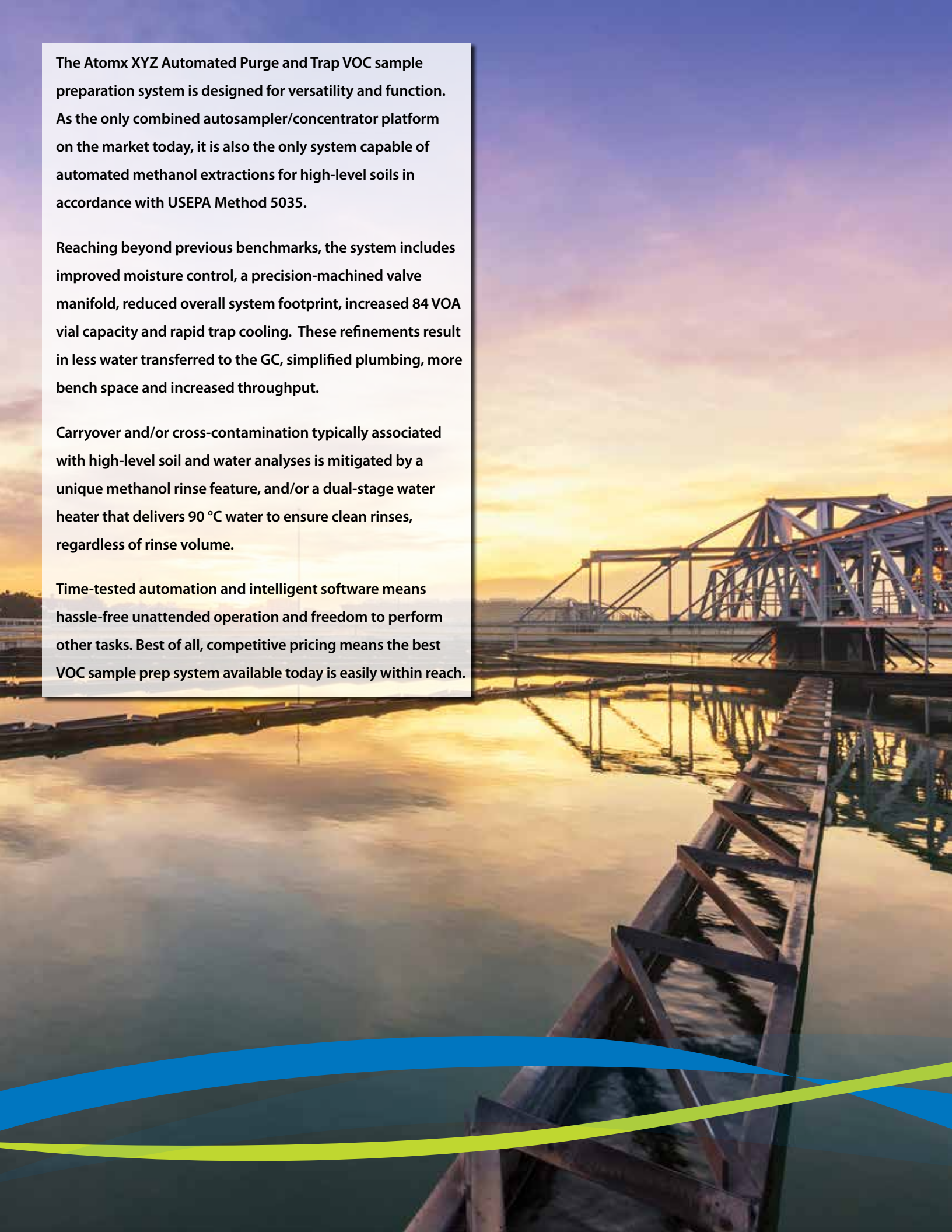
TELEDYNE TEKMAR
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VERSATILE • OPTIMAL • COMPACT



Atomx XYZ

Automated VOC Sample Prep System



The Atomx XYZ Automated Purge and Trap VOC sample preparation system is designed for versatility and function. As the only combined autosampler/concentrator platform on the market today, it is also the only system capable of automated methanol extractions for high-level soils in accordance with USEPA Method 5035.

