



vertical profiling systems



Automated water quality monitoring and telemetry systems

providing 24/7 water column profiling
and remote data delivery for
freshwater and marine environments

vertical profiling for continuous monitoring

Simultaneously monitor water quality, water velocity, and meteorological data 24/7 with an automated Vertical Profiling System, the most comprehensive environmental monitoring system available.

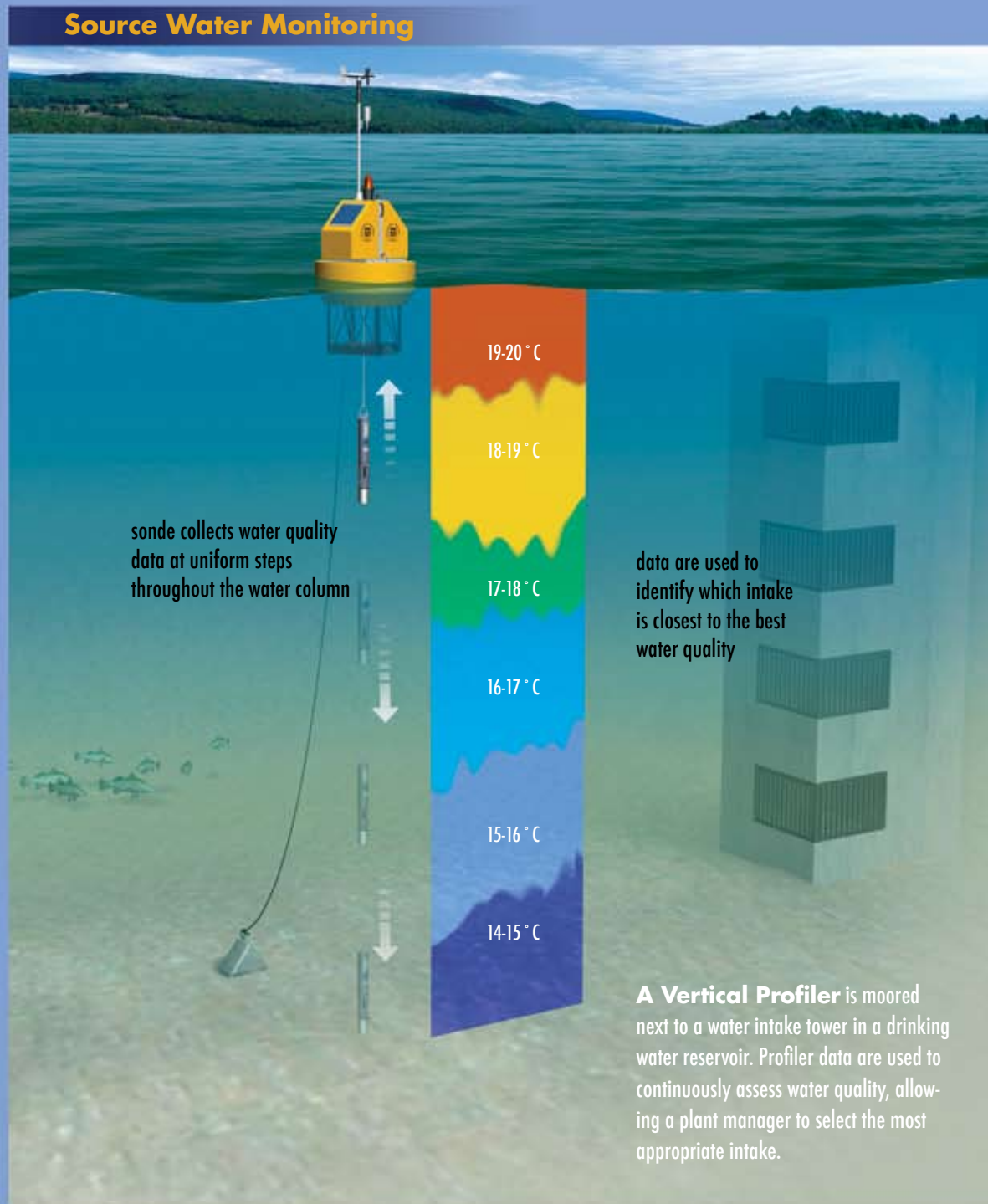
Why Profile?

