 815-838-8331  
Fax: 815-838-8336  
[www.environmenticsinc.com](http://www.environmenticsinc.com)

Environment One Corp.  
2773 Balltown Rd.  
Niskayuna, NY 12309-1090  
Phone: 518-346-6161  
Fax: 518-346-6188  
[www.eone.com](http://www.eone.com)

Environmental Devices Corp.  
80 Essex Hill  
Haverhill, MA 01832  
Phone: 978-521-1514  
Fax: 978-521-1628

Environmental Dynamics Inc.  
5601 Paris Rd.  
Columbia, MO 65202-9399  
Phone: 573-474-9456  
Fax: 573-474-6988  
[www.wastewater.com](http://www.wastewater.com)

Enviropax, Inc.  
P.O. Box 65039  
Salt Lake City, UT 84165  
Phone: 801-263-8880  
Fax: 801-263-8898

Enviroquip, Inc.  
P.O. Box 9069  
Austin, TX 78728-8519  
Phone: 512-834-6000  
Fax: 512-834-6039  
[www.enviroquip.com](http://www.enviroquip.com)

EnviroSystems Supply  
735 Commerce Circle  
Longwood, FL 32750  
Phone: 407-767-8007  
Fax: 407-767-2474  
[www.alenco.com](http://www.alenco.com)

Envirotech Pumpsystems  
P.O. Box 209  
Salt Lake City, UT 84110-0209  
Phone: 801-359-8731  
Fax: 801-530-7531

EPG Companies, Inc.  
P.O. Box 427  
Rogers, MN 55374  
Phone: 612-424-2613  
Fax: 612-493-4812

Equipment Manufacturing Corp.  
2615 Pacific Park Dr.  
Whittier, CA 90601  
Phone: 562-908-7696  
Fax: 562-908-7698

Etus, Inc.  
1511 Kastner Pl.  
Sanford, FL 32771  
Phone: 407-321-7910  
Fax: 407-321-3098  
[www.env-sol.com/etus](http://www.env-sol.com/etus)

Eutek Systems, Inc.  
El Camino Ave., #100  
Carmichael, CA 95608-4733  
Phone: 916-972-9272  
Fax: 916-972-9357

Everfilt Corp.  
3167 Progress Circle  
Mira Loma, CA 91752  
Phone: 909-360-8380  
Fax: 909-360-8384

Exceltec International Corp.  
1110 Industrial Blvd.  
Sugar Land, TX 77478  
Phone: 281-240-6770  
Fax: 281-240-6762  
[www.sanilec.com](http://www.sanilec.com)

F.B. Leopold Co., Inc.  
227 S. Division St.  
Zelienople, PA 16063  
Phone: 724-452-6300  
Fax: 724-452-1377  
[www.fbleopold.com](http://www.fbleopold.com)

F.E. Myers Co.  
1101 Myers Pkwy.  
Ashland, OH 44805  
Phone: 419-289-1144  
Fax: 419-289-6658  
[www.pentairpump.com](http://www.pentairpump.com)

Fairbanks Morse Pump Corp.  
3601 Fairbanks Ave.  
Kansas City, KS 66109-0999  
Phone: 913-371-5000  
Fax: 913-371-2272  
[www.pentairpump.com](http://www.pentairpump.com)

Fairfield Service Co.  
240 Boone Ave.  
Marion, OH 43302  
Phone: 740-387-3335  
Fax: 740-387-4869  
[www.fairfieldengineering.com](http://www.fairfieldengineering.com)

Falmouth Products  
Box 541  
Falmouth, MA 02541  
Phone: 508-548-6686  
Fax: 508-548-8144

Farmer Automatic of America, Inc.  
P.O. Box 39  
Register, GA 30452  
Phone: 912-681-2763  
Fax: 912-681-1096  
[www.farmerautomaticusa.com](http://www.farmerautomaticusa.com)

Farr Co.  
3501 Airport Rd.  
Jonesboro, AR 72401  
Phone: 870-933-8048  
Fax: 800-222-6891  
[www.farrco.com](http://www.farrco.com)

FE3, Inc.  
P.O. Box 808  
Celina, TX 75009  
Phone: 972-382-2381  
Fax: 972-382-3211  
[www.fe3.com](http://www.fe3.com)

Fen-Tech Environmental, Inc.  
4306 South Hwy. 377  
Brownwood, TX 76801  
Phone: 800-777-4512  
Fax: 830-393-4092

Ferro Corp.  
P.O. Box 389  
East Rochester, NY 14445  
Phone: 716-586-8770  
Fax: 716-586-7154

Filter Products  
25 Grants Mill Rd.  
Wrentham, MA 02093  
Phone: 508-384-0233  
Fax: 508-384-0234

Filter Specialists, Inc.  
P.O. Box 735  
Michigan City, IN 46361  
Phone: 219-879-3307  
Fax: 219-877-0632  
[www.fsifilters.com](http://www.fsifilters.com)

Filtra-Systems Hydromation  
4000 Town Center, Ste. 100  
Southfield, MI 48075  
Phone: 248-356-9090  
Fax: 248-356-2818

Filtronics, Inc.  
4000 Leaverton Ct.  
Anaheim, CA 92807  
Phone: 714-630-5040  
Fax: 714-630-1160

Fisher Controls International, Inc.  
P.O. Box 190  
Marshalltown, IA 50158  
Phone: 515-754-3000  
Fax: 515-754-2830

Flo Trend Systems, Inc.  
707 Lehman  
Houston, TX 77018-1513  
Phone: 713-699-0152  
Fax: 713-699-8054  
[www.flotrend.com](http://www.flotrend.com)

Flow Process Technologies, Inc.  
11917 Windfern Rd.  
Houston, TX 77064  
Phone: 281-469-2777  
Fax: 281-469-2232

Floway Pumps, Inc.  
2494 S. Railroad Ave.  
Fresno, CA 93706  
Phone: 209-442-4000  
Fax: 209-442-3098

Fluid Dynamics, Inc.  
6595 Odell Place, Ste. E  
Boulder, CO 80301-3316  
Phone: 303-530-7300  
Fax: 303-530-7754

Fluidyne Corp.  
2816 West First St.  
Cedar Falls, IA 50613  
Phone: 319-266-9967  
Fax: 319-277-6034  
[www.fluidynecorp.com](http://www.fluidynecorp.com)

FMC Corp., Hydrogen Peroxide  
Division  
US Highway #1  
Princeton, NJ 08543  
Phone: 609-951-3122  
Fax: 609-951-3668

Force Flow Equipment  
1150-D Burnett Ave.  
Concord, CA 94520  
Phone: 925-686-6700  
Fax: 925-686-6713  
[www.forceflow.com](http://www.forceflow.com)

Ford Hall Co., Inc.  
P.O. Box 54312  
Lexington, KY 40555  
Phone: 606-624-3320  
Fax: 606-624-3320  
[www.fordhall.com](http://www.fordhall.com)

Formulabs, Inc.  
1710 Commerce Dr.  
Piqua, OH 45356  
Phone: 937-773-8933  
Fax: 937-773-3055

Franklin Miller, Inc.  
60 Okner Pkwy.  
Livingston, NJ 07039  
Phone: 973-535-9200  
Fax: 973-535-6269  
[www.franklinmiller.com](http://www.franklinmiller.com)

Futura Coatings, Inc.  
9200 Latty Ave.  
Hazelwood, MO 63042-2805  
Phone: 314-521-4100  
Fax: 314-521-7255

G.E.T. Industries, Inc.  
P.O. Box 640  
Brampton, Ontario, Canada L6V 2L6  
Phone: 905-451-9900  
Fax: 905-451-5376  
[www.grindhog.com](http://www.grindhog.com)

GA Industries, Inc.  
9025 Marshall Rd.  
Cranberry Township, PA 16046-3696  
Phone: 724-776-1020  
Fax: 724-776-1254  
[www.gaindustries.com](http://www.gaindustries.com)

Gardner Denver Blower Division  
100 Gardner Park  
Peachtree City, GA 30209  
Phone: 770-486-5655  
Fax: 770-486-5629  
[www.gardnerdenver.com](http://www.gardnerdenver.com)

Garland Manufacturing Co.  
P.O. Box 538  
Saco, ME 04072-0538  
Phone: 207-283-3693  
Fax: 207-283-4834

Gast Manufacturing, Inc.  
P.O. Box 97  
Benton Harbor, MI 49023  
Phone: 616-926-6171  
Fax: 616-925-8288  
[www.gastmfg.com](http://www.gastmfg.com)

Gauld Equipment Sales Co.  
P.O. Box 1129  
Theodore, AL 36582  
Phone: 334-653-8558  
Fax: 334-653-0533  
[www.gauld.com](http://www.gauld.com)

GDT Corp.  
20805 N. 19th St.  
Phoenix, AZ 85027  
Phone: 623-587-8858  
Fax: 623-587-1511  
[www.gdt-h2o.com](http://www.gdt-h2o.com)

GE Reuter-Stokes  
Edison Park, 8499 Darrow Rd.  
Twinsburg, OH 44087-2398  
Phone: 330-435-3755  
Fax: 330-425-4045

Gebr. Bellmer GmbH  
P.O. Box 1369  
Niefern-Oschelbronn, D-75220  
Germany  
Phone: 072-33-740  
Fax: 072-74-215

General Chemical Corp.  
90 E. Halsey Rd.  
Parsippany, NJ 07054  
Phone: 973-515-0900  
Fax: 973-515-4461  
[www.genchem.com](http://www.genchem.com)

Geo-Chem Technologies, Inc.  
57436 Gearharts Landing Rd.  
Three Rivers, MI 49093  
Phone: 616-244-5373  
Fax: 616-244-5373

Geoenergy International Corp.  
7617 South 180th St.  
Kent, WA 98032  
Phone: 425-251-0407  
Fax: 425-251-0414  
[www.geoenergy.com](http://www.geoenergy.com)

Geotech/ORS Environmental Systems  
1441 West 46th Ave. #17  
Denver, CO 80211  
Phone: 303-433-7101  
Fax: 303-477-1230  
[www.geotechenv.com](http://www.geotechenv.com)

Geschmay GmbH  
P.O Box 460  
D-73035 Goppingen, Germany  
Phone: 07161-604-0  
Fax: 07161-604-105  
[www.geschmay.com](http://www.geschmay.com)

Girard Industries, Inc.  
6531 N. Eldridge Pkwy.  
Houston, TX 77041  
Phone: 713-466-3100  
Fax: 713-466-8050

GL&V/Dorr-Oliver, Inc.  
612 Wheelers Farm Rd.  
Milford, CT 06460-8719  
Phone: 203-876-5400  
Fax: 203-876-5432  
[www.dorr-oliver.com](http://www.dorr-oliver.com)

Glegg Water Conditioning Co.  
29 Royal Rd.  
Guelph, Ontario, Canada N1H 1G2  
Phone: 519-836-0500  
Fax: 519-836-9373  
[www.glegg.com](http://www.glegg.com)

GLI International  
9020 W. Dean Rd.  
Milwaukee, WI 53224  
Phone: 414-355-3601  
Fax: 414-355-8346  
[www.gliint.com](http://www.gliint.com)

Global Technologies  
8855 N. 55th St.  
Milwaukee, WI 53223-2358  
Phone: 414-365-6430  
Fax: 414-365-6410  
[www.anguil.com](http://www.anguil.com)

GNESYS, Inc.  
3259 Whitebrook Dr., Ste. D100  
Memphis, TN 38118  
Phone: 901-794-2665  
Fax: 901-794-1960  
[www.hydrasep.com](http://www.hydrasep.com)

Goal Line Environmental Technologies  
11141 Outlet Dr.  
Knoxville, TN 37932  
Phone: 423-671-4045  
Fax: 423-671-4047  
[www.glet.com](http://www.glet.com)

Goodnature Products, Inc.  
P.O. Box 866  
Buffalo, NY 14240  
Phone: 716-855-3325  
Fax: 716-855-3328

Goodtech ASA  
P.O. Box 429  
N-1301 Sandvika, Norway  
Phone: 47-6755-1999  
Fax: 47-6755-1990  
[www.goodtech.no](http://www.goodtech.no)

Goodwin Pumps of America  
One Floodgate Rd.  
Bridgeport, CT 08014  
Phone: 609-467-3636  
Fax: 609-467-4841

Gorman-Rupp Co.  
305 Bowman St.  
Mansfield, OH 44901  
Phone: 419-755-1011  
Fax: 419-755-1251  
[www.gormanrupp.com](http://www.gormanrupp.com)

Graham Manufacturing Co.  
20 Florence Ave.  
Batavia, NY 14020  
Phone: 716-343-2216  
Fax: 716-343-1097  
[www.graham-mfg.com](http://www.graham-mfg.com)

