



Aquatic Consulting Services

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AQUATIC CONSULTING SERVICES

Expert Testimony

Consultation, investigation, research and expert testimony on swimming pool or water feature construction defects cases; and all water-related personal injury cases, including: downing and near drowning, spinal injury, slip-and-fall, boating and PWC cases, waterslide and diving injuries, occurring at commercial and residential pools, waterparks or open water facilities. Specializing in aquatic risk management, swimming pool design, maintenance, management and operation; water quality, boating safety, supervision issues, barrier effectiveness, staff qualification and training, code compliance, signage and warnings. Please call if you are representing either plaintiff or defendant positions, and are in need of an aquatic consultant or expert to:

- Review discovery documents
- Investigate or recreate accident situations
- Give deposition or court testimony
- Interview witnesses
- Instruct attorneys on technical matters related to aquatics
- Search applicable codes, guidelines, requirements or specifications

Pool Design & Renovation

Deciding to renovate an older pool facility, or to build a new aquatic complex -- whether a traditional pool, world class natatorium, community leisure center, or waterpark; are major decisions which will require inordinate amounts of staff time and enormous capital commitments. Major errors in design which are overlooked in the early stages of the design and planning process can be disastrous and cause astronomical costs overruns. Even minor design errors will influence the operation of your facility and safety of your patrons for years to come. Doesn't it make sense to include an aquatic consultant as a member of your project committee, along with your architect, engineers, and contractors? Aquatic Consulting Services can assist you in building the pool of your dreams, by:

- Conducting an in depth study of current and future program needs
- Reviewing project feasibility studies
- Developing conceptual plans of the facility which will meet your programming needs in collaboration with your architect
- Providing project design data sheets to help you prioritize your goals and design needs
- Educating the design team about available options for: decking, barriers, pumps, motors and hydraulic requirements, filter systems, pool layout and dimensions, alternative sanitizers and oxidizers, chemicals, signage and warnings, handicapped accessibility, pool alarm systems, energy efficient pool lighting, hazardous materials regulations, pool surface options, deck equipment and hardware, diving boards, platforms and starting blocks, water features, maintenance equipment, chemical metering pumps, automatic chemical controllers, heaters, dehumidification equipment, pool blankets, movable floors and bulkheads, space requirements, saunas, steam rooms and spas, play elements, and locker room design
- Comparing the costs and effectiveness of various products and systems
- Writing the "Design Program"
- Developing a schedule for project completion
- Assisting in developing strategies to obtain financial support for the project
- Reviewing and critiquing of construction diagrams and specifications for:
 - Common errors in design
 - State, federal and local bathing code compliance
 - Appropriateness to stated goals and primary facility usage
 - Common and acceptable practices of the aquatic industry
 - Compliance with manufacturers recommendations, design guidelines of aquatic certifying agencies and competitive governing bodies, fire codes, hazardous materials management regulations, environmental hazards, and minimum safety criteria
- Assisting in getting your construction documents through the plan check process
- Conducting pre-opening facility inspections and identifying deficiencies or items which are incomplete, unacceptable, not in compliance with specifications, or in need of repair.

Residential Swimming Pool & Spa Inspection

Schedule a review and inspection of your swimming pool and spa before selling or purchasing a new home in order to identify: potential hazards, design defects, code noncompliance, and equipment in need of replacement or repair.

- A thorough inspection of the pools will be conducted. The pools themselves, decks, fences and other barrier devices, filter rooms, chemical storage areas, and all related equipment will be inspected.
- Measurements will be made, photographs of problem areas will be taken, and circulation dye tests, water and air quality analysis will be performed.
- The acceptability of the filtration and hydraulic systems in achieving desired results in water clarity, uniform distribution, water quality, minimum flow rates and turnover time will be determined.
- Chemical injection systems, automated controllers, chemical storage practices, handling, and dispensing methods will be evaluated.
- A 100 plus item checklist on the condition of the pools will be generated. Recommendations on surface repairs, modifications and system up-grading, and replacement of equipment will be made. Recommendations will be made to eliminate safety hazards and reduce the risk of pool ownership.
- If desired, a meeting with the homeowner or real estate agent can be scheduled to discuss the recommendations.