Water quality assessment is best conducted through a **complete time series** that monitors physical, chemical, and biological parameters.

YSI's automated Vertical Profiler offers further advancements by **sampling at different depths, allowing you to monitor an entire water column.**

Variations in temperature, wind, rainfall, salinity, and flow cause changes in the vertical structure of a water column, varying from highly stratified to well-mixed.

Users who apply data from a Vertical Profiler will see the impacts of the physical environment on their water resources—**without frequent trips to the field.**



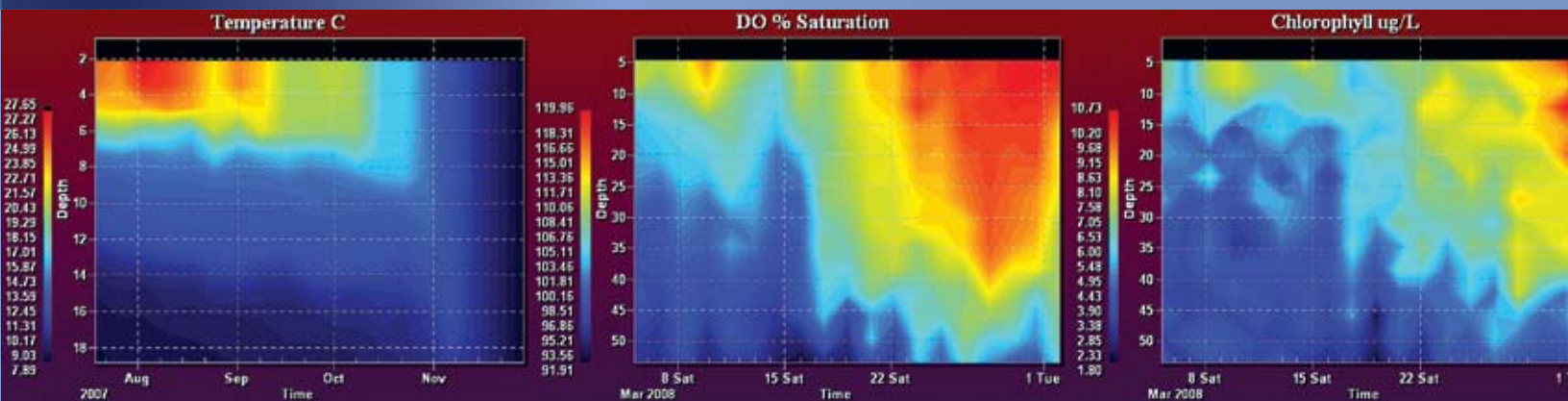
Make informed decisions about:

- Water quality at different drinking water intakes
- Taste and odor issues
- Water quality in reservoirs, lakes, bays, estuaries, and near-coastal areas
- Impacts of nearby development and construction

800.897.4151 [US]
+1 937 767 7241

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Data



Data sets show diurnal changes in water column as well as gradual changes occurring throughout the time series.

Visual display of data by AQUARIUS® Time-Series software.

What Are Your Concerns?

Algae problems?

- Blanketing algae blocking filters
- Penetrating algae causing taste and odor events
- Toxic algae with public health implications

Improve efficiency?

- Treatment decisions based on real-time raw water quality conditions
- Optimal flocculent choice
- Reduce filter/sludge waste with targeted treatments

Energy costs?

- Control mixers and oxygenation systems with real-time stratification data
- Evaluate the effectiveness of aeration systems and control their use

Understanding reservoir dynamics?

- Establish a 3-D baseline automatically across all seasons
- Predict turnover or blooms based on data trends
- Complement water quality with MET data to predict events and their propagation throughout reservoir

Streamline operations?

- Prevent slow-downs in output rate with real-time source water data
- Prevent overpressure on pumps due to filter clogging
- Avoid re-circulating water with early warning of influent conditions
- Reduce chemical and filter costs with targeted treatment
- Reduce trips to field for manual profiles

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Raw Water Intake



algae or blue-green algae bloom
with maximum biomass at
subsurface level

water intake to
drinking water
plant

storms can cause elevated
turbidity levels at various depths

An automated system provides a data set far superior to one generated through spot sampling.