Reaching beyond previous benchmarks, the system includes improved moisture control, a precision-machined valve manifold, reduced overall system footprint, increased 84 VOA vial capacity and rapid trap cooling. These refinements result in less water transferred to the GC, simplified plumbing, more bench space and increased throughput.

Carryover and/or cross-contamination typically associated with high-level soil and water analyses is mitigated by a unique methanol rinse feature, and/or a dual-stage water heater that delivers 90 °C water to ensure clean rinses, regardless of rinse volume.

Time-tested automation and intelligent software means hassle-free unattended operation and freedom to perform other tasks. Best of all, competitive pricing means the best VOC sample prep system available today is easily within reach.

Flexibility

The Atomx XYZ accommodates a variety of sample types including drinking water, wastewater, soils, and sludges. The three-stage, single needle design is capable of transferring liquid sample aliquots from the vial to the sparger, as well as purging low-level solid samples directly in the vial. For high-level solids, the same needle is used to add methanol, mix, dilute and then extract to the sparger. Compliance with EPA Method 5035 is ensured by minimizing VOC loss by using a truly "closed" system. Surrogate standards can be added before and after extraction.

Applications and Industries

VOC sampling and analysis are used in a wide range of applications in the following industries:

- Environmental
- Food and Beverage
- Pharmaceutical
- Flavor, Fragrance, and Packaging
- Petrochemical

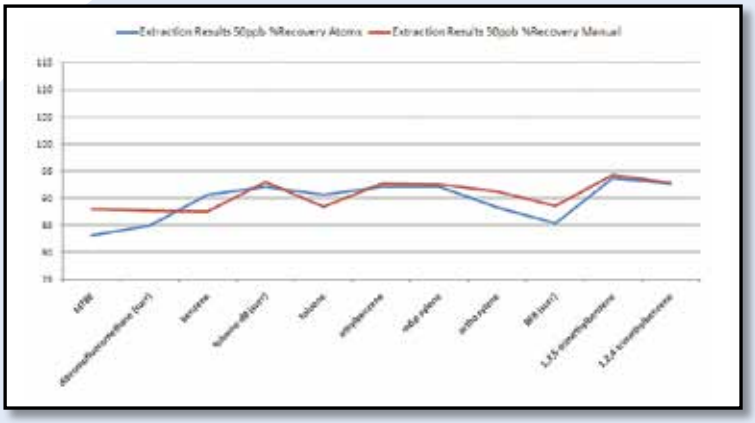
Methods

Including, but not limited to:

- USEPA 502.1, 502.2, 524.2, 524.3, 524.4, 503.1, 601, 602, 603, 624, 5030, 5035, 8010, 8015, 8020, 8021, 8030, 8240, 8260
- MEE Methods HJ 605 and HJ 639
- ASTM and Standard Methods