Grande, Novac & Associates, Inc.  
3532 Ashby  
Montreal, Quebec, Canada H4R 2C1  
Phone: 514-339-1131  
Fax: 514-339-9720  
[www.gnainc.com](http://www.gnainc.com)

Graver Co.  
750 Walnut Ave.  
Crawford, NJ 07016-3348  
Phone: 908-653-4200  
Fax: 908-653-4300  
[www.graver.com](http://www.graver.com)

Gravity Flow Systems, Inc.  
9542 Hardpan Rd.  
Angola, NY 14006  
Phone: 716-549-2500  
Fax: 716-549-6250  
[www.aquacarefsd.com](http://www.aquacarefsd.com)

Great Lakes International, Inc.  
1905 Kearny Ave.  
Racine, WI 53403  
Phone: 262-634-2386  
Fax: 262-634-6259

Gundle Lining Systems, Inc.  
19103 Gundle Rd.  
Houston, TX 77073  
Phone: 281-443-8564  
Fax: 281-875-6010  
[www.gseworld.com](http://www.gseworld.com)

Guzzler Manufacturing, Inc.  
575 N. 37th St.  
Birmingham, AL 35222  
Phone: 205-591-2477  
Fax: 205-591-2495

Gyulavari Consulting Kft.  
Post Office Box 62  
H-1399 Budapest, Hungary  
Phone: 36-1-318-5688  
Fax: 36-1-137-1526

H.I.L. Technology, Inc.  
94 Hutchins Dr.  
Portland, ME 04102  
Phone: 207-756-6200  
Fax: 207-756-6212  
[www.hil-tech.com](http://www.hil-tech.com)

H&H Eco Systems, Inc.  
505 Evergreen Dr.  
North Bonneville, WA 98639  
Phone: 509-427-7353  
Fax: 509-427-3627

Hach Co.  
P.O. Box 389  
Loveland, CO 80539-0389  
Phone: 970-669-3050  
Fax: 970-669-2932  
[www.hach.com](http://www.hach.com)

Hadley Industries  
5900 West Fourth St.  
Ludington, MI 49431  
Phone: 231-845-0537  
Fax: 231-843-3882

Hammonds  
15760 W. Hardy #400  
Houston, TX 77060  
Phone: 281-820-5674  
Fax: 281-847-1857  
[www.hammondscos.com](http://www.hammondscos.com)

Hankin Environmental Services, Inc.  
P.O. Box 935  
Somerville, NJ 08876  
Phone: 908-722-9595  
Fax: 908-722-9514

Hans Huber GmbH  
Postfach 63  
D-92332 Berching, Germany  
Phone: 49-8462-2010  
Fax: 49-8462-27103  
[www.huber.de](http://www.huber.de)

Hans Huber/Huber Technology  
5825 Glenridge Dr. #3-101G  
Atlanta, GA 30328  
Phone: 404-250-3582  
Fax: 404-250-3583  
[www.huber-technology.com](http://www.huber-technology.com)

Harmsco Filtration Products  
P.O. Box 14066  
North Palm Beach, FL 33408  
Phone: 561-848-9628  
Fax: 561-845-2474  
[www.harmsco.com](http://www.harmsco.com)

Harris Waste Management Group, Inc.  
200 Clover Reach Dr.  
Peachtree City, GA 30269  
Phone: 770-631-7290  
Fax: 770-631-7299

Haynes International, Inc.  
1020 W. Park Ave.  
Kokomo, IN 46904  
Phone: 765-456-6000  
Fax: 765-456-6905

Hayward Industrial Products, Inc.  
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Elizabeth, NJ 07207  
Phone: 908-351-5400  
Fax: 908-351-7893

Hazleton Environmental, Inc.  
125 Butler Dr.  
Hazleton, PA 18201  
Phone: 570-454-7515  
Fax: 570-454-7520  
[www.hazletonenvr.com](http://www.hazletonenvr.com)

Headworks, Inc.  
9601 Katy Freeway, Ste. 470  
Houston, TX 77024  
Phone: 713-647-6667  
Fax: 713-647-0999

Healy-Ruff Co.  
2485 North Fairview Ave.  
St. Paul, MN 55113  
Phone: 651-633-7522  
Fax: 651-633-2671

Heinkel Filtering Systems, Inc.  
520 Sharptown Rd.  
Swedesboro, NJ 08085  
Phone: 856-467-3399  
Fax: 856-467-1010

Heyl & Patterson, Inc.  
P.O. Box 36  
Pittsburgh, PA 15230-0036  
Phone: 412-788-6900  
Fax: 412-788-6913

HF Scientific, Inc.  
3170 Metro Pkwy.  
Ft. Myers, FL 33916-7597  
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Fax: 941-332-7643  
[www.hfscientific.com](http://www.hfscientific.com)

Hi-Tech Environmental, Inc.  
P.O. Box 360597  
Birmingham, AL 35236  
Phone: 205-987-8976  
Fax: 205-987-8996  
[www.hi-techenv.com](http://www.hi-techenv.com)

Highland Tank & Manufacturing  
1 Highland Rd.  
Stoystown, PA 15563  
Phone: 814-893-5701  
Fax: 814-893-6126  
[www.highlandtank.com](http://www.highlandtank.com)

Hindon Corp.  
2055 Bee's Ferry Rd.  
Charleston, NC 29414  
Phone: 843-763-6616  
Fax: 843-763-2338

Hinsilblon Laboratories  
516-1 SE 47th Terrace  
Cape Coral, FL 33904  
Phone: 941-540-7766  
Fax: 941-540-0076



Hitachi Maxco, Ltd.  
1630 Cobb International Rd.  
Kennesaw, GA 30152  
Phone: 770-424-9350  
Fax: 770-424-9145  
[www.hitmax.com](http://www.hitmax.com)

Hitachi Metals America, Ltd.  
2400 Westchester Ave.  
Purchase, NY 10577  
Phone: 914-694-9200  
Fax: 914-694-9279

Hoffland Environmental Inc.  
10391 Silver Springs Rd.  
Conroe, TX 77303  
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Fax: 409-856-4589

Homa Pump Technology  
18 Elmcroft  
Stamford, CT 06902  
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Fax: 203-356-1064

Hosokawa Bepex Corp.  
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Minneapolis, MN 55413  
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Fax: 612-331-1046  
[www.bepex.com](http://www.bepex.com)

Howe-Baker Engineers, Inc.  
P.O. Box 956  
Tyler, TX 75710  
Phone: 903-597-0311  
Fax: 903-597-8670

HRI-Biotek  
203 S. First St., Ste. 100  
Lufkin, TX 75901  
Phone: 409-632-9945  
Fax: 409-632-9948  
[www.hri-rig.com](http://www.hri-rig.com)

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CH-8330 Pfaffikon, Switzerland  
Phone: 41-1952-2211  
Fax: 41-1952-2552  
[www.hubersuhner.com](http://www.hubersuhner.com)

Hungerford & Terry, Inc.  
P.O. Box 650  
Clayton, NJ 08312  
Phone: 609-881-3200  
Fax: 609-881-6859

Huntington Environmental Systems, Inc.  
707C West Algonquin Rd.  
Schaumburg, IL 60005  
Phone: 847-545-8800  
Fax: 847-545-1946  
[www.Huntington1.com](http://www.Huntington1.com)

Huron Tech Corp.  
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Delco, NC 28436  
Phone: 910-655-3845  
Fax: 910-655-3892

Hychem, Inc.  
10014 N. Dale Maybry Hwy.  
Tampa, FL 33618  
Phone: 813-963-6214  
Fax: 813-960-0175  
[www.hychem.com](http://www.hychem.com)

Hyde Marine, Inc.  
28045 Ranney Pkwy.  
Westlake, OH 44145  
Phone: 440-871-8000  
Fax: 440-871-8104

Hydranautics  
401 Jones Rd.  
Oceanside, CA 92054  
Phone: 760-901-2500  
Fax: 760-901-2578  
[www.membranes.com](http://www.membranes.com)

Hydro Gate Corp.  
6101 North Dexter St.  
Commerce City, CO 80022  
Phone: 303-288-7873  
Fax: 303-287-8531  
[www.hydrogate.com](http://www.hydrogate.com)

Hydro-Flo Technologies, Inc.  
205 E. Kehoe Blvd.  
Carol Stream, IL 60188  
Phone: 630-462-7550  
Fax: 630-462-7728  
[www.hydroflootech.com](http://www.hydroflootech.com)

HydroCal, Inc.  
22732 Granite Way, Ste. A  
Laguna Hills, CA 92653  
Phone: 949-455-0765  
Fax: 949-455-0764  
[www.hydrocal.com](http://www.hydrocal.com)

Hydrolab Corp.  
8700 Cameron Rd., Ste. 100  
Austin, TX 78754  
Phone: 512-255-8841  
Fax: 512-832-8838

Hydropress Wallander & Co., AB  
P.O. Box 125  
Lindome, SE-437 22, Sweden  
Phone: 46-31-995050  
Fax: 46-31-995133

IDEXX Laboratories, Inc.  
1 IDEXX Dr.  
Westbrook, ME 04092  
Phone: 207-856-0300  
Fax: 207-856-0346

Idreco USA, Ltd.  
3494 Progress Dr., Ste. B  
Bensalem, PA 19020  
Phone: 215-638-2111  
Fax: 215-638-2114  
[www.idreco.com](http://www.idreco.com)

ILC Dover, Inc.  
One Moonwalker Rd.  
Frederica, DE 19946  
Phone: 302-335-3911  
Fax: 302-335-1320  
[www.ilcdover.com](http://www.ilcdover.com)

IN USA, Inc.  
100 Crescent Rd., Unit 1B  
Needham, MA 02194  
Phone: 781-444-2929  
Fax: 781-444-9229  
[www.inusaozone.com](http://www.inusaozone.com)

In-Situ, Inc.  
210 S. Third St.  
Laramie, WY 82073  
Phone: 307-742-8213  
Fax: 307-721-7598  
[www.in-situ.com](http://www.in-situ.com)

Inchen USA, Inc.  
1920 E. Hallandale Beach Blvd.,  
Ste. 607  
Hallandale, FL 33009  
Phone: 954-456-7165  
Fax: 954-455-8856

Industrial Analytics Corp.  
1 Orchard Park Rd.  
Madison, CT 06443  
Phone: 203-245-0380  
Fax: 203-245-3698

Industrial Fabrics Corp.  
7160 Northland Circle  
Minneapolis, MN 55428  
Phone: 612-535-3220  
[www.ifcfabrics.com](http://www.ifcfabrics.com)

Industrial Filter & Pump Mfg. Co.  
5900 Ogden Ave.  
Cicero, IL 60650-3888  
Phone: 708-656-7800  
Fax: 708-656-7816

Infilco Degremont, Inc.  
P.O. Box 1390  
Richmond, VA 23255-1390  
Phone: 804-756-7600  
Fax: 804-756-7645  
[www.infilcodegremont.com](http://www.infilcodegremont.com)

Integrated Environmental Solutions, Inc.  
3787 Old Middleburg Rd., Ste. 3  
Jacksonville, FL 33210  
Phone: 904-778-1188  
Fax: 904-778-0201

International Dioxide, Inc.  
554 Ten Rod Rd.  
N. Kingston, RI 02852-4220  
Phone: 401-294-9575  
Fax: 401-295-7108

International Filter Media  
P.O. Box 216  
Hazelton, PA 18201-0458  
Phone: 570-459-1491  
Fax: 570-455-7510

Invincible AirFlow Systems  
P.O. Box 380  
Baltic, OH 43804  
Phone: 330-897-3200  
Fax: 330-897-3400  
[www.invincibleair.com](http://www.invincibleair.com)

Ionics, Inc.  
65 Grove St.  
Watertown, MA 02172  
Phone: 617-926-2500  
Fax: 617-926-4303  
[www.ionics.com](http://www.ionics.com)

Ionics RCC  
3006 Northup Way  
Bellevue, WA 98004-1407  
Phone: 425-828-2400  
Fax: 425-828-0526  
[www.ionicsrcc.com](http://www.ionicsrcc.com)

Isco, Inc.  
P.O. Box 82531  
Lincoln, NE 68501-2531  
Phone: 402-464-0231  
Fax: 402-465-3064  
[www.isco.com](http://www.isco.com)

ITT A-C Pump  
1150 Tennessee Ave.  
Cincinnati, OH 45229  
Phone: 513-482-2500  
Fax: 513-482-2569  
[www.ittacpump.com](http://www.ittacpump.com)