The system will detect short-term events routinely missed by traditional field sampling programs:

- Early identification of algal blooms
- Diurnal low-oxygen events
- High turbidity plumes
- Changes in thermocline and pycnocline

Why YSI?

YSI understands the true value of generating continuous environmental data because many of our employees were once our customers. We know that longer intervals between maintenance and fewer failures equal significant savings in time and money.

Our systems include water quality and velocity sensors, floating and fixed platforms, mounting hardware, flexible data collection platforms, and installation and maintenance services.

Every environment is unique. Talk with our hands-on applications specialists, who can assist you with your specific monitoring needs.



YSI applications specialists and customer set up a vertical profiler.



Vertical Profiling Systems

Comprised of three components: **1)** a floating or fixed mounting platform, **2)** a profiling package composed of a controller, winch, data logging and telemetry system, and meteorological sensor suite (optional), and **3)** an underwater sensor package that typically includes a YSI 6-Series water quality sonde and other sensors upon request.

To order or for more information, contact YSI

800 897 4151 (US)
+1 937 767 7241
www.ysi.com

YSI Environmental
+1 937 767 7241
Fax +1 937 767 9353
environmental@ysi.com

YSI Integrated Systems & Services
+1 508 748 0366
Fax +1 508 748 2543
systems@ysi.com

SonTek/YSI
+1 858 546 8327
Fax +1 858 546 8150
inquiry@sontek.com

YSI Gulf Coast
+1 225 753 2650
Fax +1 225 753 8669
gulfcoast@ysi.com

AMJ Environmental
+1 727 565 2201
info@amjenviro.com

YSI Hydrodata (UK)
+44 (0) 1462 673 581
Fax +44 (0) 1462 673 582
europe@ysi.com

YSI Middle East (Bahrain)
+973 1753 6222
Fax +973 1753 6333
halsalem@ysi.com

YSI (Hong Kong) Limited
+852 2891 8154
Fax +852 2834 0034
hongkong@ysi.com

YSI (China) Limited
+86 10 5203 9675
Fax +86 10 5203 9679
beijing@ysi-china.com

YSI Nanotech (Japan)
+81 44 222 0009
Fax +81 44 221 1102
nanotech@ysi.com

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Yellow Springs, Ohio Facility

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Who's Minding
the Planet?®



YSI 6950 Fixed Profiling System can be attached to any fixed structure such as a bridge or pier

YSI 6951 Pontoon-Mounted Profiling System with meteorological package provides a stable work surface and easy-to-deploy design for low-energy environments

YSI 6952 Buoy-Based Profiling System for high-energy environments

Anti-fouling technology

Integrated wipers and new copper-alloy Anti-Fouling Kits for YSI sensors prevent the growth of biofouling, prolong maintenance intervals, lower operating costs, and improve reliability.



Adjust profile steps

As water levels fluctuate, data from optional fixed reference sonde or optional depth sounder automatically compensate for the changes. Alternately, a 50-point table entry may be used.



Vertical Profiling System Specifications

Minimum Profile Depth	1 meter
Maximum Profile Depth	100 meters
Depth Profile Setpoint Accuracy	±0.1 meter (±0.2 meter for fixed reference)
Recommended/Min. Step Size	1 meter/0.5 meter
Maximum Profile Frequency	~50% of duty cycle
Sensor Options	<u>Water Quality</u> : Conductivity, temperature, depth, dissolved oxygen, pH/ORP, turbidity, chlorophyll <i>a</i> , blue-green algae, PAR, and velocity <u>Meteorological</u> : Wind speed and direction, barometric pressure, rainfall, relative humidity, light, and air temperature
Sensor Step Modes	Table entry (50 steps max.) or computed
Power Requirement	12 VDC 18Ah (fixed), 120/240 VAC (fixed), 12 VDC 95Ah (floating)
Cable Options	15 meter vented, 50 meter, or 100 meter