



HYDROSPHERE
research



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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.

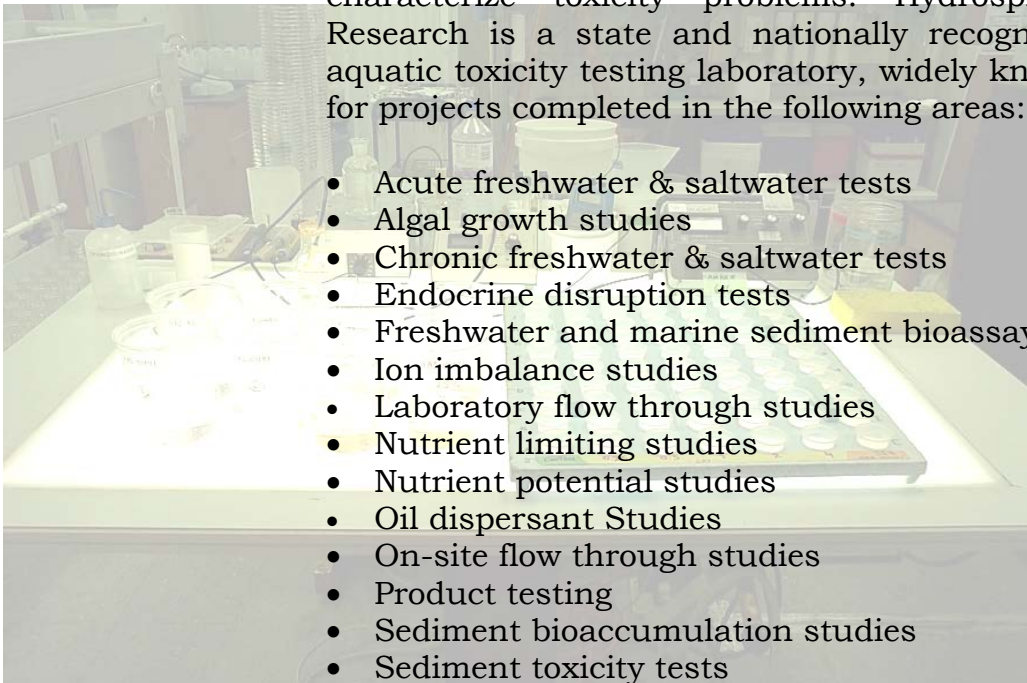
The best way to evaluate and learn about our laboratory is to visit and see the operations first hand. The company invites site visits anytime. Please call toll-free at (866) 375-9004 to arrange a visit.

certifications

Hydrosphere Research is certified by the State of Florida Department of Health as meeting all of 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. Hydrosphere Research is certified by the State of Florida and many other regulatory agencies as either a Minority or Women Owned Business Enterprise. Copies of these certifications are located in Appendix A.

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:



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

special studies

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

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 times 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.