ITT Flygt Corp.  
P.O. Box 1004  
Trumbull, CT 06611-0943  
Phone: 203-380-4700  
Fax: 203-380-4705  
[www.flygt.com](http://www.flygt.com)

IX Services Co.  
1102 Holly St.  
Las Cruces, NM 88005  
Phone: 505-526-2838  
Fax: 505-526-2838

Jaeger Products, Inc.  
1611 Peachleaf  
Houston, TX 77039  
Phone: 281-449-9500  
Fax: 281-449-9400  
[www.jaeger.com](http://www.jaeger.com)

Jay R. Smith Mfg. Co.  
P.O. Box 3237  
Montgomery, AL 36109-0237  
Phone: 334-277-8520  
Fax: 334-272-7396  
[www.jrsmith.com](http://www.jrsmith.com)

JBF Environmental Technology  
18 Beach St.  
Seymour, CT 06583  
Phone: 203-888-7700  
Fax: 203-888-7720  
[www.jbfenv.com](http://www.jbfenv.com)

JBS Instruments  
311 D St.  
West Sacramento, CA 95605  
Phone: 916-372-0534  
Fax: 916-372-1624

JDV Equipment Corp.  
216 Little Falls Rd., Unit 1  
Cedar Falls, NJ 07009  
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Jeffrey Chain Corp.  
2307 Maden Dr.  
Morristown, TN 37813-2898  
Phone: 423-586-1951  
Fax: 423-581-2399  
[www.jeffreychain.com](http://www.jeffreychain.com)

Jet, Inc.  
750 Alpha Dr.  
Cleveland, OH 44143  
Phone: 440-461-2000  
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John Meunier, Inc.  
6290 Perinault  
Montreal Quebec, Canada H4K 1K5  
Phone: 514-334-7230  
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[www.johnmeunier.com](http://www.johnmeunier.com)

John Zink Co.  
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Tulsa, OK 74121-1220  
Phone: 918-234-1800  
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Jones MacCrea, Inc.  
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Syracuse, NY 13217-6030  
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JWC Environmental  
290 Paularino Ave.  
Costa Mesa, CA 92626  
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Fax: 949-833-8858  
[www.jwce.com](http://www.jwce.com)

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[www.ktron.com](http://www.ktron.com)

Kady International  
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Phone: 207-883-4141  
Fax: 207-883-8241  
[www.kadyinternational.com](http://www.kadyinternational.com)

Kason Corp.  
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Fax: 973-258-9533  
[www.kason.com](http://www.kason.com)

KCC Corrosion Control Co.  
4010 Trey Rd.  
Houston, TX 77084  
Phone: 281-550-1199  
Fax: 281-550-9097  
[www.kccccontrol.com](http://www.kccccontrol.com)

Kem-Tron  
10404 Cash Rd.  
Stafford, TX 77477  
Phone: 281-261-5778  
Fax: 281-499-4080  
[www.kemtron.com](http://www.kemtron.com)

Kemco Systems, Inc.  
11500 47th St. N.  
Clearwater, FL 33762  
Phone: 727-573-2323  
Fax: 727-573-2346

Kemiron  
316 Bartow Airport  
Bartow, FL 33830  
Phone: 863-533-5990  
Fax: 863-533-7077

Kimre Inc.  
P.O. Box 570846  
Perrine, FL 33257-0846  
Phone: 305-233-4249  
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Kinetico Engineered Systems, Inc.  
P.O. Box 127  
Newbury, OH 44065  
Phone: 440-564-0111  
Fax: 440-564-7696  
[www.kinetico.com](http://www.kinetico.com)

King Lee Technologies  
8949 Kenamar Dr., Bldg. 107  
San Diego, CA 92121-2453  
Phone: 619-693-4062  
Fax: 619-693-4917  
[www.kingleetech.com](http://www.kingleetech.com)

Klenzoid, Inc.  
P.O. Box 444  
Wayne, PA 19087  
Phone: 610-825-0218  
Fax: 610-825-5390

Knapp Polly Pig, Inc.  
1209 Hardy  
Houston, TX 77020  
Phone: 713-222-0146  
Fax: 713-222-7403  
[www.pollypig.com](http://www.pollypig.com)

Knight Manufacturing Corp.  
P.O. Box 167  
Brodhead, WI 53520  
Phone: 608-897-2131  
Fax: 608-897-2561  
[www.knightmfg.com](http://www.knightmfg.com)

Koch Membrane Systems, Inc.  
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Wilmington, MA 01887-3388  
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Fax: 978-657-5208  
[www.kochmembrane.com](http://www.kochmembrane.com)

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Koflo Corp.  
309 Cary Point Rd.  
Cary, IL 60013  
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Komax Systems, Inc.  
P.O. Box 1323  
Wilmington, CA 90748-1323  
Phone: 310-830-4320  
Fax: 310-830-9826  
[www.komax.com](http://www.komax.com)

Komline-Sanderson Engineering Corp.  
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Peapack, NJ 07977-0257  
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[www.komline.com](http://www.komline.com)

Krauss Maffei Corp.  
7095 Industrial Rd.  
Florence, KY 41042-6270  
Phone: 606-283-0200  
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[www.krauss-maffei.com](http://www.krauss-maffei.com)

Krebs Engineers  
5505 West Gillette Rd.  
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Fax: 520-744-8300  
[www.krebs.com](http://www.krebs.com)

KriStar Enterprises  
P.O. Box 7352  
Santa Rosa, CA 95407  
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[www.kristar.com](http://www.kristar.com)

Krofta Engineering Corp.  
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Lenox, MA 01240  
Phone: 413-637-0740  
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[www.krofta.com](http://www.krofta.com)

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[www.nirosta.ce](http://www.nirosta.ce)

Kvaerner Chemetics  
1818 Cornwall Ave.  
Vancouver, BC, Canada V6J 1C7  
Phone: 604-734-1200  
Fax: 604-734-0340

Kvaerner Eureka USA  
17 Sawmill Way  
Georgetown, MA 01833  
Phone: 508-352-4487  
Fax: 508-352-4417

Lakeside Equipment Corp.  
P.O. Box 8448  
Bartlett, IL 60103  
Phone: 630-837-5640  
Fax: 630-837-5647  
[www.lakeside-equipment.com](http://www.lakeside-equipment.com)

Lakeview Engineered Products, Inc.  
2010 Lakeview Dr.  
Fort Wayne, IN 46802  
Phone: 219-432-3479  
Fax: 219-432-6239

Land Combustion  
2525-B Pearl Buck Rd.  
Bristol, PA 19007  
Phone: 215-781-0810  
Fax: 215-781-0798  
[www.landinst.com](http://www.landinst.com)

Landa, Inc.  
4275 NW Pacific Rim Blvd.  
Camas, WA 98607  
Phone: 360-833-9100  
Fax: 360-833-9200  
[www.landa-inc.com](http://www.landa-inc.com)

Landustrie Sneek BV  
P.O. Box 199  
8600 AD Sneek, The Netherlands  
Phone: 31-515-486888  
Fax: 31-515-412398  
[www.landustrie.nl](http://www.landustrie.nl)

Lang Filter Media Co.  
910 Sheraton Dr. #100  
Mars, PA 16046  
Phone: 724-779-3990  
Fax: 724-779-3993  
[www.langfiltermedia.com](http://www.langfiltermedia.com)

Lantec Products, Inc.  
5308 Derry Ave., Unit E  
Agoura Hills, CA 91301  
Phone: 818-707-2285  
Fax: 818-707-9367  
[www.lantecp.com](http://www.lantecp.com)

Larox Inc.  
9730 Patuxent Woods Dr.  
Columbia, MD 21046  
Phone: 410-381-3314  
Fax: 410-381-4490  
[www.larox.fi](http://www.larox.fi)

LAS International  
3811 Lockport St.  
Bismark, ND 58501  
Phone: 701-222-8331  
Fax: 701-222-2773  
[www.lasinternational.com](http://www.lasinternational.com)

Layne Christensen, Ranney Division  
801 W. Cherry St.  
Sudbury, OH 43074  
Phone: 740-965-2833  
Fax: 740-965-2834  
[www.laynechristensen.com](http://www.laynechristensen.com)

LCI Corp.  
P.O. Box 16348  
Charlotte, NC 28297-9984  
Phone: 704-394-8341  
Fax: 704-393-8590  
[www.lcicorp.com](http://www.lcicorp.com)

LEEM Filtration Products, Inc.  
25 Arrow Rd.  
Ramsey, NJ 07446  
Phone: 201-236-4833  
Fax: 201-236-2004

Lemna Corp.  
1408 Northland Dr., Ste. 310  
St. Paul, MN 55120-1013  
Phone: 612-688-0836  
Fax: 612-688-8813  
[www.lemna.com](http://www.lemna.com)

Lighthouse Separation Systems, Inc.  
P.O. Box 370  
Dahlonega, GA 30533  
Phone: 706-864-8644  
Fax: 706-864-8677  
[www.lighthousefilters.com](http://www.lighthousefilters.com)

Lightnin  
P.O. Box 1370  
Rochester, NY 14603  
Phone: 716-527-1623  
Fax: 716-527-1720

Linde-KCA-Dresden GmbH  
Schumannstrabe 21  
D-39264 Dobritz, Germany  
Phone: 41-351-4560-207  
Fax: 41-351-4560-272  
[www.linde.com](http://www.linde.com)

Liquid Dynamics Corp.  
36W897 Dean St.  
St. Charles, IL 60174  
Phone: 630-513-8366  
Fax: 630-513-6447  
[www.jetmix.com](http://www.jetmix.com)

Liquid Metronics, Inc.  
8 Post Office Sq.  
Acton, MA 01720-3948  
Phone: 978-263-9800  
Fax: 978-264-9172  
[www.lmipumps.com](http://www.lmipumps.com)

Liquid Waste Technology, Inc.  
Box 250  
Somerset, WI 54025  
Phone: 715-247-5464  
Fax: 715-247-3934  
[www.lwtpithog.com](http://www.lwtpithog.com)

Liquid-Solids Separation Corp.  
P.O. Box 9  
Northvale, NJ 07647  
Phone: 201-784-1570  
Fax: 201-784-1575

LIST, Inc.  
42 Nagog Park  
Acton, MA 01720  
Phone: 978-635-9521  
Fax: 978-635-0570

Longwood Engineering Co., Ltd.  
Parkwood Mills, Longwood,  
Huddersfield  
West Yorkshire, HD3 4TP England  
Phone: 0484-642011  
Fax: 0484-642935

Lotepro Corp.  
115 Stevens Ave.  
Valhalla, NY 10595  
Phone: 914-749-5228  
Fax: 914-747-3422  
[www.linde.com](http://www.linde.com)

Lowry Aeration Systems, Inc.  
P.O. Box 1239  
Blue Hill, ME 04614  
Phone: 207-374-3502  
Fax: 207-374-3503  
[www.lowryh2o.com](http://www.lowryh2o.com)

LSR Technologies, Inc.  
898 Main St.  
Acton, MA 01720  
Phone: 978-635-0123  
Fax: 978-635-0058  
[www.concentric.net](http://www.concentric.net)

Lurgi Bamag GmbH  
Wetzlarer Strabe 136  
D-635510 Butzbach, Germany  
Phone: 49-60-33-839  
Fax: 49-60-33-83-506  
[www.lurgi.com](http://www.lurgi.com)

M&W Industries, Inc.  
16792 Talisman Lane #210  
Huntington Beach, NC 27045  
Phone: 910-969-9526  
Fax: 910-969-2156

Markland Specialty Engineering Ltd.  
48 Shaft Rd.  
Rexdale Toronto Ontario,  
Canada M9W 4M2  
Phone: 416-244-4980  
Fax: 416-244-2287  
[www.sludgecontrols.com](http://www.sludgecontrols.com)

Marolf, Inc.  
4430 Erie Dr.  
New Port Richey, FL 34652  
Phone: 727-843-0681  
Fax: 727-849-3272

Marsh-McBirney, Inc.  
4539 Metropolitan Ct.  
Frederick, MD 21701-8364  
Phone: 301-874-5599  
Fax: 301-874-2172  
[www.marsh-mcBirney.com](http://www.marsh-mcBirney.com)

Martin Marietta Specialties, Inc.  
P.O. Box 15470  
Baltimore, MD 21220-0470  
Phone: 410-780-5500  
Fax: 410-780-5555  
[www.magspecialties.com](http://www.magspecialties.com)

Matheson Gas Products  
166 Keystone Dr.  
Montgomeryville, PA 18936  
Phone: 215-641-2700  
Fax: 215-641-2714  
[www.mathesongas.com](http://www.mathesongas.com)

