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## overview

Hydrosphere Research is a full-service bioassay laboratory that offers a wide array of services to its private and public clients. This document will provide an overview of our company, including capabilities, certifications, personnel, and instrumentation.

The best way to evaluate and learn about our laboratory is to visit and see the operations firsthand. The company invites site visits anytime. Please call toll-free at (866) 375-9004 to arrange a visit.

## certifications

Hydrosphere Research is certified by the State of Florida Department of Health as meeting all the requirements for the National Environmental Laboratory Accreditation Certification (NELAC) standards. Hydrosphere Research was the first commercial bioassay laboratory in the state of Florida to apply for and receive the new NELAC certification.

## toxicity testing

Our clients routinely call upon us to design new and innovative toxicity studies. We routinely conduct tests to satisfy NPDES permits and characterize toxicity problems. Hydrosphere Research is a state and nationally recognized aquatic toxicity testing laboratory, widely known for projects completed in the following areas:

- Chronic freshwater & saltwater tests
- Acute freshwater & saltwater tests
- Freshwater and marine sediment bioassays
- Ion imbalance studies
- Whole compound toxicity studies
- Sediment bioaccumulation studies
- Sediment Toxicity Tests
- Nutrient potential studies
- Nutrient limiting studies
- Algal growth studies
- Toxicity identification evaluation/reduction studies
- On-site flow through studies
- Product Testing
- Laboratory flow through studies
- Oil Dispersant Studies
- Soil Toxicity Tests

## product testing

Hydrosphere has helped manufactures around the globe in determining the impacts that their products can potentially have on the environment. Hydrosphere has gone so far as to help companies formulate their products to minimize their toxic characteristics.

## special studies

Hydrosphere has worked on a variety of special studies that have combined the biological, chemical, and toxicological endpoints. Our highly experienced staff can custom design a study approach that will meet your needs.

## plan of study

Hydrosphere Research works with our clients, their consultants, and regulatory officials to develop concise Plan of Studies to meet regulatory requirements. We strive to make these plans simple yet thorough.

## toxicity identification evaluations

Hydrosphere Research has conducted Phase I, II, & III Toxicity Identification Evaluations (TIE) to help clients identify and characterize their toxicity issues. These studies have involved both acute and chronic TIE's with both freshwater and marine species. Often a full phase I TIE is not required. Hydrosphere Research can consult with the client to determine a hierarchy of potentially successful treatments based on the client's experience with their sample and plant operations. Hydrosphere Research's experience with the client's sample can prove indispensable when designing a custom TIE.

## endocrine disruptor studies

Hydrosphere Research is recognized as one of the first commercial labs in the US to be involved with endocrine disruptor studies using aquatic vertebrates and yeast activity-based test methods. We have developed and implemented a suite of tools for assessing the potential reproductive effects of effluents and pure chemicals to aquatic vertebrates. Emphasis is on endocrine pathways controlled by estrogens and androgens.

Hydrosphere Research continues to work with researchers at the University of Florida and elsewhere to develop new assays for the detection of endocrine disruptors. Hydrosphere Research has completed endocrine disruptor projects in the following areas:

- Rapid screening for endocrine disruptors
- Fish pathology and histology
- Laboratory flow through studies on whole compounds
- Life cycle studies
- Field evaluations of endocrine disruptors.

## facilities

Hydrosphere Research's laboratory and office facilities are in the [Progress Corporate Park](#) at 11842 Research Circle, Alachua, Florida, only minutes away from the University of Florida. Our proximity allows easy access to one of the nation's leading research centers and is a source of highly skilled assistance for both routine laboratory tasks and also for very large or unusual projects.

We have divided our test facilities into four separately lighted and climate-controlled sections that will accommodate various test conditions or requirements. We maintain separate laboratories for all our culture work and chemistry work.

Hydrosphere Research has a large cold room storage facility to handle all client samples.