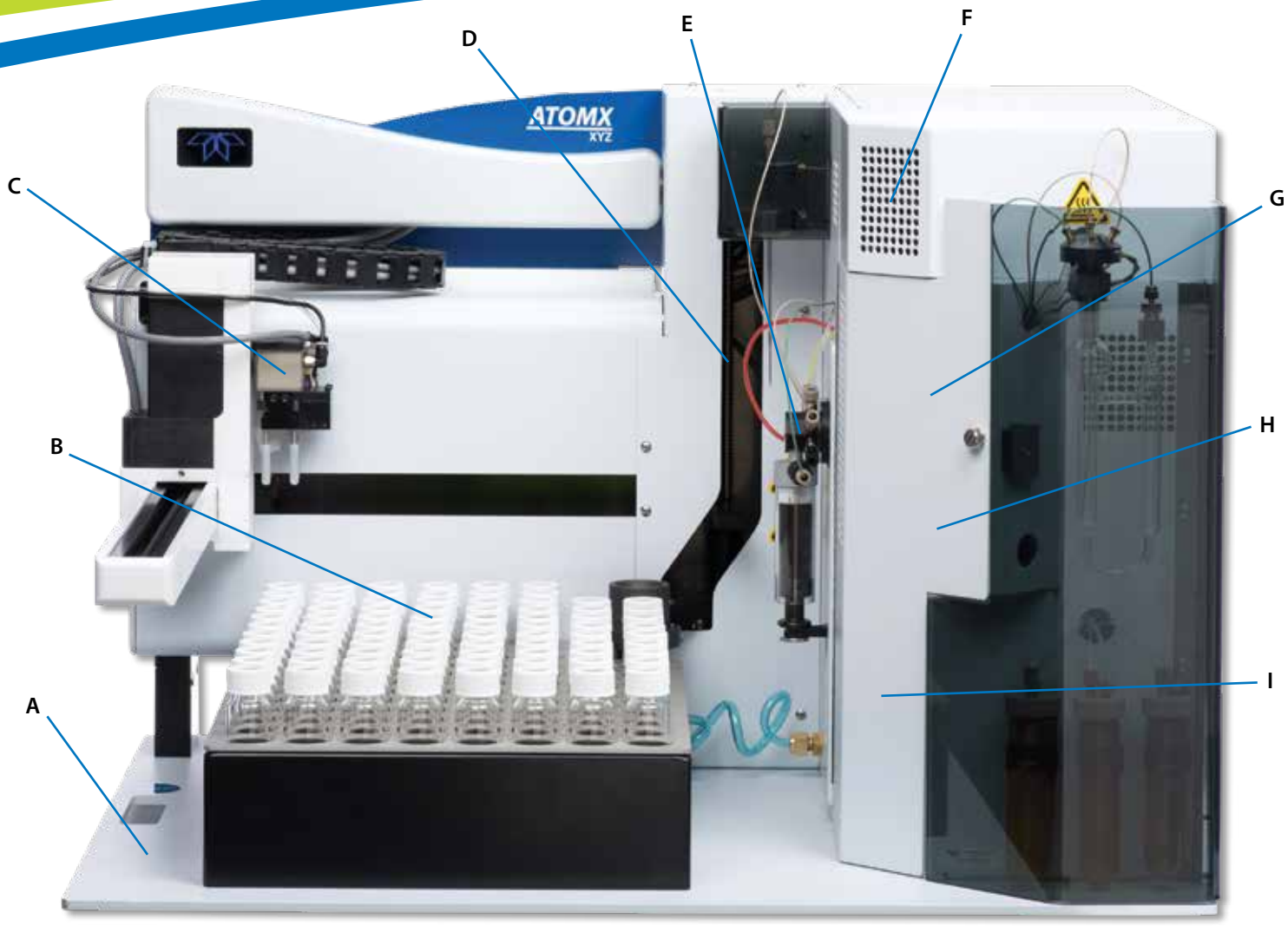
Atomx XYZ completely automates sample preparation and P&T steps including:

- Vial Handling
- Sample Volume Measurement
- Standard Injections
- Dilutions
- Purging
- Desorption
- Rinsing
- Baking
- MEOH Extraction



Automated Methanol Extraction (ME): Trusted Results with Added Resources

Automating methanol extraction means freedom for the laboratory technician. In a side-by-side comparison, the Atomx XYZ's automated ME preparation generates results that match or exceed manual preparation.



Features and Benefits

A. Single Platform System
Combining the concentrator and soils/waters autosampler saves bench space and simplifies consumables, parts and service.

B. 84-Position Sample Tray
The 84-position sample tray loads quickly and increases capacity over previous models. A chiller tray option is also available.