Matrix Desalination, Inc.  
3295 SW 11th Ave.  
Fort Lauderdale, FL 33315  
Phone: 954-524-5120  
Fax: 954-524-5216

Matt-Son, Inc.  
28W005 Industrial Ave.  
Barrington, IL 60010  
Phone: 847-382-7810  
Fax: 847-382-5814  
[www.matt-son.com](http://www.matt-son.com)

Mazzei Injector Corp.  
500 Rooster Dr.  
Bakersfield, CA 93307-9555  
Phone: 661-363-6500  
Fax: 661-363-7500  
[www.mazzei-injector.com](http://www.mazzei-injector.com)

McCrometer, Inc.  
3255 West Stetson Ave.  
Hemet, CA 92545-7799  
Phone: 909-652-6811  
Fax: 909-652-3078  
[www.mccrometer.com](http://www.mccrometer.com)



McGill Airclean Corp.  
1779 Refugee Rd.  
Columbus, OH 43207-2119  
Phone: 614-443-0192  
Fax: 614-445-8759  
[www.mcgillairclean.com](http://www.mcgillairclean.com)

McLanahan Corp.  
200 Wall St.  
Hollidaysburg, PA 16648  
Phone: 814-695-9807  
Fax: 814-695-6684

McTighe Industries, Inc.  
3405 S. Westport Ave.  
Sioux Falls, SD 57106  
Phone: 605-363-3407  
Fax: 605-362-3494  
[www.mctighe.com](http://www.mctighe.com)

Mechanical Equipment Co., Inc.  
861 Carondelet St.  
New Orleans, LA 70130  
Phone: 504-599-4000  
Fax: 504-599-4100  
[www.meco.com](http://www.meco.com)

Medina Products Bioremediation  
Division  
P.O. Box 309  
Hondo, TX 78861  
Phone: 830-426-3011  
Fax: 830-426-2288

Megator Corp.  
562 Alpha Dr.  
Pittsburgh, PA 15238  
Phone: 412-963-9200  
Fax: 412-963-9214

Megtec Systems, Inc.  
P.O. Box 5030  
DePere, WI 54115-0030  
Phone: 920-336-5715  
Fax: 920-336-3404  
[www.megtec.com](http://www.megtec.com)

Membrex, Inc.  
155 Route 146 West  
Fairfield, NY 07004  
Phone: 973-575-8388  
Fax: 973-575-7011  
[www.membrex.com](http://www.membrex.com)

Mer-Made Filter, Inc.  
185 Le Grand Ave.  
Northvale, NJ 07647  
Phone: 201-784-3523  
Fax: 201-784-1575

Mercer International, Inc.  
P.O. Box 540  
Mendham, NJ 07945  
Phone: 973-543-9000  
Fax: 973-543-4343

Meridian Diagnostics, Inc.  
3741 River Hills Dr.  
Cincinnati, OH 45244  
Phone: 513-271-3700  
Fax: 513-272-5432

Merrick Industries, Inc.  
10 Arthur Dr.  
Lynn Haven, FL 32444  
Phone: 850-265-3611  
Fax: 850-265-9768

Met-Pro Corp.  
P.O. Box 144  
Harleysville, PA 19438  
Phone: 215-723-6751  
Fax: 215-723-6758  
[www.met-pro.com](http://www.met-pro.com)

Meurer Industries, Inc.  
15611 West 6th Ave.  
Golden, CO 80401  
Phone: 303-279-8431  
Fax: 303-279-8429

Micronair LLC  
11259 Phillips Pkwy. Dr. E.  
Jacksonville, FL 32256  
Phone: 904-268-5457  
Fax: 904-268-5597  
[www.micronairusa.com](http://www.micronairusa.com)

MIE, Inc.  
7 Oak Park  
Bedford, MA 01730  
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Fax: 781-275-2121  
[www.mieinc.com](http://www.mieinc.com)

Millipore Corp.  
80 Ashby Rd.  
Bedford, MA 01730  
Phone: 781-275-9200  
Fax: 781-533-8878

Milltronics, Inc.  
709 Stadium Dr. E.  
Arlington, TX 76011-9870  
Phone: 817-277-3543  
Fax: 817-277-3894  
[www.milltronics.com](http://www.milltronics.com)

Milton Roy Co.  
201 Ivyland Rd.  
Ivyland, PA 18974-1706  
Phone: 215-441-0800  
Fax: 215-441-8620  
[www.miltonroy.com](http://www.miltonroy.com)

Minntech Fibercor  
14605 28th Ave. N.  
Minneapolis, MN 55447  
Phone: 612-553-3300  
Fax: 612-553-3387  
[www.minntech.com](http://www.minntech.com)

Miox Corp.  
5500 Midway Park Pl. NE  
Albuquerque, NM 87109  
Phone: 505-343-0900  
Fax: 505-343-0093  
[www.miox.com](http://www.miox.com)

Misonix, Inc.  
1938 New Highway  
Farmingdale, NY 11735  
Phone: 631-694-9555  
Fax: 631-694-9412  
[www.misonix.com](http://www.misonix.com)

MixAir Technologies, Inc.  
4712 68th Ave.  
Kenosha, WI 53144  
Phone: 262-657-6788  
Fax: 262-657-8383  
[www.mixairtech.com](http://www.mixairtech.com)

ModuTank, Inc.  
41-04 35th Ave.  
Long Island City, NY 11101  
Phone: 718-392-1112  
Fax: 718-786-1008

Molecular Analytics LLC  
25 Loveton Circle, Box 1123  
Sparks, MD 21152-1123  
Phone: 410-472-2146  
Fax: 410-472-2156

Monitek Technologies, Inc.  
2021 Las Positas Ct., Ste. 145  
Livermore, CA 94550  
Phone: 925-243-0050  
Fax: 925-243-0051  
[www.monitek.com](http://www.monitek.com)

Monoflo  
16503 Park Row  
Houston, TX 77084  
Phone: 281-599-4700  
Fax: 281-599-4733

Monsanto Enviro-Chem Systems, Inc.  
P.O. Box 14547  
St. Louis, MO 63178  
Phone: 314-275-5700  
Fax: 314-275-5701  
[www.enviro-chem.com](http://www.enviro-chem.com)

Mother Environmental Systems, Inc.  
1124 Purina Dr.  
Gainesville, GA 30501  
Phone: 770-534-3118  
Fax: 770-534-3117  
[www.myclx.com](http://www.myclx.com)

Moyno Industrial Products  
P.O. Box 960  
Springfield, OH 45501  
Phone: 937-327-3510  
Fax: 937-327-3064  
[www.moyno.com](http://www.moyno.com)

MPR Services, Inc.  
1201 FM646  
Dickinson, TX 77539-3022  
Phone: 281-337-7424  
Fax: 281-337-6534  
[www.mprserv.com](http://www.mprserv.com)

Mt. Fury Co., Inc.  
1460 19th Ave., NW  
Issaquah, WA 98027  
Phone: 425-391-0747  
Fax: 425-391-9708

Munters  
P.O. Box 6428  
Fort Myers, FL 33911  
Phone: 941-936-1555  
Fax: 941-936-6582  
[www.munters.com](http://www.munters.com)

Munters Zeol Corp.  
P.O. Box 600  
Amesbury, MA 01913  
Phone: 978-241-1103  
Fax: 978-241-1220  
[www.munterszeol.com](http://www.munterszeol.com)

MWD Technologies Ltd.  
111440 West Bernado  
San Diego, CA 92127  
Phone: 858-674-6902  
Fax: 858-674-6903

N-Viro International Corp.  
3450 West Central Ave., Ste. 328  
Toledo, OH 43606  
Phone: 419-535-6374  
Fax: 419-535-7008  
[www.nviro.com](http://www.nviro.com)

Nalco Chemical Co.  
One Nalco Center  
Naperville, IL 60566-1024  
Phone: 630-305-1000  
Fax: 630-305-2900  
[www.nalco.com](http://www.nalco.com)

NAO Inc.  
1284 E. Sedgley Ave.  
Philadelphia, PA 19134  
Phone: 215-743-5300  
Fax: 215-743-3018  
[www.nao.com](http://www.nao.com)

National Fluid Separators, Inc.  
827 Hanley Industrial Ct.  
St. Louis, MO 63144-1402  
Phone: 314-968-2838  
Fax: 314-968-4773  
[www.mjind.com](http://www.mjind.com)

National Seal Co.  
1245 Corporate Blvd., Ste. 300  
Aurora, IL 60504  
Phone: 630-898-1161  
Fax: 630-898-3461

Nature Plus, Inc.  
52 Lakeview Ave.  
New Canaan, CT 06840  
Phone: 203-972-1100  
Fax: 203-966-2200

NEFCO, Inc.  
P.O. Box 30493  
Palm Beach Gardens, FL 33420-0493  
Phone: 561-775-9303  
Fax: 561-775-6043  
[www.nefcoinc.com](http://www.nefcoinc.com)

Neotronics of North America  
P.O. Box 2100  
Flowery Branch, GA 30542-2100  
Phone: 770-967-2196  
Fax: 770-967-1854

Neptune Chemical Pump Co.  
P.O. Box 247  
Lansdale, PA 19446  
Phone: 215-699-8701  
Fax: 215-699-0370  
[www.neptune1.com](http://www.neptune1.com)

Netzsch, Inc.  
119 Pickering Way  
Exton, PA 19341-1393  
Phone: 610-363-8010  
Fax: 610-363-0971  
[www.netzschusa.com](http://www.netzschusa.com)

Neutraman, Inc.  
2701 S. Coliseum Blvd., Ste. 1000  
Fort Wayne, IN 46803  
Phone: 219-422-5953  
Fax: 219-422-5160

New Logic International  
1295 67th St.  
Emeryville, CA 94608  
Phone: 510-655-7305  
Fax: 510-655-7307  
[www.vsep.com](http://www.vsep.com)

Newport Electronics  
2229 S. Yale St.  
Santa Ana, CA 92704  
Phone: 714-540-4914  
Fax: 714-546-3022  
[www.newportus.com](http://www.newportus.com)

Niro, Inc.  
9165 Rumsey Rd.  
Colombia, MD 21045  
Phone: 410-997-8700  
Fax: 410-997-5021  
[www.niro.com](http://www.niro.com)

Nitrate Removal Technologies, LLC  
1667 Cole Blvd., Ste. 400  
Golden, CO 80401  
Phone: 303-274-1426  
Fax: 303-237-1103

Noggerath GmbH  
Feldstrabe 2  
D-31708 Ahmsen, Germany  
Phone: 49-5722-882-0  
Fax: 49-5722-882-282  
[www.noggerath.de](http://www.noggerath.de)

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Helsinki, Finland 00700  
Phone: 358-9-351-5700  
Fax: 358-9-351-5620  
[www.nopon.fi](http://www.nopon.fi)

Norair Engineering Corp.  
337 Brightseat Rd., Ste. 200  
Landover, MD 20785  
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Fax: 301-499-1342

Norchem Industries  
18651 Graphic Ct.  
Tinley Park, IL 60477  
Phone: 708-802-9700  
Fax: 708-802-9775  
[www.norchemindustries.com](http://www.norchemindustries.com)

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Atlanta, GA 30338  
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Fax: 770-512-4622  
[www.norit.com](http://www.norit.com)

North East Environmental Products, Inc.  
17 Technology Dr.  
West Lebanon, NH 03784  
Phone: 603-298-7061  
Fax: 603-298-7063  
[www.neepsystems.com](http://www.neepsystems.com)

Northwest Cascade, Inc.  
P.O. Box 73399  
Puyallup, WA 98373  
Phone: 253-848-2371  
Fax: 253-848-2545  
[www.nwcascade.com](http://www.nwcascade.com)

Norton Co.  
P.O. Box 350  
Akron, OH 44309-0350  
Phone: 330-673-5860  
Fax: 330-677-7245

Norton Performance Plastics  
150 Dey Rd.  
Wayne, NJ 07470  
Phone: 973-696-4700  
Fax: 973-628-5550

NRG, Inc.  
P.O. Box 306  
Ardmore, PA 19003-9998  
Phone: 610-896-6850  
Fax: 610-649-5083

NSF International  
P.O. Box 130140  
Ann Arbor, MI 48113-0140  
Phone: 734-769-8010  
Fax: 734-760-0109  
[www.nsf.org](http://www.nsf.org)

NSW Corp.  
530 Gregory Ave.  
Roanoke, VA 24016  
Phone: 540-981-0362  
Fax: 540-345-8421  
[www.nswcorp.com](http://www.nswcorp.com)

Nuove Energie s.r.l.  
Via della Meccanica  
23/25 Vicenza, Italy  
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Fax: 0444-960959