## aquaculture & mariculture

Hydrosphere Research cultures all the f organisms required for routine toxicity testing. Some of these organisms include: the freshwater Cladocerans *Ceriodaphnia dubia*, *Daphnia magna* and *Daphnia pulex*; the freshwater alga *Selenastrum capricornutum*; the saltwater alga *Dunaliella tertiolecta*; the fresh water amphipod *Hyalella azteca*; the salt water amphipod *Leptocheirus plumulosus*; the salt water shrimp *Mysidopsis bahia*; the salt water minnow *Menidia beryllina*; the fresh water banner-fin shiner *Cyprinella leedsii*; and the freshwater fathead minnow *Pimephales promelas*.

Hydrosphere supplies many laboratories across the country with their test organisms.

Hydrosphere Research also has experience in various aquaculture & mariculture research projects including the development of a land based recirculated hatchery for the hard-shell clam *Mercenaria mercenaria*.

## quality assurance plan

Beginning October of 2000, Hydrosphere Research began operating under its NELAC approved Quality Manual. The Hydrosphere Research Quality Manual provides a unified approach to supplying data that are scientifically sound, legally defensible and of known and acceptable quality. The Quality Manual presents objectives, QA policies, organization, resumes, functional activities and specific QA activities for the testing of environmental samples. An extensive network of written Standard Operating Procedures (SOPs) guides all activities.

Among other issues, the Quality Manual covers, in detail, our laboratories policies, management, quality system, procedures, methods, personnel, and facilities. All Hydrosphere Research personnel are required to be familiar with the Quality Manual and SOPs and are committed to following them. The Quality Manual and laboratory SOPs are always available for inspection.

## sample custody procedures

Samples are logged in on arrival. All sample kits must arrive with the chain of custody seal intact. Upon arrival, the samples are assigned a job number and start date and are cross-checked with the chain of custody to make sure all the samples are accounted for. They are then inspected for proper containment and stored in our cold room. The samples are stored for a minimum of 30 days after the report goes out. After 30 days the samples are properly disposed.

## data management

Hydrosphere Research uses state-of-the-art computer network to integrate many of our laboratory operations from sample receiving to report generation. Utilization of computers greatly reduces the chance for transcription and calculation errors by eliminating manual processes.

To ensure accurate and complete data reporting, data are subjected to multiple tiers of review prior to reporting. Reports are available in an electronic format. A daily status report listing all in-house samples, project requirements and required delivery dates, is provided to all supervisors. This facilitates human and instrument resources planning to ensure deadlines are met.

Separate files are maintained for each project. All original worksheets, purchase orders, test requests and/or chain of custody documentation are permanently kept in the client/project file. Additional copies of any test results can be provided upon request.

## data reporting and presentation

Hydrosphere Research uses its state-of-the-art computer systems to provide clients with reports that are ready for submission to regulatory agencies. Our staff is always available to present study findings to your staff or to regulatory agencies.

## **equipment systems & maintenance**

Hydrosphere Research has more than one of any type of equipment. If one instrument is found to be unserviceable, we have another to take its place. This duplication assures prompt turnaround time.

All testing equipment and instruments at Hydrosphere Research are checked for signs of damage, deterioration, or calibration. It is the job of each technician to check the instrument before each use. If the equipment is found to be damaged etc., it is tagged out of service and reported to the laboratory manager. It is the responsibility of the laboratory manager to assure the prompt repair of the equipment. It is then recalibrated before being put back in service. All equipment manuals, schematics and calibration reports are the responsibility of the laboratory manger.

## **organization and management**

Hydrosphere Research is organized along clear lines of authority to provide clients with service that is efficient and reliable.

Hydrosphere Research has staff on site every day of the year for test monitoring, test initiation, and organisms culturing.

## **insurance**

Hydrosphere Research maintains complete insurance to protect itself and its clients. Proof of insurance is available upon request. Clients are routinely listed as additionally insured to protect their interests.