C. XYZ Automation
The quick, whisper-quiet arm has undergone years of refinement and testing to eliminate the issues typically associated with older XYZ autosampler platforms.

D. Sample Elevator
The sample elevator includes a vial heater and variable speed mixer for in-vial samples and soils. A vial stripper bar eliminates the possibility of vial/sample needle interference.

E. Syringe Drive
Accurately dispenses sample volumes from 0 to 25 mL in 0.1 mL increments. Precision is ensured by purging air bubbles from the syringe valve with an aliquot of sample.

F. Advanced Moisture Control System (MCS)
Designed to reduce water vapor transferred to the GC system by 60% over previous models. Efficient enough that dry purge time can be minimized and cycle time reduced.*

G. Simplified Trap Access
Ample analytical trap compartment with access door and easily reached trap connections make routine changes quick and easy.

H. Improved Trap Cooling
Up to 22% faster than previous models due to a powerful fan and dedicated ducting that draws cool outside air, rather than heated air from within the instrument.

I. Redesigned Valve Manifold
A precision-machined manifold reduces plumbing connections by 52% over previous designs and results in improved system reliability.

**Actual moisture reduction is method dependent.*

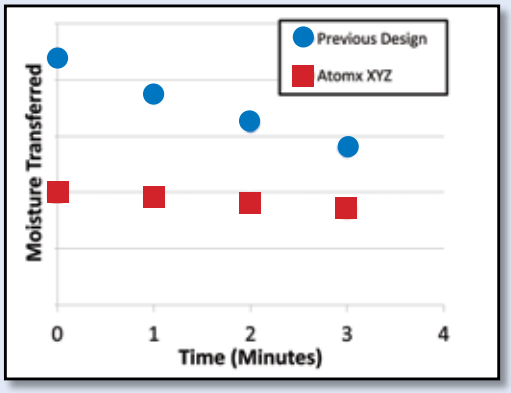
Additional Features

Automated Methanol Extraction (ME)- Only system capable of sampling low and high-level soil samples (>200 ppb) by automating the methanol extraction process.

Mass Flow Controller (MFC) - The digital MFC provides independent programmable flow control and simplifies method optimization for water and soil sample types.

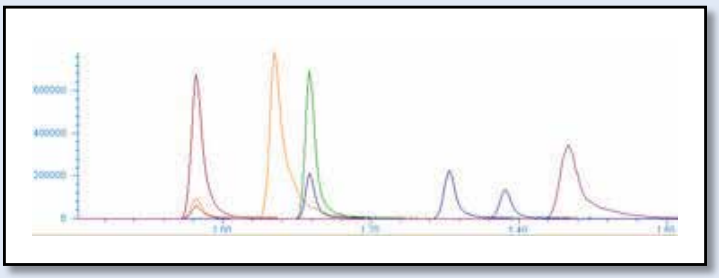
Methanol Rinsing – A unique methanol rinse reduces potential carryover by as much as 50% by cleaning the needle, sample lines, and glassware.

Autodilution - Capable of sample volume dilution up to 100 times (based on 5 and 25 mL sample volumes). This feature also has the ability to extract 50 or 100 µL volumes for ME requirements.



Industry Leading Moisture Control

The new and improved Moisture Control System (MCS) is more efficient than the previous design, allowing the Atomx XYZ to remove more moisture. In most applications, dry purge can be eliminated altogether. Results are method and sample dependent.



Superior Chromatography

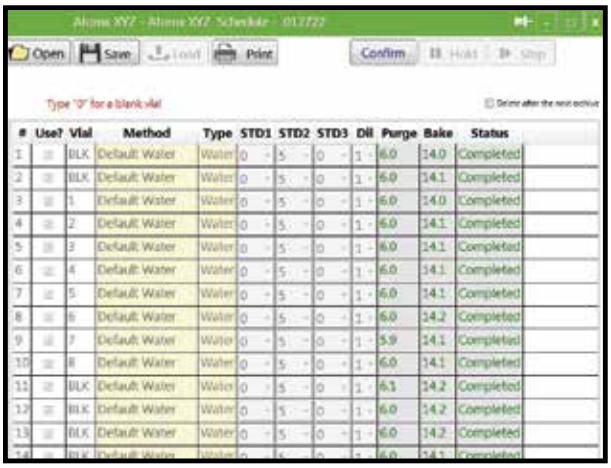
Because of the improved moisture control, excellent peak separation can be obtained for the gasses. This leads to better reproducibilty and sensitivity.