NuTech Environmental Corp.  
5350 N. Washington St.  
Denver, CO 80216-1951  
Phone: 303-295-3702  
Fax: 303-295-6145  
[www.nutechenvironmental.com](http://www.nutechenvironmental.com)

Odor Management, Inc.  
18-4 E. Dundee Rd., Ste. 200  
Barrington, IL 55427-9707  
Phone: 847-304-9111  
Fax: 847-304-0989

Olds Filtration Engineering, Inc.  
Highway 98, 907 Halls Lane  
Daphne, AL 36526-0970  
Phone: 334-626-9492  
Fax: 334-626-7988  
[www.oldsfiltration.com](http://www.oldsfiltration.com)

Omega Engineering, Inc.  
P.O. Box 4047  
Stamford, CT 06907-0047  
Phone: 203-359-1660  
Fax: 203-359-7700  
[www.omega.com](http://www.omega.com)

On-Demand Environmental Systems,  
Inc.  
761 Coleman Ave.  
San Jose, CA 95110  
Phone: 408-287-7012  
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Oritex Corp.  
5530 Ferguson Dr.  
City of Commerce, CA 90022  
Phone: 323-890-1588  
Fax: 323-890-1591

Orival, Inc.  
40 N. Van Brunt St.  
Englewood, NJ 07631  
Phone: 201-568-3311  
Fax: 201-568-1916  
[www.orival.com](http://www.orival.com)

Osmonics Desal  
760 Shadowridge Dr.  
Vista, CA 92083-7986  
Phone: 760-598-3334  
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[www.osmonics.com](http://www.osmonics.com)

Osmonics, Inc.  
5951 Clearwater Dr.  
Minnetonka, MN 55343-8995  
Phone: 612-933-2277  
Fax: 612-933-0141  
[www.osmonics.com](http://www.osmonics.com)

Osmosis Technology, Inc.  
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Buena Park, CA 90620  
Phone: 714-670-9303  
Fax: 714-670-9323  
[www.osmotik.com](http://www.osmotik.com)

Osprey Biotechnics  
2530 B. Trailmate Dr.  
Sarasota, FL 34243  
Phone: 941-755-7770  
Fax: 941-755-0626

Ozone Pure Water, Inc.  
5330 Ashton Ct.  
Sarasota, FL 34233  
Phone: 941-923-8528  
Fax: 941-923-8231  
[www.ozonepure.com](http://www.ozonepure.com)

Ozonia North America  
P.O. Box 455  
Elmwood Park, NJ 07407  
Phone: 201-794-3100  
Fax: 201-794-3358  
[www.ozonia.com](http://www.ozonia.com)

Pacific Keystone Technologies  
P.O. Box 360  
Black Diamond, WA 98010-0491  
Phone: 360-886-1396  
Fax: 360-886-2480  
[www.clearwaterworld.com](http://www.clearwaterworld.com)

Pacific Ozone Technology, Inc.  
730 Concord Ave.  
Brentwood, CA 94513  
Phone: 925-634-7252  
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[www.pacificozone.com](http://www.pacificozone.com)

PacTec, Inc.  
P.O. Box 8069  
Clinton, LA 70722  
Phone: 225-683-8062  
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[www.pactecinc.com](http://www.pactecinc.com)

Pall Corp.  
2200 Northern Blvd.  
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Fax: 516-484-6164  
[www.pall.com](http://www.pall.com)

Parkson Corp.  
P.O. Box 408399  
Fort Lauderdale, FL 33340-8399  
Phone: 954-974-6610  
Fax: 954-974-6182  
[www.parkson.com](http://www.parkson.com)

Particle Measuring Systems, Inc.  
5475 Airport Blvd.  
Boulder, CO 80301  
Phone: 303-443-7100  
Fax: 303-449-6870  
[www.pmeasuring.com](http://www.pmeasuring.com)

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Phone: 49-6120-282791  
Fax: 49-6120-282672  
[www.passavant-roediger.de](http://www.passavant-roediger.de)

Patterson Candy International, Ltd.  
21 The Mall,  
Ealing London, W5 2PU England  
Phone: 01-579-1311  
Fax: 01-840-6180

Patterson Pump Co.  
P.O. Box 790  
Toccoa, GA 30577  
Phone: 706-886-2101  
Fax: 706-886-0023  
[www.pattersonpumps.com](http://www.pattersonpumps.com)

Paul Mueller Co.  
P.O. Box 828  
Springfield, MO 65801-0828  
Phone: 417-831-3000  
Fax: 417-831-3528  
[www.muel.com](http://www.muel.com)

PBR Industries  
143 Cortland St.  
Lindenhurst, NY 11757  
Phone: 516-226-2930  
Fax: 516-226-3125  
[www.pbrind.com](http://www.pbrind.com)

PCI-Wedeco Environmental  
Technologies, Inc.  
One Fairfield Crescent  
West Caldwell, NJ 07006  
Phone: 973-575-7052  
Fax: 973-575-8941  
[www.pci-wedeco.com](http://www.pci-wedeco.com)

PennProcess Technologies, Inc.  
P.O. Box 427  
Plumsteadville, PA 18949-0427  
Phone: 215-766-7766  
Fax: 215-766-8290  
[www.pennprocess.com](http://www.pennprocess.com)

Pepcon Systems, Inc.  
3770 Howard Hughes Pkwy., Ste. 340  
Las Vegas, NV 89109  
Phone: 702-735-2324  
Fax: 702-735-9456

PerkinElmer Instruments  
761 Main Ave.  
Norwalk, CT 06859  
Phone: 203-762-4003  
Fax: 203-761-5330  
[www.perkinelmer.com](http://www.perkinelmer.com)

Phelps Dodge Refining Co.  
P.O. Box 20001  
El Paso, TX 79998  
Phone: 915-775-8826  
Fax: 915-775-8350  
[www.pdsales.com](http://www.pdsales.com)

Philadelphia Mixers  
1221 E. Main  
Palmyra, PA 17078  
Phone: 717-838-1341  
Fax: 717-832-8802  
[www.philamixers.com](http://www.philamixers.com)

Phipps & Bird  
P.O. Box 27324  
Richmond, VA 23261  
Phone: 804-254-2737  
Fax: 804-254-2955  
[www.phippsbird.com](http://www.phippsbird.com)

Phoenix Process Equipment Co.  
2402 Watterson Trail  
Louisville, KY 40299  
Phone: 502-499-6198  
Fax: 502-499-1079  
[www.dewater.com](http://www.dewater.com)

Pica USA, Inc.  
432 McCormick Blvd.  
Columbus, OH 43213  
Phone: 614-864-8100  
Fax: 614-864-9914  
[www.picausa.com](http://www.picausa.com)

Pipeline Pigging Products, Inc.  
P.O. Box 692005  
Houston, TX 77269  
Phone: 281-351-6688  
Fax: 281-255-2385  
[www.pipepigs.com](http://www.pipepigs.com)

Pitt-Des Moines, Inc.  
3400 Grand Ave.  
Pittsburgh, PA 15225  
Phone: 412-331-3000  
Fax: 412-331-3188  
[www.pdm.com](http://www.pdm.com)

Plasti-Fab, Inc.  
P.O. Box 100  
Tualatin, OR 97062-0100  
Phone: 503-692-5460  
Fax: 503-692-1145  
[www.plasti-fab.com](http://www.plasti-fab.com)

Pollution Control Systems, Inc.  
5827 Happy Hollow Rd.  
Milford, OH 45150  
Phone: 513-831-1165  
Fax: 513-965-4812

Polybac Corp.  
3894 Courtney St.  
Bethlehem, PA 18017  
Phone: 610-867-7338  
Fax: 610-861-0991

Polychem Corp.  
P.O. Box 527  
Phoenixville, PA 19460-0527  
Phone: 610-935-0225  
Fax: 610-935-7151  
[www.polychemcorp.com](http://www.polychemcorp.com)

Polydyne, Inc.  
P.O. Box 351420  
Toledo, OH 43635  
Phone: 419-843-8066  
Fax: 419-843-3081  
[www.polydynemso.com](http://www.polydynemso.com)

PPG Industries, Inc.  
1 PPG Pl.  
Pittsburgh, PA 15272  
Phone: 412-434-3131  
Fax: 412-434-4578  
[www.ppg.com](http://www.ppg.com)

PQ Corp.  
P.O. Box 840  
Valley Forge, PA 19482  
Phone: 610-651-4200  
Fax: 610-251-5249

Praxair, Inc.  
810 Jorie Blvd.  
Oak Brook, IL 60521-2216  
Phone: 708-572-7500  
Fax: 708-572-7935  
[www.praxair.com](http://www.praxair.com)

Praxair-Trailigaz Ozone Co.  
11501 Goldcoast Dr.  
Cincinnati, OH 45249-1623  
Phone: 513-530-7702  
Fax: 513-530-7711  
[www.ptoc.com](http://www.ptoc.com)

Premier Chemicals  
7521 Engle Rd., Ste. 415  
Middleburg Heights, OH 44130  
Phone: 440-234-4600  
Fax: 440-234-5772  
[www.premierchemicals.com](http://www.premierchemicals.com)

Pro Products Corp.  
502 Incentive Dr.  
Fort Wayne, IN 46825  
Phone: 219-490-5970  
Fax: 219-490-9431  
[www.redbgone.com](http://www.redbgone.com)

Pro-Ent, Inc.  
P.O. Box 23611  
Jacksonville, FL 32241  
Phone: 904-737-3536  
Fax: 904-737-3537

Pro-Equipment, Inc.  
237 Wisconsin Ave.  
Waukesha, WI 53186  
Phone: 262-513-8801  
Fax: 262-513-8897  
[www.proequipment.com](http://www.proequipment.com)

Probiotic Solutions  
201 S. Roosevelt  
Chandler, AZ 85226  
Phone: 480-961-1220  
Fax: 480-961-3501



Process Combustion Corp.  
5460 Horning Rd.  
Pittsburgh, PA 15241  
Phone: 412-655-0955  
Fax: 412-650-5560

Product Level Control, Inc.  
11929 Portland Ave. S.  
Burnsville, MN 55337  
Phone: 612-707-9101  
Fax: 612-707-1075  
[www.productlevel.com](http://www.productlevel.com)

Professional Water Technologies, Inc.  
1145 Industrial Ave., Ste. I  
Escondido, CA 92029  
Phone: 760-741-7404  
Fax: 760-741-5645  
[www.pwtinc.com](http://www.pwtinc.com)

ProGuard Filtration Systems  
P.O. Box 678  
Nowata, OK 74048  
Phone: 918-273-2208  
Fax: 918-273-2101

ProMinent Fluid Controls, Inc.  
136 Industry Dr.  
Pittsburgh, PA 15275  
Phone: 412-787-2484  
Fax: 412-787-0704  
[www.pfc-amer.com](http://www.pfc-amer.com)

PTI Advanced Filtration  
2340 Eastman Ave.  
Oxnard, CA 93030  
Phone: 805-604-3400  
Fax: 805-604-3401  
[www.pti-afi.com](http://www.pti-afi.com)

Pulsafeeder, Inc.  
2883 Brighton Henrietta TL Rd.  
Rochester, NY 14623  
Phone: 716-292-8000  
Fax: 716-424-5619  
[www.pulsa.com](http://www.pulsa.com)

Pump Engineering, Inc.  
1004 W. Hurd Rd.  
Monroe, MI 48161  
Phone: 734-242-1772  
Fax: 734-242-9777

Pumps Unlimited  
19 Affonso Dr.  
Carson City, NV 89706  
Phone: 775-246-0800  
Fax: 775-246-0847

Purafil, Inc.  
2654 Weaver Way  
Doraville, GA 30340  
Phone: 770-662-8545  
Fax: 770-263-6922  
[www.purafil.com](http://www.purafil.com)

Purestream, Inc.  
P.O. Box 68  
Florence, KY 41042-0068  
Phone: 606-371-9898  
Fax: 606-371-3577  
[www.purestreaminc.com](http://www.purestreaminc.com)

Purolite Co.  
150 Monument Rd., Bala Cynwyd  
Philadelphia, PA 19004  
Phone: 610-668-9090  
Fax: 610-668-8139  
[www.purolite.com](http://www.purolite.com)

QED Environmental Systems, Inc.  
P.O. Box 3726  
Ann Arbor, MI 48106-9897  
Phone: 734-995-2547  
Fax: 734-995-1170  
[www.qedenv.com](http://www.qedenv.com)

Quantum Technologies, Inc.  
1632 Enterprise Pkwy.  
Twinsburg, OH 44087  
Phone: 330-425-7880  
Fax: 330-425-0955

R.P. Adams Co., Inc.  
P.O. Box 963  
Buffalo, NY 14240-0963  
Phone: 716-877-2608  
Fax: 716-877-9385  
[www.rpadams.com](http://www.rpadams.com)

