



Pharmaceuticals, Hormones, and Personal Care Products

Pharmaceuticals and Personal Care Products (PPCPs) are often detected in water sources. Testing for PPCPs offers several advantages:

- Snapshot of occurrence for customers
- Indication of wastewater or reclaimed water influence
- Evaluation of the efficiency of current treatment

Which PPCPs should be tested?

Analyze for PPCPs based on your project objectives:

- Specific Compound – Target specific indicators (such as Carbamazepine, Sucralose or Acesulfame-K) that are often found at high concentrations

in wastewater effluents to evaluate treatment performance or degree of presence of wastewater or reclaimed water.

- Compound Class – Target specific types of indicators (such as Pesticides or Antibiotics) to obtain a broader indication of the presence of specific constituents that can help identify the source of these compounds.
- Broad Spectrum – Conduct an initial comprehensive assessment of more than 90 parameters to evaluate the extent and type of PPCP concentration present in your water (source or treated).

PPCP Sample Experience

Eurofins Eaton Analytical has analyzed in excess of 2,000 samples from across the country for a large list of PPCPs. Samples include finished drinking water, source waters and wastewater effluents. This provides for a robust data set, allowing us to benchmark your results against a broad range of occurrence data.

PPCP Method Experience

Eurofins Eaton Analytical was *(Continued)*

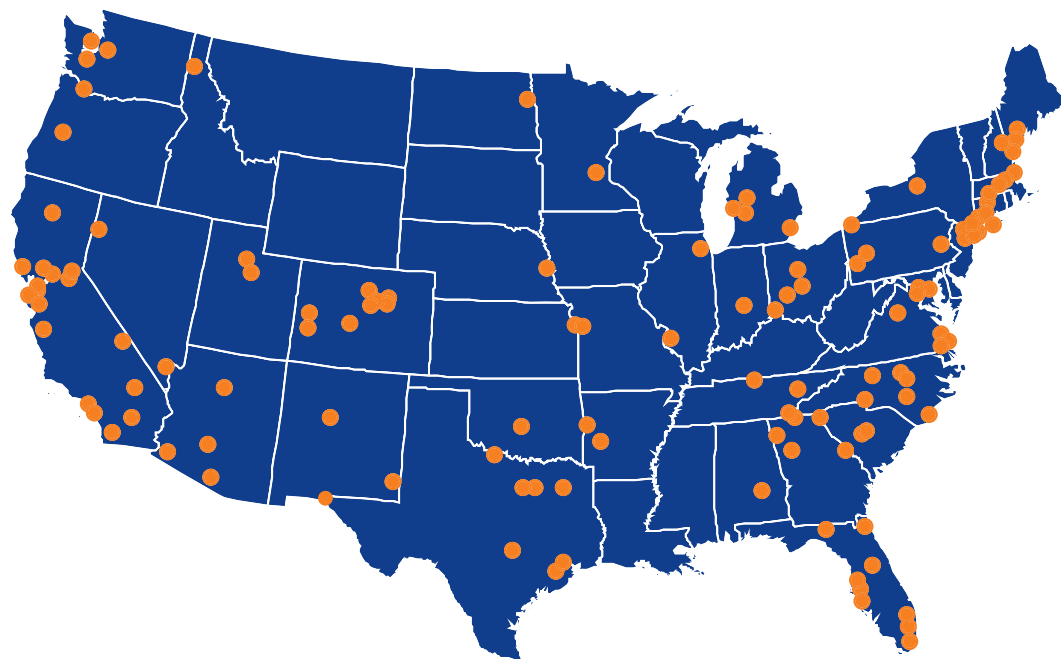
a co-principal investigator on WaterRF Project 4167 “Evaluation of Analytical Methods for EDCs and PPCPs via Interlaboratory Comparison.” This project compared the overall performance for 22 target analytes on over 20 PPCP methods in use around the world for water analysis. We demonstrated that some methods and laboratories had significantly better performance than others and that some compounds should be considered semi-quantitative regardless of method used. Our project team also performed a multi-lab validation of the method that provided the best overall precision and accuracy for a suite of 14 of the 22 analytes.