Atomx XYZ TekLink™

An Interface for All Levels of Users

Atomx XYZ TekLink™ was designed to provide a simple user interface underscored by precise control and monitoring. The software includes "out-of-box" default methods, but is equally adapted to creating exacting methods and complex schedule creation. Floating screens that can be "pinned" to the desktop create an uncluttered work environment where necessary information remains in view, while other screens are removed from sight. In the background, Atomx XYZ TekLink™ continuously monitors the analytical process to ensure that operating limits are not exceeded. When needed, automated Leak Check and Benchmark Test functions assist in troubleshooting and instrument validation.



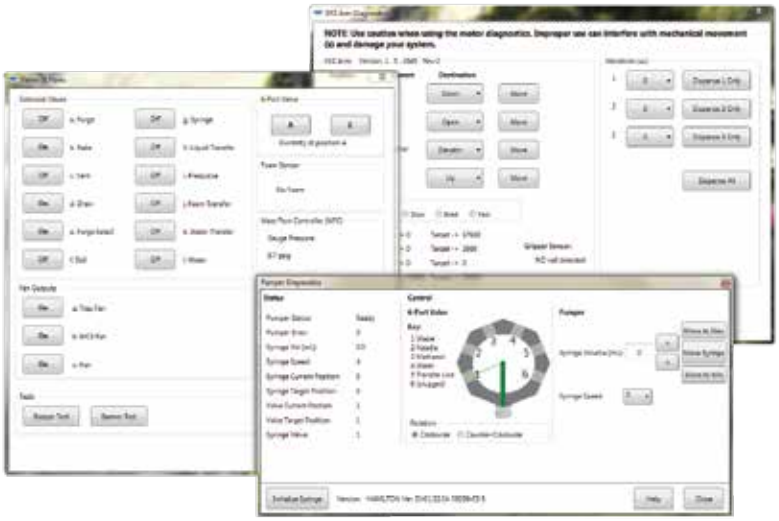
Schedule Screen - Auto-fill, drop-down and right-click functionality speeds schedule creation. Combine multiple methods, three internal standards and a variety of dilutions in one schedule. Real-time editing and revision.



Instrument Status Screen - Provides real-time monitoring of the analytical process including active method, current mode and a complete list of current instrument parameters and their set points.



Method Development Screen - Load default water, soil, and methanol extraction methods for common applications or optimize parameters for specific sample types. Standby, Purge, Desorb, and Bake Tabs allow efficient review and revision of parameters. Parameter description and useful information are shown to the right of the tab.



Diagnostics Options - Direct control of system components along with automated Benchmark Test validation and System Leak Check. Maintenance wizards assist in syringe replacement/initialization and autosampler alignment.



Atomx XYZ Specifications

Automation

Sample Capacity:	84-positions for 40 mL VOA vials.
Vial Size:	Nominal 40 mL capacity, single hole cap with PTFE-faced silicone septum, per EPA specifications; 3 3/4" high without cap and septum; 1 1/16" OD; 24 mm ID cap for water sampling.

Sample Handling

Liquid Handling:	Sample syringe (25 mL) dispenses variable volumes of water from 1 - 25 mL in 0.1 mL increments. 1/16" OD PEEK™ tubing for liquid transfer.
Sample Gas Pathway:	Glass, PEEK™, SilcoNert® 2000 and PTFE for sample handling.
Cleaning:	The entire liquid sample pathway can be rinsed using a combination of the methanol rinse and the high-temperature DI water rinse cleaning techniques. User defined rinse volume and number of rinses for the needle and glassware.