RDP Technologies, Inc.  
2495 Blvd. of the Generals  
Norristown, PA 19403-5236  
Phone: 610-650-9900  
Fax: 610-650-9070  
[www.rdpotech.com](http://www.rdpotech.com)

Recra Environmental  
1576 Sweet Home Rd.  
Amherst, NY 14228  
Phone: 716-636-1550  
Fax: 716-636-1598

Red Fox Environmental, Inc.  
P.O. Box 53809  
Lafayette, LA 70505  
Phone: 337-235-2499  
Fax: 337-235-2999

Red Valve Co., Inc.  
700 N. Bell Ave.  
Carnegie, PA 15106  
Phone: 412-279-0044  
Fax: 412-279-7878  
[www.redvalve.com](http://www.redvalve.com)

Refinite Water Conditioning Co.  
P.O. Box 11676  
Rock Hill, SC 29731  
Phone: 803-324-7600  
Fax: 803-324-1116

Refractron Technologies Corp.  
5750 Stuart Ave.  
Newark, NJ 14513  
Phone: 315-331-6222  
Fax: 315-331-7254  
[www.refractron.com](http://www.refractron.com)

Regenesis  
1011 Calle Sombra  
San Clemente, CA 92672  
Phone: 949-366-8000  
Fax: 949-366-8090  
[www.regenesis.com](http://www.regenesis.com)

Reheis, Inc.  
235 Snyder Ave.  
Berkely Heights, NJ 07922  
Phone: 908-464-1500  
Fax: 908-464-7726

REKO Industrial Equipment B.V.  
Delta Industrieweg 36  
3251 LX Stellendam, The Netherlands  
Phone: 31-187-492988  
Fax: 31-187-492781

RGF O3 Systems, Inc.  
3875 Fiscal Ct.  
West Palm Beach, FL 33404  
Phone: 561-848-3187  
Fax: 561-848-2170  
[www.rgf.com](http://www.rgf.com)

Ringlace Products, Inc.  
9902 N.E. Glison St.  
Portland, OR 97220  
Phone: 503-251-1295  
Fax: 503-256-7325

Roberts Filter Group  
P.O. Box 167  
Darby, PA 19023  
Phone: 610-583-3131  
Fax: 610-583-0117  
[www.robertsfiltergroup.com](http://www.robertsfiltergroup.com)

Rochem Environmental, Inc.  
610 North Milby St.  
Houston, TX 77003  
Phone: 713-224-7626  
Fax: 713-224-7627  
[www.rochem.com](http://www.rochem.com)

Rochester Midland  
333 Hollenbeck St.  
Rochester, NY 14621  
Phone: 716-336-2200  
Fax: 716-266-1606  
[www.rochestermidland.com](http://www.rochestermidland.com)

Rodney Hunt Co.  
46 Mill St.  
Orange, MA 01364-1268  
Phone: 978-544-2511  
Fax: 978-544-7204  
[www.rodneyhunt.com](http://www.rodneyhunt.com)

Roediger Pittsburgh, Inc.  
3812 Route 8  
Allison Park, PA 15101  
Phone: 412-487-6010  
Fax: 412-487-6005  
[www.roediger.com](http://www.roediger.com)

Rohm & Haas, Co.  
5000 Richmond St.  
Philadelphia, PA 19105  
Phone: 215-537-4000  
Fax: 215-537-4219  
[www.rohmhaas.com](http://www.rohmhaas.com)

Ronningen-Petter  
9551 Shaver Rd.  
Portage, MI 49081  
Phone: 616-323-1313  
Fax: 616-323-0065

Ropur AG  
4142 Munchebstein 1  
Switzerland  
Phone: 41-61-415-8710  
Fax: 41-61-415-8720

Rosemount Analytical, Inc.  
2400 Barranca Pkwy.  
Irvine, CA 92606  
Phone: 949-863-1181  
Fax: 949-474-7250

Rosenmund  
St. James Ct., Wilderspool Causeway  
Warrington, Cheshire, WA4 6PS England  
Phone: 0925-52621  
Fax: 0925-416790

Rosenmund, Inc.  
9110 Forsyth Park Dr.  
Charlotte, NC 28273  
Phone: 704-587-0440  
Fax: 704-588-6866

Roto-Sieve AB  
Hjorthagsgatan 10  
S-413 17, Goteborg, Sweden  
Phone: 031-427890  
Fax: 031-422070

Rubber Millers, Inc.  
709 S. Caton  
Baltimore, MD 21229  
Phone: 410-947-8400  
Fax: 410-233-6537

Rupprecht & Patashnick Co., Inc.  
25 Corporate Circle  
Albany, NY 12203  
Phone: 518-452-0065  
Fax: 518-452-0067  
[www.rpco.com](http://www.rpco.com)

S.P. Kinney Engineers, Inc.  
P.O. Box 445  
Carnegie, PA 15106-0445  
Phone: 412-276-4600  
Fax: 412-276-6890

S&G Enterprises, Inc.  
N115 W1900 Edison Dr.  
Germantown, WI 53022  
Phone: 262-251-8300  
Fax: 262-251-1616  
[www.ramflat.com](http://www.ramflat.com)

S&N Airoflo, Inc.  
P.O. Drawer 1139  
Greenwood, MS 38935-1139  
Phone: 601-453-2588  
Fax: 601-453-1991  
[www.airoflo.com](http://www.airoflo.com)

SAMI  
940 Kulp Rd.  
Pottstown, PA 19465  
Phone: 610-495-6858  
Fax: 610-495-0560  
[www.sami1.com](http://www.sami1.com)

Sanitaire Corp.  
9333 N. 49th St.  
Brown Deer, WI 53223  
Phone: 414-365-2200  
Fax: 414-365-2210  
[www.sanitaire.com](http://www.sanitaire.com)

Schlicher & Schuell  
P.O. Box 2012  
Keene, NH 03431  
Phone: 603-352-3810  
Fax: 603-357-3627

Schloss Engineered Equipment  
10555 E. Dartmouth #230  
Aurora, CO 80014  
Phone: 303-695-4500  
Fax: 303-695-4507

Schlueter Co.  
P.O. Box 548  
Janesville, WI 53547  
Phone: 608-755-5455  
Fax: 608-755-5450

Schreiber Corp.  
100 Schreiber Dr.  
Trussville, AL 35173  
Phone: 205-655-7466  
Fax: 205-655-7669  
[www.schreiber-water.com](http://www.schreiber-water.com)

Schreiber-Klaranlagen  
Postfach 1580  
30853 Langenhagen, Germany  
Phone: 0511-77990  
Fax: 0511-7799220

SciCorp Systems, Inc.  
274 Burton Ave. Ste. 203B  
Barrie, Ontario, Canada L4N 5W4  
Phone: 705-733-2626  
Fax: 705-733-2618  
[www.scicorpbioologic.com](http://www.scicorpbioologic.com)

Science Application International Corp.  
3240 Schoolhouse Rd.  
Middletown, PA 17057  
Phone: 717-944-5501  
Fax: 717-944-4551

Scienco/FAST Systems  
3240 N. Broadway  
St. Louis, MO 63147-3515  
Phone: 314-621-2536  
Fax: 314-621-1952

Screening Systems International  
P.O. Box 760  
Slaughter, LA 70777  
Phone: 225-654-3900  
Fax: 225-654-3966  
[www.screeningsystems.com](http://www.screeningsystems.com)

Seaman Corp.  
1000 Venture Blvd.  
Wooster, OH 44691  
Phone: 330-262-1111  
Fax: 330-263-6950  
[www.seamancorp.com](http://www.seamancorp.com)

Sefar America, Inc.  
333 S. Highland Ave.  
Briarcliff Manor, NY 10510  
Phone: 914-941-7767  
Fax: 914-762-8599  
[www.sefaramerica.com](http://www.sefaramerica.com)

Seghers Better Technology USA  
3114 Emery Circle  
Austell, GA 30168  
Phone: 770-739-4205  
Fax: 770-739-0117  
[www.bettertechnology.com](http://www.bettertechnology.com)

Selecto, Inc.  
5933 Peachtree Industrial Blvd.  
Norcross, GA 30092  
Phone: 770-448-2433  
Fax: 770-448-5214

Semblem, Inc.  
1635 W. Walnut  
Springfield, MO 65806-1643  
Phone: 417-866-1035  
Fax: 417-866-0235

Sentex Systems, Inc.  
553 Broad Ave.  
Ridgefield, NJ 07657  
Phone: 201-945-3694  
Fax: 201-941-6064

Serfilco, Ltd.  
1777 Shermer Rd.  
Northbrook, IL 60062-5360  
Phone: 847-559-1777  
Fax: 847-559-1995  
[www.serfilco.com](http://www.serfilco.com)

Sernagiotto Technologies  
1903 Corona Ave.  
Jasper, AL 35501  
Phone: 205-221-3709  
Fax: 205-221-5237  
[www.sernagiotto.it](http://www.sernagiotto.it)

Serpentix Conveyor Corp.  
9085 Marshall Ct.  
Westminster, CO 80030  
Phone: 303-430-8427  
Fax: 303-430-7337  
[www.serpentix.com](http://www.serpentix.com)

Servomex Co.  
90 Kerry Pl.  
Norwood, MA 02062  
Phone: 781-769-7710  
Fax: 781-769-2834  
[www.servomex.com](http://www.servomex.com)

Shannon Chemical Corp.  
P.O. Box 376  
Malvern, PA 19355  
Phone: 610-363-9090  
Fax: 610-524-6050  
[www.shannonchem.com](http://www.shannonchem.com)

Silbrico Corp.  
6300 River Rd.  
Hodgkins, IL 60525-4257  
Phone: 708-354-3350  
Fax: 708-354-6698

Simon-Hartley, Ltd.  
Stoke-On-Trent  
Staffordshire, ST4 7BH England  
Phone: 0782-202300  
Fax: 0782-260534

Smith & Loveless, Inc.  
14040 Sante Fe Trail Dr.  
Lenexa, KS 66215-1284  
Phone: 913-888-5201  
Fax: 913-888-2173  
[www.smithandloveless.com](http://www.smithandloveless.com)

Solidur Plastics Co.  
200 Industrial Dr.  
Delmont, PA 15626  
Phone: 724-468-6868  
Fax: 724-468-4044

Solinst Canada Ltd.  
35 Todd Rd.  
Georgetown, Ontario, L7G 4R8  
Phone: 905-873-2255  
Fax: 905-873-1992  
[www.solinst.com](http://www.solinst.com)

Solucorp Industries Corp.  
250 W. Nyack Rd.  
West Nyack, NY 10994  
Phone: 914-623-2333  
Fax: 914-623-4987  
[www.solucorpltd.com](http://www.solucorpltd.com)

Solvay America  
3333 Richmond  
Houston, TX 77098  
Phone: 713-525-6000  
Fax: 713-524-7887  
[www.solvay.com](http://www.solvay.com)

Somat Corp.  
855 Fox Chase  
Coatesville, PA 19320  
Phone: 610-384-7000  
Fax: 610-380-8500  
[www.somatcorp.com](http://www.somatcorp.com)

Spaulding Composites Co.  
1300 S. Seventh St.  
Dekalb, IL 60115  
Phone: 815-758-8181  
Fax: 815-758-1900  
[www.spauldingcom.com](http://www.spauldingcom.com)

Spencer Turbine Co.  
600 Day Hill Rd.  
Windsor, CT 06095  
Phone: 860-688-8361  
Fax: 860-688-0098

Sper Chemical Corp.  
14770 62nd St.  
Clearwater, FL 33760-2331  
Phone: 727-535-9033  
Fax: 727-530-0741

Spirac AB  
Box 30033  
200 61 Malmo, Sweden  
Phone: 46-(0)40-162020  
Fax: 46-(0)40-153650

Spirac USA, Inc.  
P.O. Box 3137  
Peachtree City, GA 30269  
Phone: 770-632-9833  
Fax: 770-632-9838  
[www.spirac.se](http://www.spirac.se)

SRE, Inc.  
510 Franklin Ave.  
Nutley, NJ 07110  
Phone: 973-661-5192  
Fax: 973-661-3713  
[www.sreinc.com](http://www.sreinc.com)

SRS Crisafulli, Inc.  
P.O. Box 1051  
Glendive, MT 59330-9985  
Phone: 406-365-3393  
Fax: 406-365-8088  
[www.crisafulli.com](http://www.crisafulli.com)

SRS Industrial Engineering  
362 S. Main  
Clearfield, UT 84015  
Phone: 801-773-1311  
Fax: 801-773-8608