Aquatic Site Inspection - Commercial Pool & Waterpark Facilities

The practice of assessing risks inherent in a program or facility, and attempting to eliminate or minimize those risks through implementation of change helps to promote safety awareness, minimize the frequency and severity of participant injuries, and lessen the probability of lawsuits as a result of negligence. Regular auditing of your pools, spas, water features and play elements can help you to better meet the needs of your patrons by operating a safer, cleaner, revenue producing, and more efficient aquatic facility. We'll help you determine whether your facility meets the common and acceptable practices of the aquatic industry. We'll review and inspect aquatic facilities, equipment, programs, supervisory practices, operational policies, and maintenance procedures, to identify:

- Water quality problems
- Energy waste
- Code violations
- Unsafe practices
- Design defects
- Equipment or products in need of maintenance or replacement
- Environmental hazards
- System failure

In addition:

- A thorough inspection of the aquatic facility will be conducted. The pools, decks, filter rooms, chemical rooms, locker rooms, storage areas, auxiliary areas and all related equipment will be inspected. Measurements will be made, photographs of problem areas will be taken, and water and air quality analysis will be performed.
- The acceptability of the filtration and hydraulic systems in achieving desired results in water clarity, water quality, minimum flow rates and turnover time will be determined. Compliance with design specifications will be evaluated.

- Chemical injection systems, automated controllers, chemical storage practices, handling, transportation, and dispensing methods will be evaluated.
- The effectiveness of current training programs for all levels of aquatic staff will be reviewed.
- A report on the condition of the facility will be generated. Recommendations on modifications, system up-grading and replacement of equipment based on current technology and existing codes will be made. Modifications which improve the safety and operational effectiveness of the filtration and hydraulic systems, and the pool's chemical adjustment systems will be recommended. Recommendations will be made to reduce risk and eliminate safety hazards.
- Code violations will be identified. The following codes will be reviewed for compliance:
 - Applicable State Health & Safety Codes
 - OSHA 29 CFR 1910.1200: Hazard Communication Standard
 - Uniform Fire Code, Article 80: Hazardous Materials
 - U.S. EPA SARA Title III: The Emergency Planning and Community Right-to-Know Act of 1986
 - U.S. EPA - FIFRA Pesticide Worker Safety Regulations
 - OSHA 29 CFR 1910.1030: Occupational Exposure to Bloodborne Pathogens
 - OSHA 29 CFR 1910.146: Confined Spaces Regulation
- The established written and practiced emergency preparedness plan for patron injury, chemical incidents or system failure will be reviewed.

Lifeguard Audits

Be confident that your trained, skilled, and certified lifeguards are really qualified to ensure the public's safety and provide care in emergencies. Increase staff alertness and competence through use of auditing procedures. Aquatic Consulting Services will:

- Evaluate surveillance techniques and supervisory practices
- Conduct emergency drills
- Discern whether lifeguards are readily identifiable and appropriately dressed
- Determine if guards are properly trained and practiced in the most current uses of rescue equipment
- Review your safety system design for efficiency and effectiveness

Staff Screening & Selection

How do you hire qualified aquatic staff when you don't know the questions to ask? Let us help you recruit the most suitable candidate for the job. We can:

- Write interview questions and answers
- Compose job descriptions
- Develop and administer qualification tests
- Conduct interviews
- Help you evaluate candidates and select finalists for the position
- Provide training for new staff

Water Analysis

Not sure of what's in your water? Bathers complaining of eye irritation? Let us perform a complete series of tests on your pool or spa water, and provide you with the results. Perform the tests along with us if you'd like, and determine the accuracy of your testing equipment and procedures. We use only quality testing instruments and fresh chemical reagents. The following tests are available:

