

## **In-house QA/QC**

Utmost care is taken to provide our clients with analytical data of the highest quality. Exova Accutest maintains several layers of data approval where, at any point in the analytical process, the reviewer has the authority to reject a data set based upon rigid QA/QC protocol. In addition, the following steps are taken during routine analyses, though not limited to:

- Reagent blanks are analyzed within each sample batch;
- Internal standards are used to verify instrument calibration or highlight matrix difficulties;
- All reagents are prepared from ACS or better grade chemicals;
- Laboratory replicate samples and Standard Reference Materials (SRM) are analyzed with each batch;
- All standard, blank, and spike values are catalogued for reference; and
- Travel blanks, field blanks, equipment blanks, and travel spikes are provided on request

## **Instrumentation**

Exova Accutest operates and maintains analytical instruments in a high degree of repair and routine calibration for the tests performed. There are on-hand many gas chromatographs with various detection capabilities (Mass Spec, FID, ECD etc.), ICP-AES, ICP-MS, Flame AA instruments, HPLC, Ion chromatographs and autoanalyzers.

There are multiple units available with ample back-up capability to handle significant workloads.

## **AQUATOX TESTING & CONSULTING INC.**

## **AQUATOX QA/QC PRACTICES RELATED TO TOXICITY TESTING**

It is the policy of AquaTox to provide the highest standards of testing service to its clients by conducting tests in accordance with the required methods and client requirements. AquaTox is committed to good professional practice, quality service and compliance with CAN-P-4D.

AquaTox requires that all personnel concerned with testing activities within the laboratory familiarize themselves with the quality documentation and implement the policy and procedures in their work.

The overall QA objective is to develop and implement procedures for chain-of-custody, laboratory analysis and reporting that will provide accurate data. The purpose of the QA/QC program is to define goals for the level of QA effort; accuracy, precision, and sensitivity of analyses; and completeness, representativeness, and comparability of measurement data from the toxicity testing laboratory.

Quality Assurance (QA) and Quality Control (QC) practices for effluent toxicity tests include aspects of the test that affect the accuracy and precision of the data, including (1) sampling handling and storage, (2) laboratory conditions, (3) test organisms, (4) reference toxicants, and (5) record keeping and data evaluation. Below is a summary of our quality objectives and standard QA/QC practices related to the conduct of our ecotoxicity tests.

### ***Quality Objectives***

- To ensure a Quality System that is documented and incorporates adequate review and internal quality control.
- To ensure personnel are adequately supervised and are proficient to carry out assigned activities.
- To ensure test methods and related procedures are validated and incorporate adequate quality control.
- To ensure all equipment, supplies and services are functioning properly and/or meet required specifications.
- To ensure that facilities are adequate to carry out the testing activity.
- To ensure sample management procedures that incorporate adequate procedures for the security, receipt, identification, checking, routing, storage and disposal of all samples.
- To ensure data management procedures that incorporate adequate procedures for the security, recording, calculation, validation, authorization, transmittal, storage and disposal of all test data and related records.
- To ensure workload management procedures that incorporate acceptable turnaround time and verification of resource availability prior to the acceptance of additional testing.

### ***QA/QC Data Related to Individual Toxicity Tests***

Test Validity Criteria:

- A test will be considered valid if the test validity criteria stated in the test method are met. Otherwise the test should be repeated.

Reference Toxicant Testing:

- A reference toxicant test will be conducted on the same batch of organisms used for conducting the definitive test.
- Each reference toxicant test will be conducted following the same procedures and conditions used for the test substance(s) although may involve a reduced duration of exposure.

Use of Warning Chart:

- A warning chart will be made available when testing involves test organisms are cultured or tested by AquaTox on a regular basis.

A test result is suspect if it falls outside the warning limits. In this event, a thorough check of the testing conditions is conducted at this time.