Stahler GmbH  
Muhlenhof 1  
D-65589 Hadamar, Germany  
Phone: 49-64-33-93000  
Fax: 49-64-33-5960

Stancor Pump, Inc.  
515 Fan Hill Rd.  
Monroe, CT 06468  
Phone: 203-268-7513  
Fax: 203-268-7958

Stanley Pump & Equipment, Inc.  
2525 South Clearbrook Dr.  
Arlington Heights, IL 60005  
Phone: 847-439-9200  
Fax: 847-439-9388  
[www.stanleypump.com](http://www.stanleypump.com)

Star Systems, Inc.  
P.O. Box 518  
Timmonsville, SC 29161  
Phone: 843-346-3101  
Fax: 843-346-3736  
[www.hilliardcorp.com](http://www.hilliardcorp.com)

Steel Tank Institute  
570 Oakwood Rd.  
Lake Zurich, IL 60047  
Phone: 847-438-8265  
Fax: 847-438-4509  
[www.steeltank.com](http://www.steeltank.com)

Sterling Fluid Systems (USA)  
P.O. Box 460  
Grand Island, NY 14072  
Phone: 716-773-6450  
Fax: 716-773-2330  
[www.sterlingfluidsystems.com](http://www.sterlingfluidsystems.com)

Sternson Ltd.  
P.O. Box 1540  
Brantford, Ontario, Canada N3T 5V6  
Phone: 519-759-7570  
Fax: 519-759-8962

Stevens Water Monitoring Systems  
P.O. Box 40  
Beaverton, OR 97075-0040  
Phone: 503-646-9171  
Fax: 503-526-1471  
[www.stevenswater.com](http://www.stevenswater.com)

Stiles-Kem Divison, Met Pro Corp.  
1570 Lakeside Dr.  
Waukegan, IL 60085-8309  
Phone: 847-689-1100  
Fax: 847-689-9289

Stockhausen, Inc.  
3408 Doyle St.  
Greensboro, NC 27406  
Phone: 910-333-3500  
Fax: 910-333-3518

Stormceptor Corp.  
600 Jefferson Plaza, Ste. 304  
Rockville, MD 20852  
Phone: 301-762-8361  
Fax: 301-762-4190  
[www.csrstormceptor.com](http://www.csrstormceptor.com)

StormTreat Systems, Inc.  
3408 Doyle St.  
Barnstable, MA 02630  
Phone: 508-778-4449  
Fax: 508-362-5335

Stormwater Management  
2035 N.E. Colombia Blvd.  
Portland, OR 97211  
Phone: 503-240-9553  
Fax: 503-240-9553  
[www.stormwatermgt.com](http://www.stormwatermgt.com)

Strategic Diagnostics, Inc.  
111 Pencader Dr.  
Newark, DE 19702  
Phone: 302-456-6789  
Fax: 302-456-6782  
[www.sdix.com](http://www.sdix.com)

Süd-Chemie Prototech Inc.  
32 Fremont St.  
Needham, MA 02194  
Phone: 781-444-5188  
Fax: 781-444-0130  
[www.prototechco.com](http://www.prototechco.com)

SulfaTreat Co.  
17998 Chesterfield Airport Rd., Ste. 215  
Chesterfield, MO 63005  
Phone: 314-532-2189  
Fax: 314-532-2764  
[www.sulfatreat.com](http://www.sulfatreat.com)

Sumitomo Machinery Corp.  
4200 Holland Blvd.  
Chesapeake, VA 23323  
Phone: 757-485-3355  
Fax: 757-487-3193  
[www.smcyclo.com](http://www.smcyclo.com)

Svedala Industries, Inc.  
P.O. Box 15312  
York, PA 17405-7312  
Phone: 717-843-8671  
Fax: 717-845-5154

SWECO Engineering Corp.  
7120 New Buffington Rd.  
Florence, KY 41042  
Phone: 859-727-5147  
Fax: 859-727-5122  
[www.sweco.com](http://www.sweco.com)

Sybron Chemicals, Biochemical  
Division  
111 Kesler Mill Rd.  
Salem, VA 24153  
Phone: 540-389-9361  
Fax: 540-389-9364  
[www.sybronchemicals.com](http://www.sybronchemicals.com)

Sybron Chemicals, Inc.  
P.O. Box 66  
Birmingham, NJ 08011  
Phone: 609-893-1100  
Fax: 609-894-8641  
[www.sybronchemicals.com](http://www.sybronchemicals.com)

Synetix  
2 Transam Plaza Dr., Ste. 230  
Oak Brook Terrace, IL 60181  
Phone: 630-268-6300  
Fax: 630-268-9797  
[www.synetix.com](http://www.synetix.com)

TAH Industries, Inc.  
107 N. Gold Dr.  
Robbinsville, NJ 08691  
Phone: 609-259-9222  
Fax: 609-259-0957

Tate Andale, Inc.  
1941 Lansdowne Rd.  
Baltimore, MD 21227-1789  
Phone: 410-247-8700  
Fax: 410-247-9672

Techniflo Systems  
12300 Perry Highway  
Wexford, PA 15090  
Phone: 412-749-0600  
Fax: 412-935-0777

Tecnetics Industries, Inc.  
1811 Buerkle Rd.  
St. Paul, MN 55110  
Phone: 651-777-4780  
Fax: 651-777-5582  
[www.tecweigh.com](http://www.tecweigh.com)

Tellkamp Systems, Inc.  
15523 Carmenita Rd.  
Sante Fe Springs, CA 90670  
Phone: 562-802-1621  
Fax: 562-802-1303  
[www.tellkamp.com](http://www.tellkamp.com)

Tenco Hydro, Inc.  
4620 Forest Ave.  
Brookfield, IL 60513  
Phone: 708-387-0700  
Fax: 708-387-0732

Tetra Process Technologies  
Park West One, Ste. 600  
Pittsburgh, PA 15275  
Phone: 412-788-8300  
Fax: 412-788-8304

Tetratec  
1741 Loretta Ave.  
Feasterville, PA 19053  
Phone: 215-355-7111  
Fax: 215-355-6745  
[www.tetratex.com](http://www.tetratex.com)

Thermaco, Inc.  
646 Greensboro St.  
Asheboro, NC 27204  
Phone: 336-629-4651  
Fax: 336-626-5739  
[www.big-dipper.com](http://www.big-dipper.com)



Thermacon Enviro Systems, Inc.  
1983 Marcus Ave.  
Lake Success, NY 11042  
Phone: 516-328-6600  
Fax: 516-328-7988  
[www.thermacon.com](http://www.thermacon.com)

ThermaFab, Inc.  
200 Rich Lex Dr.  
Lexington, SC 29072  
Phone: 803-794-2543  
Fax: 803-796-0999

Thermal Black Clawson  
605 Clark St.  
Middletown, OH 45042  
Phone: 513-424-7400  
Fax: 513-424-1168

Thermatrix, Inc.  
308 N. Peteres Rd.  
Knoxville, TN 37922  
Phone: 423-539-9603  
Fax: 423-539-9643  
[www.thermatrix.com](http://www.thermatrix.com)

Thermax, Ltd.  
40440 Grand River  
Novi, MI 48050  
Phone: 248-474-3050  
Fax: 248-474-5790

TIGG Corp.  
Box 11661  
Pittsburgh, PA 15228  
Phone: 412-563-4300  
Fax: 412-563-6155

TN Technologies, Inc.  
P.O. Box 800  
Round Rock, TX 78680-0800  
Phone: 512-388-9100  
Fax: 512-388-9200  
[www.tnksi.com](http://www.tnksi.com)

Tonka Equipment Co.  
13305 Watertower Circle  
Plymouth, MN 55441  
Phone: 612-559-2837  
Fax: 612-559-1979  
[www.tankwater.com](http://www.tankwater.com)

Toray Industries, Inc.  
2-2, Nichonbashi-Muromachi, Chuo-Ku  
Tokyo, 103 Japan  
Phone: 03-245-5607  
Fax: 03-245-5555

Toyobo Co., Ltd.  
2-8 Dojima Hama 2-chrome, Kita-ku  
Osaka 530-8230, Japan  
Phone: 81-6-6348-3360  
Fax: 81-6-6348-3418  
[www.toyobo.co.jp](http://www.toyobo.co.jp)

Tri-Mer Corp.  
P.O. Box 730  
Owosso, MI 48867  
Phone: 517-723-7838  
Fax: 517-723-7844  
[www.tri-mer.com](http://www.tri-mer.com)

TriSep Corp.  
93 S. La Patera Ln.  
Goleta, CA 93117  
Phone: 805-964-8003  
Fax: 805-964-1235  
[www.trisep.com](http://www.trisep.com)

Triton Technologies  
11917 FM 529  
Houston, TX 77041  
Phone: 713-937-0101  
Fax: 713-937-1979

Trojan Technologies, Inc.  
3020 Gore Rd.  
London, Ontario, Canada N5V 4T7  
Phone: 519-457-3400  
Fax: 519-457-3030  
[www.trojanuv.com](http://www.trojanuv.com)

Trusty Cook, Inc.  
10530 E. 59th St.  
Indianapolis, IN 46236  
Phone: 317-823-6821  
Fax: 317-823-6822  
[www.trusty-cook.com](http://www.trusty-cook.com)

Turner Designs  
845 W. Maude Ave.  
Sunnyvale, CA 94086  
Phone: 408-749-0994  
Fax: 408-749-0998  
[www.turnerdesigns.com](http://www.turnerdesigns.com)

Turnkey Solutions, Inc.  
103 Godwin Ave.  
Midland Park, NJ 07432-1813  
Phone: 201-848-7676  
Fax: 201-848-1643

Tuthill Pneumatics Group  
P.O. Box 2877  
Springfield, MO 65801-2877  
Phone: 417-865-8715  
Fax: 417-865-2950  
[www.mdppneumatics.com](http://www.mdppneumatics.com)

Tytronics, Inc.  
25 Wiggins Ave.  
Bedford, MA 01730-2323  
Phone: 781-275-9660  
Fax: 781-275-9665  
[www.tytronics.com](http://www.tytronics.com)

Ultra Additives, Inc.  
460 Straight St.  
Paterson, NJ 07501  
Phone: 973-279-1306  
Fax: 973-279-0602

Ultraflote Corp.  
8558 Katy Freeway, Ste. 100  
Houston, TX 77024  
Phone: 713-461-2100  
Fax: 713-461-2213  
[www.ultraflote.com](http://www.ultraflote.com)

Underwriters Laboratories, Inc.  
333 Pfingsten Rd.  
Northbrook, IL 60062  
Phone: 847-272-8800  
Fax: 847-509-6219  
[www.ul.com](http://www.ul.com)

Unicel, Inc.  
P.O. Box 15203  
Baton Rouge, LA 70895  
Phone: 225-753-7129  
Fax: 225-753-7125  
[www.unicelinc.com](http://www.unicelinc.com)

Unifilt Corp.  
P.O. Box 389  
Zelienople, PA 16063-0389  
Phone: 724-758-3833  
Fax: 724-758-3870  
[www.unifilt.com](http://www.unifilt.com)

Unimin Corp.  
258 Elm St.  
New Canaan, CT 06840  
Phone: 203-966-8880  
Fax: 203-966-3453

Unipure Corp.  
1440 North Harbor, Ste. 125  
Fullerton, CA 92835  
Phone: 714-870-1578  
Fax: 714-870-4576  
[www.unipure.com](http://www.unipure.com)

Unisol  
1810 W. Drake Dr. #103  
Tempe, AZ 85283  
Phone: 480-491-7145  
Fax: 480-491-7185  
[www.unisol-biologics.com](http://www.unisol-biologics.com)

United Industries, Inc.  
P.O. Box 3838  
Baton Rouge, LA 70821-3838  
Phone: 225-292-5527  
Fax: 225-293-1655  
[www.ui-inc.com](http://www.ui-inc.com)

Universal Process Equipment Co.  
P.O. Box 338  
Roosevelt, NJ 08555-0338  
Phone: 609-443-4545  
Fax: 609-259-0644  
[www.upe.com](http://www.upe.com)

USFilter Recovery Services  
2430 Rose Pl.  
Roseville, MN 55113  
Phone: 651-638-1300  
Fax: 651-633-5074  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Aerator Products  
11765 Main St.  
Roscoe, IL 61073  
Phone: 815-623-2111  
Fax: 815-623-6416  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Asdor  
250 Royal Crest Ct.  
Markham, Ontario, Canada L3R 3S1  
Phone: 905-944-2828-836-7700  
Fax: 905-474-1334  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Bekox  
Pol.Ind. Santa Ana, C/El Electrodo, 52  
Rivas Vaciamadrid, 28529  
Phone: 34-91-660-4000  
Fax: 34-91-666-7716  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Contra-Shear  
CPO Box 1611  
Auckland, New Zealand  
Phone: 64-9-818-6108  
Fax: 64-9-818-6599  
[www.contra-shear.co.nz](http://www.contra-shear.co.nz)