- Water quality analysis for:
 - Free available chlorine
 - Combined available chlorine
 - Total available chlorine
 - Total bromine
 - Oxidation reduction potential
 - pH
 - Acid demand
 - Base demand
 - Total alkalinity
 - Calcium hardness
 - Total hardness
 - Cyanuric acid
 - Total dissolved solids
 - Iron
 - Copper
 - Nitrates and nitrites
 - Phosphates
 - Saturation index
- Bacteriological analysis for the presence of pathogenic organisms
 - Pseudomonas aeruginosa
 - Coliform bacteria
- Air analysis for the presence of contaminants, including:
 - Chlorine
 - Ozone
 - Carbon dioxide
- Measurement of air and water temperature and relative humidity
- Dye tests and ribbon tests to assure proper water circulation
- Smoke tests to identify air circulation patterns
- Test for illumination levels in the natatorium
- Common water problem identification and treatment
- Evaporation test to determine if the pool is leaking or water is being lost through other means.

Training & Certification Programs

Aquatic Consulting Services can arrange and conduct NSPF Certified Pool-Spa Operator certification courses, workshops, seminars, in-service staff training, short informational programs, competitions, full length courses, or other services as needed. If you'd prefer, we'll help you develop your own staff training programs or courses. The following courses are available:

- Pool Operator Certification
NSPF (Certified Pool - Spa Operator)
- Pre-Season or In-Service Training
For pool managers, lifeguards, auxiliary staff and maintenance personnel
- Safety
Spinal injury management
Boating safety
Basic rescue skills
Open water - wave sports
Backyard pool safety
- Water Fitness
Swimming fitness
Water exercise
Water walking
Drills, & fitness activities for lifeguards, triathletes, and other advanced swimmers
- Underwater Education
Skin diving
Underwater search and recovery
Emergency rescue of skin and SCUBA divers
- Swim Instruction
Adult stroke improvement
Timid adult beginners
- Sailing
Keel boat sailing instruction
Rules of the Road
Coastal Piloting & Navigation
Crusing catamaran sailing instruction

Document Development

Records and reports need to be kept in an aquatic environment to provide data for making decisions regarding equipment, personnel, and procedures, to provide data used to determine costs of operation, patron satisfaction, causes and prevention of injuries, and as a basis for budget recommendations and justification for future expenditures. Guidelines and manuals are needed to ensure the proper operation of the facility. Information must be posted and some data collected to comply with state and local ordinances to ensure the safety and health of the public. We can provide many of the most commonly used or required forms and documents, or can develop custom materials for you, including:

- Report forms and checklists:
 - Accident
 - Incident
 - Pool logs
 - Daily opening maintenance
 - Daily closing maintenance
 - Preventative maintenance
 - Seasonal opening
 - Winterization
 - Waivers
 - Chemical levels
- Rules for facility use and safety
- Lifeguard or staff manuals
- Operating manuals and procedures
- Chemical safety procedures
- Evacuation procedures
- Safety literature and posters
- Emergency plans
- Publications, newsletters, advertising, or public service announcements

Equipment Specification & Testing

Need to replace worn out equipment; purchase expensive systems for your pool; or determine the cost effectiveness of using one product over another? Does the installation of an experimental system or alternative technology require monitoring by an independent consultant in order for you to obtain Health Department approval for its use? Let us help you with:

- Needs assessments
- Writing equipment specifications
- Bid proposals
- Equipment comparisons and recommendations
- Data collection to determine product cost or effectiveness
- Product testing

Programming

Most aquatic organizations need to increase revenues and participation levels, while decreasing their costs of operation. Let us help you:

- Generate profits through implementation of innovative programming ideas
- Schedule for maximum use and income
- Determine priorities
- Evaluate current program offerings
- Assess your needs by conducting demographic studies and patron surveys
- Decrease overhead costs through use of contractual arrangements
- Develop staff incentive programs to increase class size
- Review administrative controls such as record keeping and refund policies