



# C.I.Agent® C.L.A.M.

## Continuous Low-Level Aquatic Monitoring



**C.L.A.M. - sturdy compact design for ease of use in the field.**



**Two C.L.A.M.s are used to monitor the water at Cannelton Lock and Dam in Indiana under the watchful eye of ORSANCO.**



**C.L.A.M. positioned to monitor the west shores of Dauphin Island, Ala. during the Deepwater Horizon Oil Spill.**



**C.L.A.M. disk - that's all that gets sent to the lab.**

### PRODUCT DESCRIPTION:

The C.L.A.M. is a state-of-the-art small submersible extraction sampler using EPA approved SPE (Solid Phase Extraction) media to sequester Pesticides, Herbicides, PAH's, TPH, and other trace organics from water. The C.L.A.M. uses low flow rate extraction sampling (5-60 ml/minute), where water is drawn continuously through the extraction media. It provides an extraction event that can be hours, days or weeks long, allowing capture of trace pollutants from illicit and episodic events. The C.L.A.M. extracts the water in-situ with the same technology the labs use on the bench. It provides a pre-extracted quantitative sampling event representing up to a hundred liters of water, lowering the laboratories' detection limits a hundred fold. The small, dry extraction disk is all that is sent to the laboratory for solvent elution and analysis.

### PRODUCT APPLICATIONS:

The C.L.A.M. can be used in applications such as sampling of urban water systems, rivers, monitoring wells, drinking water systems, watersheds and lakes, agricultural runoff, storm water and marine environments. There are approximately 100 substances controlled by regulations and that list grows every year with lower detection requirements. The C.L.A.M. is your water monitoring solution.

### PERFORMANCE SPECIFICATIONS:

- Low detection; up to 100 liters with a single field extraction
- Uses low flow rate extraction sampling (5-60 ml/minute)
- The small extraction disk is the only item to be sent to the lab for solvent elution and analysis
- Weighs just over one pound, including the four (4) AA batteries
- The C.L.A.M.'s resilient nylon body housing has Luer lock fittings which allow the filter to be locked to the C.L.A.M.'s body, and interlocking of different filter types in two stage assemblies. Each disk comes pre-conditioned with or without 10 ug of Terphenyl d-14 field surrogate added
- The C.L.A.M. SPE disk media can be specific for non-polar analytes, polar compounds and chelating resin disks to sequester multivalent metal cations all at a neutral pH
- Micro pump suction draws the water through the extraction media first, preventing analyte surface absorption on tubing and pumps
- The media and housing uses special lofted filters to retard fouling
- Unique flow design prevents contamination in tubing or pump

### BENEFITS:

- Comes in a waterproof Pelican® field case
- The C.L.A.M. measures 2.5" by 8"
- The C.L.A.M. runs submerged on four AA batteries
- Just sending the small, dry extraction disk to the laboratory for solvent elution and analysis saves costs of extraction, expensive cooler shipments of sample bottles, and seven day holding time requirements.

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*Left: Field agent purges air from the C.L.A.M. before calibrating. The C.L.A.M.'s compact size makes it easy to remove the data disk and insert another, as well as change batteries, while in the field.*



## C.L.A.M. Complete Kit

The C.L.A.M. comes in a sturdy, waterproof, part molded Pelican® field case. The kit includes:

- The C.L.A.M. body constructed with a resilient nylon body housing
- A micro pump with integrated microcircuits and switch, fused into the body with waterproof polymer potting
- Calibration syringe and tubing
- One SPE disk screw on protection cap
- One threaded screw in battery housing plug
- Two rubber gaskets for the battery housing plug
- One 4 AA battery holder
- Two conditioned Oasis HLB SPE media disks.
- A waterproof, part molded Pelican field case



**Complete C.L.A.M. kit in a sturdy Pelican® field case.**

## Solid Phase SPE Extraction Disk

The field hardened housing contains C-18 media which is acceptable for the extraction of TPH, PAH's Pesticides and all non-polar groups. Like all the C.L.A.M. disks, it has Luer lock fittings which allow the filter to be locked to the C.L.A.M. body and interlocking of different filter types in two stage assemblies. Each disk comes pre-conditioned with or without 10 ug of Terphenyl d-14 field surrogate added.



**Choose the type of disk that best meets your testing needs.**

## Solid Phase HLB Extraction Disk

This disk will retain a wide variety of non-polar and polar compounds such as: EPA 525 SOC's, Pesticides, Pyrethroids, Herbicides, TPH, PAH's, Pharmaceuticals, PCP's, PCB's, Dioxins, Furans, PBDE's, Analgesics and Stimulants such as caffeine.

## Pre-Filtration Disk

The Pre-Filtration disk allows for toxicological studies for total and dissolved trace organics. It can be used in a two stage filter assembly, where the filter removes the sediment and allows the water soluble organics to be retained on the bottom HLB or SPE type.



**C.L.A.M. replacement kit.**

## C.L.A.M. Replacement Parts Kit

This is a general replacement kit for C.L.A.M. parts and is a good backup to have when you're working in the field. It includes one calibration syringe, two rubber battery housing sealing gaskets, one battery holder, three foot length of 1/8 inch calibrating tubing and two Luer lock adapters threaded and one Luer lock quick connect.

**For additional information call C.I.Agent® Storm•Water Solutions.**