As part of WaterRF 4167, Eurofins Eaton Analytical tested out multiple different methods in our own lab—our direct online pre-concentration screening method for more than 90 PPCPs, USEPA Method 539 for hormones, and several different offline pre-concentration methods for PPCPs.

We served as the second lab validator for the EPA for Method 539, “Determination of Hormones in Drinking Water.” This is the method that the EPA was using for hormone monitoring under the UCMR3 program. Our experience both validating this method and testing it out in the WaterRF Project 4167 demonstrates our commitment to ensuring the highest possible quality for our PPCP analyses.

PPCP Analytical Experience

Lower reporting limits increase the likelihood of detecting compounds and the likelihood of both random lab and field contamination (i.e., false positives). Eurofins Eaton Analytical spikes each analytical batch at the reporting level to verify sensitivity daily. Most labs only use MDL determinations to estimate reporting levels—leading to false positives or false negatives. We strive to obtain tight QC limits (comparable to drinking water methods) to maximize data quality.



Shown above are representative locations where Eurofins Eaton Analytical has conducted PPCP testing.

Eurofins Eaton Analytical offers analysis of more than 90 herbicides, pharmaceuticals, hormones and personal care products in a single method—ideal for initial occurrence studies. Contact us for specific lists, including the NWRI recommended list. *(Target list and MRLs as of Nov. 2017)*