Gas Handling

Electronic MFC:	System is capable of controlling flow rates between 5-500 mL/min variable between each mode of operation.
Pressure Monitoring:	Ability to record purge and bake pressure for each sample.
Gas Supply:	Ultra-high purity (99.999%) Helium or Nitrogen; Incoming Pressure: 65 - 100 psig, (100 psig max)

Standard Injection

Standard Injection:	Three standard injection systems utilizing 2-way dosing valves mounted on an internal valve manifold.
Capacity:	1, 2, 5, 10, and 20 µL increments.
Consumption:	1 µL per 1 µL injection
Standard Vessels:	Three 15 mL standard vessels, UV-protected and sealed under pressure for standard concentration integrity.

Liquid Samples - includes drinking water and wastewater; Liquid samples containing up to 15 mm of sediment when measured from the bottom of an upright 40 mL vial.

Sample Glassware:	The system is capable of operation with 5-25 mL frit or fritless sparge vessels. Ships standard with 5 mL fritted glassware.
Sample Dilutions:	Programmable automatic aqueous sample dilutions of 1:100, 1:50, 1:25, 1:10, 1:5, 1:2.
Blanks:	Automatic blanks can be pulled from the water reservoir and spiked with standard allowing all autosampler positions to be used for samples.
Cycle Time:	Total Purge & Trap cycle time of 18 minutes, or less depending on the method.

Low-Level Solid Samples - includes all types of natural soils and sediments. Sampled: Direct purge in the vial per USEPA 5035 low-level soil methodology.

Sample Needle:	A 3-stage needle allows for water and standards to be directly added to the vial where the solid sample will be purged.
Vial Heater:	Variable heat control from ambient to 90 °C.
Mixing:	The solid sample can be mixed via a stir bar using three variable speeds.

High-Level Solid Samples - includes all types of soils and sediments. Sampled: Automated Methanol Extraction and subsequent dilution per USEPA 5035 high-level soil methodology.

Extraction:	System is capable of fully automating the methanol extraction of high-concentration soil samples.
Matrix Spike:	The system is configured to allow a surrogate spike to be added directly to the solid sample when the methanol is added for the extraction.
Extraction Dilutions:	Programmable automatic dilutions of methanolic extract of 1:100 or 1:50 for 5 mL sample volumes.

System Control

Instrument Control:	Atomx XYZ TekLink™ software in a Windows® 7 or greater environment. Via USB.
Method Scheduling:	All method types can be run from any position in the sample sequence. Up to three standards can be added to any user-specified position. Multiple runs can be made from the same vial (not recommended).
System History:	The system records a complete history of all sample, schedule and method information.

Service

Electronic Leak Check:	Ability to leak check the entire sample pathway of the system via the automated System Leak Check. Built-in diagnostics that, once a leak has been identified, the system will check independent sub-systems for leaks.
Benchmark Test:	The system has a mode that will allow for full electromechanical testing including; valving, heaters, vial handling systems, liquid delivery system, inputs and outputs.
Diagnostics:	The system offers independent control of all valves, vial handling mechanisms and syringe drive for troubleshooting.

General Specifications

Dimensions & Weight:	Dimensions: 70.1 cm (27.6" W) X 58.42 cm (23" D) X 49.5 cm (19.5" H) Unit weight: 43.1 kg (95 lbs)
Power Requirements:	100-120VAC (±10%), 50/60 Hz, 10.0A, 1150W; 220-240VAC (±10%), 50/60 Hz, 5.0A, 1150W
Environmental Specs:	Operating Temperature: 10°-30 °C; Storage Temperature: -20°-60 °C; Relative Humidity: 10%-90%.
Corrosion Resistance:	The front cover and sample tray are corrosion resistant to waters with a pH range of 1-10.

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