client references

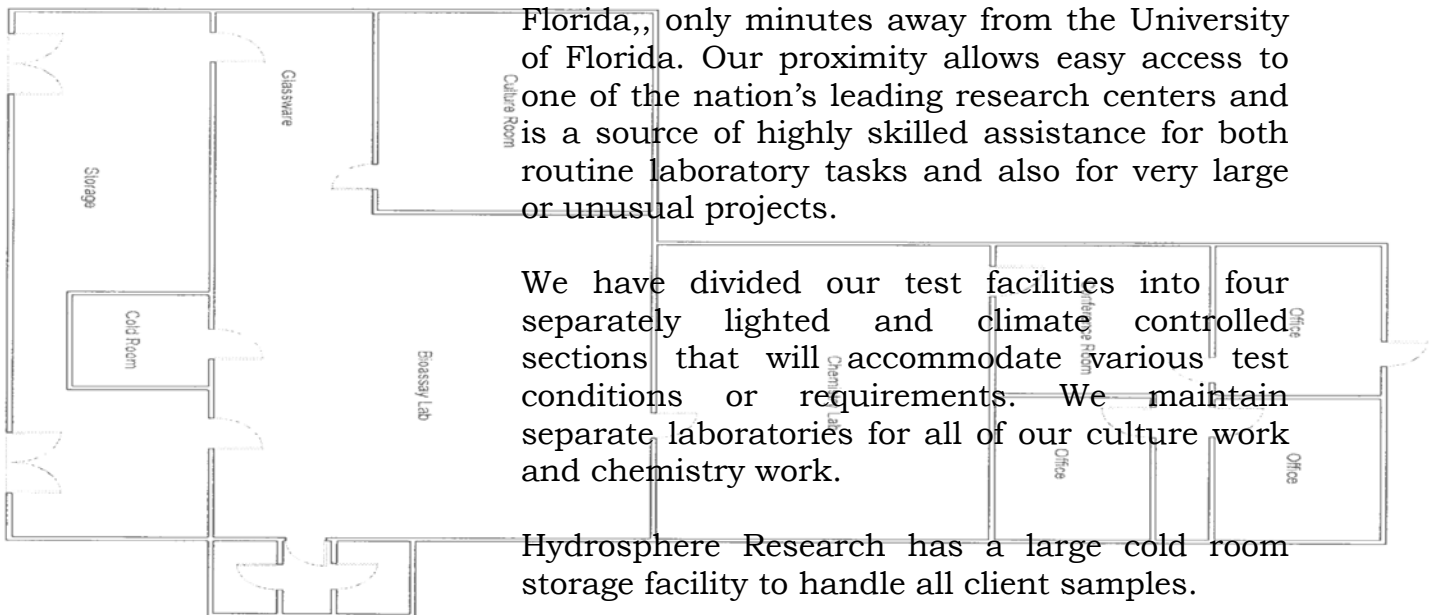
Hydrosphere Research has had some of the same clients since the labs inception at CH2M Hill over 20 years ago. We pride ourselves on providing unmatched customer service. Appendix B contains a partial list of references. Please contact the Laboratory Director to see a list of references specific to your area or industry.

facilities

Hydrosphere Research's laboratory and office facilities are located 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.

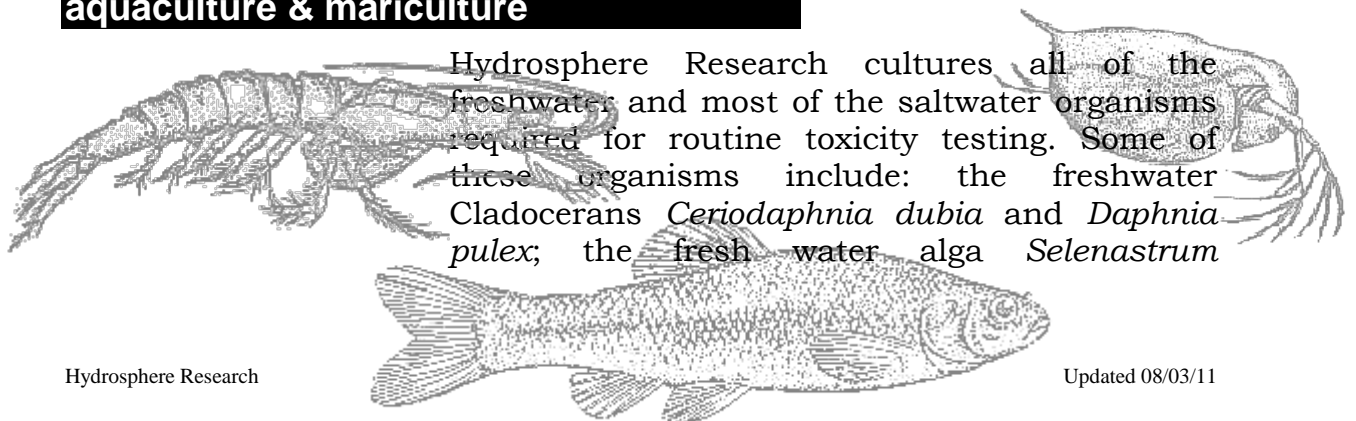
We have divided our test facilities into four separately lighted and climate controlled sections that will accommodate various test conditions or requirements. We maintain separate laboratories for all of our culture work and chemistry work.

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



aquaculture & mariculture

Hydrosphere Research cultures all of the freshwater and most of the saltwater organisms required for routine toxicity testing. Some of these organisms include: the freshwater Cladocerans *Ceriodaphnia dubia* and *Daphnia pulex*; the fresh water alga *Selenastrum*



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.