USFilter/Control Systems  
1239 Willow Lake Blvd.  
Vadnais, MN 55110  
Phone: 651-766-2700  
Fax: 651-766-2701  
[www.usfilter.com](http://www.usfilter.com)

USFilter/CPC  
441 Main St.  
Sturbridge, MA 01566  
Phone: 508-347-7344  
Fax: 508-347-7049  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Davco  
P.O. Box 1419  
Thomasville, GA 31792  
Phone: 912-226-5733  
Fax: 912-228-0312  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Davis Process  
2650 Tallevast Rd.  
Sarasota, FL 34243  
Phone: 941-355-2971  
Fax: 941-351-4756  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Dewatering Systems  
2155 112th Ave.  
Holland, MI 49424-9604  
Phone: 616-772-9011  
Fax: 616-772-4516  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Diffused Air Products Group  
8506 Beechmont Ave.  
Cincinnati, OH 45255  
Phone: 513-388-4100  
Fax: 513-388-4111  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Electrocatalytic  
2 Milltown Ct.  
Union, NJ 07083  
Phone: 908-851-6952  
Fax: 908-851-6906  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Envirex  
P.O. Box 1604  
Waukesha, WI 53187  
Phone: 262-541-0141  
Fax: 262-541-4120  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Filtration & Separation  
2118 Greenspring Dr.  
Timonium, MD 21093  
Phone: 410-252-0800  
Fax: 410-560-2857  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Gas Technologies  
1501 E, Woodfield Rd.  
Schaumburg, IL 60173  
Phone: 847-706-6900  
Fax: 847-706-6996  
[www.usfilter.com](http://www.usfilter.com)

USFilter/General Filter  
600 Arrasmith Trail  
Ames, IA 50010  
Phone: 515-232-4121  
Fax: 515-232-2571  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Gutling  
Postfach 1445  
Fellbach, Germany 70704  
Phone: 07-11-518550-0  
Fax: 07-11-518550-100  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Headworks Products  
100 Highpoint Dr.  
Chalfont, PA 18914  
Phone: 215-712-0280  
Fax: 215-996-1136  
[www.usfilter.com](http://www.usfilter.com)

USFilter/HPD  
2 West Main St.  
Plainfield, IL 60544  
Phone: 815-436-3013  
Fax: 815-436-3010  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Hubert  
P.O. Box 29  
8715 ZH Stavoren, The Netherlands  
Phone: 31-514-684444  
Fax: 31-514-682198  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Industrial Wastewater Systems  
181 Thorn Hill Rd.  
Warrendale, PA 15086-7257  
Phone: 724-772-0044  
Fax: 724-772-1202  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Jet Tech  
P.O. Box 13306  
Edwardsville, KS 66113-0306  
Phone: 913-422-7600  
Fax: 913-422-7667  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Johnson Screens  
P.O. Box 64118  
St. Paul, MN 55164  
Phone: 651-636-3900  
Fax: 651-638-3132  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Krüger  
401 Harrison Oaks Blvd., Ste. 100  
Cary, NC 27513  
Phone: 919-677-8310  
Fax: 919-677-0082  
<http://KrugerWorld.com/>

USFilter/Lowell  
10 Technology Dr.  
Lowell, MA 01581  
Phone: 978-934-9349  
Fax: 978-441-6025  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Memcor  
2118 Greenspring Dr.  
Timonium, MD 21093  
Phone: 410-308-2947  
Fax: 410-561-3017  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Microfloc  
44 Main St.  
Sturbridge, MA 01566  
Phone: 508-347-7344  
Fax: 508-347-7049  
[www.usfilter.com](http://www.usfilter.com)

USFilter/RJ Environmental  
13100 Gregg St.  
Poway, CA 92064  
Phone: 858-486-8500  
Fax: 858-486-8501  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Rockford  
4669 Shepherd Trail  
Rockford, IL 61103  
Phone: 815-877-3041  
Fax: 815-877-0172  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Rossmark  
P.O. Box 109  
7600 AC Almelo, The Netherlands  
Phone: 31-546-838000  
Fax: 31-546-814141  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Schumacher Filters  
P.O. Box 8040  
Asheville, NC 28814  
Phone: 828-252-9000  
Fax: 828-253-7773  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Smogless  
Via L. Mascheroni, 29  
20145 Milan, Italy  
Phone: 02-48595-1  
Fax: 02-48008417

USFilter/Stranco  
P.O. Box 389  
Bradley, IL 60915  
Phone: 815-939-1265  
Fax: 815-932-0674  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Wallace & Tiernan  
1901 West Garden Rd.  
Vineland, NJ 08360  
Phone: 856-507-9000  
Fax: 856-507-4125  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Whittier  
12442 East Putnam St.  
Whittier, CA 90602  
Phone: 562-698-9414  
Fax: 562-698-1960  
[www.usfilter.com](http://www.usfilter.com)

USFilter/Zimpro  
301 W. Military Rd.  
Rothschild, WI 54474  
Phone: 715-359-7211  
Fax: 715-355-3219  
[www.usfilter.com](http://www.usfilter.com)

UV Systems Technology, Inc.  
2800 Ingleton Ave.  
Burnaby, BC V5C 6G7  
Phone: 604-451-1069  
Fax: 604-451-1072  
[www.ultraguard.com](http://www.ultraguard.com)

Val-Matic Valve & Manufacturing Corp.  
905 Riverside Dr.  
Elmhurst, IL 60126  
Phone: 630-941-7600  
Fax: 630-941-8042  
[www.valmatic.com](http://www.valmatic.com)

Vanton Pump & Equipment Corp.  
201 Sweetland Ave.  
Hillside, NJ 07205  
Phone: 908-688-4216  
Fax: 908-686-9314  
[www.vanton.com](http://www.vanton.com)

Vara International  
1201 19th Pl.  
Vero Beach, FL 32960  
Phone: 561-567-1320  
Fax: 561-567-4108

Vaughan Co., Inc.  
364 Monte Elma Rd.  
Montesano, WA 98563  
Phone: 360-249-4042  
Fax: 360-249-6155  
[www.chopperpumps.com](http://www.chopperpumps.com)

Verder, Inc.  
P.O. Box 1329  
West Chester, PA 19380  
Phone: 610-429-4200  
Fax: 610-429-1139  
[www.verderflex.com](http://www.verderflex.com)

Vibra Screw, Inc.  
755 Union Blvd.  
Totowa, NJ 07511  
Phone: 973-256-7410  
Fax: 973-256-7567

Vikoma International Ltd.  
Propect Rd., Cowes  
Isle of Wight PO31 7AD, England  
Phone: 44 (0)983 296021  
Fax: 44 (0)983 299035

Vincent Corp.  
P.O. Box 5747  
Tampa, FL 33675  
Phone: 813-248-2650  
Fax: 813-247-7557  
[www.vincentcorp.com](http://www.vincentcorp.com)

VMI Inc.  
1125 N. Maitlen Dr.  
Cushing, OK 74023  
Phone: 918-225-7000  
Fax: 918-225-0333  
[www.vmi-dredges.com](http://www.vmi-dredges.com)

Voith Sulzer  
P.O. Box 688  
Neenah, WI 54957  
Phone: 920-722-7713  
Fax: 920-725-8615

Vortechincs, Inc.  
41 Evergreen Dr.  
Portland, ME 04103-1067  
Phone: 207-878-3662  
Fax: 207-878-8507  
[www.vortechincs.com](http://www.vortechincs.com)

Vortex Ventures  
6611 Portwest Dr.  
Houston, TX 77024  
Phone: 713-869-2593  
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[www.vortexventures.com](http://www.vortexventures.com)

Vulcan Industries, Inc.  
P.O. Box 390  
Missouri Valley, IA 51555  
Phone: 712-642-2755  
Fax: 712-642-4256  
[www.vulcanindustries.com](http://www.vulcanindustries.com)

Vulcan Performance Chemicals  
P.O. 38015  
Birmingham, AL 35238-5015  
Phone: 205-298-3000  
Fax: 205-298-2955  
[www.vul.com](http://www.vul.com)

W.L. Gore & Associates, Inc.  
P.O. Box 1100  
Elkton, MD 21922-1100  
Phone: 410-392-3300  
Fax: 410-398-6624  
[www.wlgore.com](http://www.wlgore.com)

Walker Process Equipment  
840 N. Russell Ave.  
Aurora, IL 60506  
Phone: 630-892-7921  
Fax: 630-892-7951  
[www.walker-process](http://www.walker-process)

Warren Rupp, Inc.  
P.O. Box 1568  
Mansfield, OH 44901-1568  
Phone: 419-524-8388  
Fax: 419-522-7867  
[www.warrenrupp.com](http://www.warrenrupp.com)

Waste Water Systems, Inc.  
4386 Lilburn Industrial Way  
Lilburn, GA 30047  
Phone: 770-921-0022  
Fax: 770-564-0409

Waste-Tech, Inc.  
1931 Industrial Dr.  
Libertyville, IL 60048-9738  
Phone: 847-367-5150  
Fax: 847-367-1787

Water and Power Technologies  
P.O. Box 27836  
Salt Lake City, UT 84127-0836  
Phone: 801-974-5500  
Fax: 801-973-9733  
[www.wpt.com](http://www.wpt.com)

Water Resources Group, Inc.  
P.O. Box 470  
Auburn, AL 36831  
Phone: 334-821-1135  
Fax: 334-821-2451

Waterlink Biological Systems  
630 Currant Rd.  
Fall River, MA 02720-4732  
Phone: 508-679-6770  
Fax: 508-672-5779  
[www.waterlink.com](http://www.waterlink.com)

Waterlink Inc.  
4100 Holiday St. N.W.  
Canton, OH 44718-2532  
Phone: 330-649-4000  
Fax: 330-649-4008  
[www.waterlink.com](http://www.waterlink.com)

Waterlink Separations, Inc.  
29850 N. Skokie Hwy.  
Lake Bluff, IL 60044  
Phone: 847-473-3700  
Fax: 847-473-0477  
[www.waterlink.com](http://www.waterlink.com)

Waterlink/Aero-Mod Systems  
7927 US Highway 24  
Manhattan, KS 66502-4995  
Phone: 785-537-4995  
Fax: 785-537-0813  
[www.waterlink.com](http://www.waterlink.com)

Waterlink/Barnebey Sutcliffe  
835 N. Cassady Ave.  
Columbus, OH 43219  
Phone: 614-258-9501  
Fax: 614-258-3464  
[www.waterlink.com](http://www.waterlink.com)

Watson Marlow, Inc.  
220 Ballardvale  
Wilmington, MA 01887  
Phone: 978-658-6168  
Fax: 978-658-5558  
[www.watson-marlow.com](http://www.watson-marlow.com)

Weatherly  
1100 Spring St., Ste. 800  
Atlanta, GA 30309  
Phone: 404-873-5030  
Fax: 404-873-1303  
[www.weatherlyinc.com](http://www.weatherlyinc.com)

Wescor, Inc.  
459 S. Main St.  
Logan, UT 84321  
Phone: 435-753-7760  
Fax: 435-753-6756  
[www.wescor.com](http://www.wescor.com)

WesTech Engineering Inc.  
P.O. Box 65068  
Salt Lake City, UT 84115-0068  
Phone: 801-265-1000  
Fax: 801-265-1080  
[www.westech-inc.com](http://www.westech-inc.com)

Western States Machine Co.  
P.O. Box 327  
Hamilton, OH 45012  
Phone: 513-863-4758  
Fax: 513-863-3846  
[www.westernstates.com](http://www.westernstates.com)

Westfalia Separator, Inc.  
100 Fairway Ct.  
Northvale, NJ 07647  
Phone: 201-767-3900  
Fax: 201-767-4399  
[www.westfaliaseparatorus.com](http://www.westfaliaseparatorus.com)

Westport Environmental Systems  
251 Forge Rd.  
Westport, MA 02790-0217  
Phone: 508-636-8811  
Fax: 508-636-2088  
[www.wesenvsys.com](http://www.wesenvsys.com)

Westwood Chemical Corp.  
46 Tower Dr.  
Middletown, NY 10940  
Phone: 914-692-6721  
Fax: 914-695-1906

Wheelabrator Air Pollution Control, Inc.  
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[www.bio-gro.com](http://www.bio-gro.com)

Wilfley Weber, Inc.  
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WRc Process Engineering  
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Yeomans Chicago Corp.  
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