Compound	MRL (ng/L)	Analytical Mode	Compound Class	Compound	MRL (ng/L)	Analytical Mode	Compound Class
1,7-dimethylxanthine	10	ESI +	Caffeine Degradate	Iohexol (Iohexal)	10	ESI -	X-ray Contrast Agent
2,4-D	5	ESI -	Herbicide	Iopromide	5	ESI -	X-ray Contrast Agent
4-nonylphenol (semi qualitative)	100	ESI -	Surfactant	Isobutylparaben	5	ESI -	Preservative
4-tert-octylphenol	50	ESI -	Surfactant	Isoproturon	100	ESI +	Herbicide
Acesulfame-K	20	ESI -	Sugar Substitute	Ketoprofen	5	ESI +	Anti Inflammatory
Acetaminophen	5	ESI +	Analgesic	Ketorolac	5	ESI +	Anti Inflammatory
Albuterol	5	ESI +	Anti Asthmatic	Lidocaine	5	ESI +	Analgesic
Amoxicillin (semi quantitative)	20	ESI +	Antibiotic	Lincomycin	10	ESI +	Antibiotic
Androstenedione	5	ESI +	Steroid Hormone	Linuron	5	ESI +	Herbicide
Atenolol	5	ESI +	Beta Blocker	Lopressor (Metoprolol)	20	ESI +	Beta Blocker
Atrazine	5	ESI +	Triazine Herbicide	Meclofenamic Acid	5	ESI +	Anti Inflammatory
Bendroflumethiazide	5	ESI -	Triazide	Meprobamate	5	ESI +	Anti Anxiety
Bezafibrate	5	ESI +	Lipid Regulator	Metazachlor	5	ESI +	Herbicide
BPA (Bis Phenol A)	10	ESI -	Plasticizer	Metformin	5	ESI +	Antihyperglycemic drug
Bromacil	5	ESI +	Herbicide	Methylparaben	20	ESI -	Preservative
Butalbital	5	ESI -	Analgesic-NSAID	Metolachlor	5	ESI +	Herbicide
Butylparaben	5	ESI -	Preservative	Naproxen	10	ESI -	Analgesic-NSAID
Caffeine	5	ESI +	Stimulant	Nifedipine (semi quantitative)	20	ESI +	Calcium Blocker
Carbadox	5	ESI +	Antibiotic	Norethisterone	5	ESI +	Steroid Hormone
Carbamazepine	5	ESI +	Anti Seizure	Oxolinic acid	10	ESI +	Antibiotic
Carisoprodol	5	ESI +	Muscle Relaxant	Pentoxifylline	5	ESI +	Blood thinner
Chloramphenicol	10	ESI -	Antibiotic	Phenazone	5	ESI +	Analgesic
Chloridazon	5	ESI +	Enzyme	Primidone	5	ESI +	Anti Convulsant
Chlorotoluron	5	ESI +	Herbicide	Progesterone	5	ESI +	Steroid Hormone
Cimetidine	5	ESI +	H2 Blocker	Propazine	5	ESI +	Triazine Herbicide
Clofibric Acid	5	ESI -	Herbicide and Cholestrol drug	Propylparaben	5	ESI -	Preservative
Cotinine	10	ESI +	Nicotine Degradate	Quinoline	5	ESI +	Phosphate Pesticide
Cyanazine	5	ESI +	Triazine Herbicide	Salicylic Acid	100	ESI +	Antiseptic
DACT (Diaminochlorotriazine)	5	ESI +	Triazine Degradate	Simazine	5	ESI +	Triazine Herbicide
DEA (Deethylatrazine)	5	ESI +	Triazine Degradate	Sucralose	100	ESI -	Sugar Substitute
DEET (N,N-Diethyl-meta-toluamide)	10	ESI +	Mosquito Repellent	Sulfachloropyridazine	5	ESI +	Sulfa Antibiotic
Dehydronifedipine	5	ESI +	Blood Pressure Drug Metabolite	Sulfadiazine	5	ESI +	Sulfa Antibiotic
DIA (Deisopropylatrazine)	5	ESI +	Triazine Degradate	Sulfadimethoxine	5	ESI +	Sulfa Antibiotic
Diazepam	5	ESI +	Valium Anti Anxiety	Sulfamerazine	5	ESI +	Sulfa Antibiotic
Diclofenac	5	ESI -	Anti Inflammatory	Sulfamethazine	5	ESI +	Sulfa Antibiotic
Dilantin	20	ESI +	Anti Seizure	Sulfamethizole	5	ESI +	Sulfa Antibiotic
Diltiazem	5	ESI +	Calcium Blocker	Sulfamethoxazole	5	ESI +	Sulfa Antibiotic
Diuron	5	ESI +	Herbicide	Sulfathiazole	5	ESI +	Sulfa Antibiotic
E2 (17 Beta-Estradiol)	5	ESI -	Estrogenic Hormone	TCEP(Tris(2-chloroethyl) phosphate)	10	ESI +	Flame Retardant
EE2 (17 Alpha-ethynylestradiol)	5	ESI -	Contraceptive Hormone	TCP	100	ESI +	Flame Retardant
Erythromycin	10	ESI +	Antibiotic	TDCPP	100	ESI +	Flame Retardant
E3 (Estriol)	5	ESI -	Hormone	Testosterone	5	ESI +	Steroid Hormone
Estrone	5	ESI -	Estrogenic Hormone	Theobromine	10	ESI +	Caffeine Degradate
Ethylparaben	20	ESI -	Preservative	Theophylline (semi quantitative)	20	ESI +	Anti Asthmatic
Flumequine	10	ESI +	Antibiotic	Triclosan	10	ESI -	Antibacterial
Fluoxetine	10	ESI +	Antidepressant	Triclocarban	5	ESI -	Antibacterial
Gemfibrozil	5	ESI -	Lipid Regulator	Trimethoprim	5	ESI +	Antibiotic
Ibuprofen	10	ESI -	Analgesic-NSAID	Warfarin	5	ESI -	Anticoagulant



Eaton Analytical

Monrovia Laboratory
750 Royal Oaks Drive, #100
Monrovia, CA 91016
626-386-1100

South Bend Laboratory
110 South Hill Street
South Bend, IN 46617
574-233-4777

www.EurofinsUS.com/Eaton