



**Caltest**  
ANALYTICAL LABORATORY

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www.CaltestLabs.com

# Client Focused, Data Driven

## Pyrethroids, Fipronil and Other Pesticides

### Exceptional client service, quality data at low levels.

Since 1982, Caltest has led the way in NPDES compliance testing and the analysis of wastewater, surface water, stormwater and sediment using EPA methods optimized for low levels of reporting.

### We make the process easier for you by providing:

- Cutting-edge analytical methodology
- Excellent quality assurance oversight
- A dedicated project manager and a responsive client services team
- Appropriate sampling containers, chain of custody forms, and sampling instructions
- The assurance that your data is backed by our commitment to exceptional quality standards, transparency and thorough documentation

### Additional services:

Container delivery and sample pickup available throughout the SF Bay Area, Sacramento and the Central Valley.



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### Pyrethroids

Pyrethroids are a class of pesticides commonly used for structural, agricultural and consumer pest-control applications. Since the early 2000s, pyrethroids have been found at levels of concern in surface waters. The main sources of these pyrethroids are discharges from municipal stormwater systems and from agricultural lands. Many surface water bodies in California are considered impaired by pyrethroids because these pesticides are found at concentrations that exceed water-quality objectives established to protect aquatic life.

### Environmental Impacts

Even at very low levels, pyrethroids can be toxic to aquatic life. Concentration goals are thus very low, often below current analytical detection limits. There is uncertainty about exactly where to set concentration goals, how to attain them, and what it will cost. The available data do indicate however, that significant reductions are needed.

### Resources:

- Central Valley Regional Water Quality Control Board
- California Stormwater Quality Association (CASQA)
- Surface Water Ambient Monitoring Program

### Fipronil and Its Degradates

Fipronil is the principal active ingredient in a wide variety of pesticide products. It came into common use as a replacement for pyrethroid pesticides. Due to fipronil's toxicity to aquatic life it too has become the subject of regulatory concern. Caltest clients are frequently required to monitor pyrethroids along with fipronil and its degradates; both can be analyzed by the same method, using a single 1-liter sample.

### Monitoring

Concern about the environmental impacts of pyrethroid and fipronil compounds in waterways has led to the establishment of monitoring programs across California. One notable example is the Surface Water Ambient Monitoring Program (SWAMP). Launched in 2000, and working under the direction of the State Water Resources Control Board (SWRCB) and the nine regional boards, this program has tracked pyrethroids and other pollutants in California surface water bodies. An important element of the program is a statewide database that unifies data from local monitoring efforts. Caltest has extensive experience with these programs and can produce program-compatible EDDs.

# Excelling in Low-Level Water Analysis

## How Can Caltest Help?

Partnering with scientists, regulators, permittees and working groups, and using cutting-edge technology to achieve lower reporting limits, Caltest has been a leader in method development for pyrethroid analysis. Caltest has the expertise and analytical capabilities to meet the requirements of regional monitoring programs and discharge permits.

### Central Valley TMDL

In response to the Central Valley Regional Water Quality Control Board's (CVRWQCB) pyrethroid TMDL, Caltest has established a board-specific option to report the targeted freely dissolved pyrethroid compounds at the required low levels. This will ensure a streamlined reporting process for our Central Valley clients.

## Instrumentation

(NCI-GCMS-SIM) – Negative Chemical Ionization Gas Chromatography with Mass Spectrometer Detector operated in the Selected Ion Monitoring mode.

This technology is effective in achieving trace-level determination of surface water and wastewater treatment plant effluent samples down to an RL of 0.5 ng/L (ppt); soils to 0.33 ng/g. This approach meets EPA criteria and conforms to MDL and RL derivation criteria.

To discuss your monitoring needs, request a quote, schedule a pickup, or get more information about pyrethroids, pesticides or other projects, call us at (707) 258-4000 or email us at [info@caltestlabs.com](mailto:info@caltestlabs.com).

## Compounds and Reporting Limits

### Pyrethroids by NCI-SIM:

Analyte	Aqueous (EPA 625.1M)		Sediments (EPA 8270)	
	MDL (ng/L)	RL (ng/L)	MDL (ng/g)	RL (ng/g)
Bifenthrin	0.1	0.5	0.1	0.33
Cyfluthrin	0.2	0.5	0.11	0.33
Lambda-Cyhalothrin	0.2	0.5	0.06	0.33
Cypermethrin	0.2	0.5	0.1	0.33
Esfenvalerate: Fenvalerate	0.2	1	0.13	0.33
Permethrin	2	5	0.11	0.33

*Additional reportable pyrethroid analytes: Allethrin, Deltamethrin, Tralomethrin, Fenpropathrin, Tau-Fluvalinate, Tetramethrin*

### Additional Reportable Compounds by NCI-SIM:

Analyte	Aqueous (EPA 625.1M)		Sediments (EPA 8270)	
	MDL (ng/L)	RL (ng/L)	MDL (ng/g)	RL (ng/g)
Chlorpyrifos	0.5	1	0.12	0.33
Diazinon	0.1	0.5	0.09	0.33
Fipronil	0.5	1	0.1	0.33
Fipronil Desulfinyl	0.5	1	0.1	0.33
Fipronil Sulfide	0.5	1	0.1	0.33
Fipronil Sulfone	0.5	1	0.1	0.33

## Additional Pesticide Analyses

In addition to pyrethroids and fipronil, Caltest provides analyses of other pesticides, including:

- Chlorinated pesticides & PCBs (EPA 608)
- Organophosphorus pesticides (EPA 614)
- Carbamate pesticides (EPA 632)
- Neonicotinoids (EPA 632)
- Resmethrin (EPA 8270)
- Pibronyl butoxide (PBO) (EPA 8270)

## Certifications and Accreditations

(CA-ELAP) State of California Environmental Laboratory accredited for hazardous waste, drinking water and wastewater. (Certification 1664)

(ORELAP) (TNI) National Environmental Laboratory accredited for solid waste and non-potable water testing through the State of Oregon. (Certification 4036)

U.S. Department of Energy audited and approved as part of the Integrated Contractor Purchasing Team (ICPT)

(SBE) Certified Small Business Enterprise (CA and Federal)



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