Test	Species	Concentrations	Fail at	No of Samples	Sample Type	Notes
7CSR	CD,FM	12.5, 22, 50, 72, 97		3	Comp	
96ASRS	CL	100		1	Gr	
96ASRS	FM	97		1	Gr	
48ASNS	CD	97, 100		1	Gr	

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.

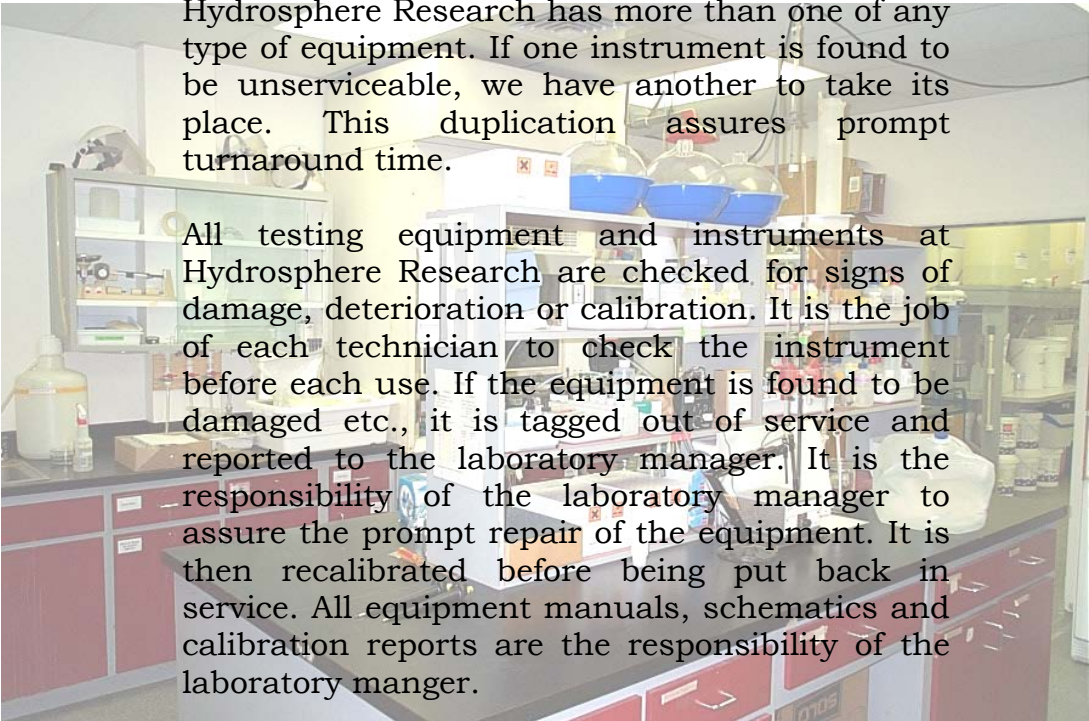
To ensure accurate and complete data reporting, data are subjected to multiple tiers of review prior to reporting. Reports are available in a number of hard copy or electronic formats A daily status report listing all in-house samples, project requirements and required delivery dates, is provided to 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.

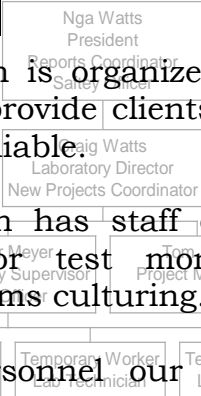
All testing equipment and instruments at Hydrosphere Research are checked for signs of damage, deterioration or calibration. It is the job of each technician to check the instrument before each use. If the equipment is found to be damaged etc., it is tagged out of service and reported to the laboratory 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 manager.

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.

Resumes of Key personnel are presented in Appendix C.



insurance

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

appendix A - certifications

appendix B - references

Hydrosphere Research References

- Anhueser Busch
- Black & Veatch
- Buckeye Florida, L.P.
- CH2M Hill
- City Of Boca Raton
- City Of Green Cove Springs
- City of Macclenny
- City of St. Augustine
- City Of Starke
- CF Industries
- Florida Power & Light
- Florida Power Corporation
- Georgia-Pacific
- Golder & Associates
- Tennessee Valley Authority
- Tetra Tech NUS
- The Minute Maid Company
- Town of Hastings
- Town of Orange Park

appendix C – resumes of key personnel