

Water Recreation and School Programs

401 Fifth Avenue, Suite 1100
Seattle, WA 98104-1818

206-296-4632 Fax 206-296-0189

TTY Relay: 711

www.kingcounty.gov/health

Plan Guide for Water Recreation Facilities – Spray Pool 2010

I. General

- A. Submit at least two sets of plans with the attached *Pool Plan Review Application* and applicable fee to:

Water Recreation Program

401 – 5th Avenue, Suite 1100

Seattle, WA 98104

206.263.8451

- B. Plans must be approved prior to construction.
- C. Plans must be submitted by the design engineer or architect with their cover letter and must be stamped with their seal and signed. Plans must be drawn to scale in sufficient detail to illustrate construction.
- D. Spray pool design plans must include:
1. One vicinity sketch noting spray pool in relation to the surrounding area and facilities.
Note the spray pool shall be located to minimize pollution by dust, smoke, soot, and other undesirable substances. Additionally, the spray pool shall be sited to eliminate pollution from surrounding surface drainage
 2. Detailed view of the equipment room and equipment within it noting sufficient room is provided to access equipment for proper operation and maintenance.
 3. Indicate the spray pool structure and equipment materials that are nontoxic, durable, inert, impervious to water and easily cleanable.
 4. Provide the specifications of required equipment components including filter, disinfecting equipment, etc.
Provide piping schematic showing piping, pipe size, main drains, and all other appurtenances connected to the spray pool feature piping system. Show a main drain with openings which do not allow a sphere over ½ inch in diameter to pass. Details of walking surfaces noting slope, direction, and location of drain(s).
- E. A Pool Data Form must be filled out and submitted with the plans.
- F. Before opening for business, the following steps must be completed:
1. The construction report and pool data form must be completed and signed, and stamped by the spray pool design architect or engineer. These forms indicate that the spray pool has been constructed according to WAC 246-260, and the approved design.
 2. Occupancy and all other permits must be signed off before the opening inspection.
 3. An operating permit from Public Health – Seattle & King County must be applied for and obtained.
 4. A pre-opening inspection by Public Health – Seattle & King County Staff must be arranged and completed.

II. Complete the Spray Pool Plan Review Application Form-Available online at <http://www.kingcounty.gov/healthservices/health/ehs/pools.aspx>.

III. Spray Pool Information - All the following applicable information outlined below must be included on plans and/or specifications. Omissions may result in the rejection of the plans and delays in plan review. This is a guideline to the basic requirements of a spray pool facility. Actual requirements are details in the Water Recreation Facility Regulations, Chapter 246-260 WAC Specific Design Characteristics. Specific spray pool design characteristics:

Spray pool Shape:

- A. Spray pool surface construction material: Painted Concrete ___ Plaster ___ Fiberglass ___ Tile ___
Painted Metal ___ Other - please specify _____ Spray pool color is _____.

Spray Pool Walking Surfaces

- B. Spray pool walking surfaces construction material: _____
C. _____ Easily cleanable impervious finish _____ Nonslip finish _____ Not presenting a tripping hazard
D. Spray pool walking surfaces slope rate _____ /ft for drainage (Min ¼ in./ft, Max ½ in./ft.).
E. _____ Equipped with sufficient drains to prevent standing water.
F. _____ Walking surface extending four feet or more in width extending around 50% or more of the spray pool.
G. _____ If any resilient artificial surfaces are used, they meet department-established guidelines.

Pool Structure

- H. _____ Spray pool surfaces with non slop finish and impervious to water.
I. _____ Spray pool floor slope does not exceed one foot in twelve feet.
J. _____ Name of the approved potable water supply providing water for the spray feature.
K. _____ Air gap of two pipe diameters or approved backflow prevention devices between the make-up water source and the spray pool water or waste water.
L. _____ Spray pool water does not recirculate, but drains to an approved waste after use in spray feature or
M. _____ Spray water is treated by filtration, disinfection, and recirculated through a separate spray pool treatment system which is used in conjunction with an over 30,000 gallon swimming pool, and which discharges into the swimming pool water, with treated swimming pool water entering the spray facility.
N. _____ The design and construction of treatment equipment and associated facilities conform to the swimming pool design requirements (when used in conjunction with an over 30,000 gallon swimming pool facility.) Note: If a spray facility is proposed which is designed to recirculate the water for the spray facility, but is not in conjunction with a 30,000 gallon swimming pool, a variance request will have to be submitted to the Health Department and it would be evaluated on an individual basis. Such a variance would consider the total gallonage of the spray facility being recirculated, the amount of use the facility has, and what turnover time is recommended in the design.
O. _____ Waste water discharge to sewer or other. Specify: _____

Inlets and Outlets

- P. _____ Spray nozzles (within close proximity to bathers) designed with maximum flow less than 15 feet per second at the nozzle. Nozzle spray velocity _____ feet/sec.
Q. _____ Drain located at the low point of the pool and with sufficient capacity and design to prohibit water accumulating in the pool.
R. Outlet drain: ___ Openings in the drain, which do not allow a sphere over one-half inch in diameter to pass.
___ Grates designed to withstand forces of users.
___ Grates removable only with specific tools
S. Grates attached to recirculating pumps:
___ Grates on drains with a maximum flow of 1.5 feet/sec or net area of outlet 4 times or more the discharge pipe area.
___ Total open area of grates sized to prevent a suction hazard dangerous to the user.

Signs

- T. ___ Owners shall provide signs at spray feature about general requirements for facility use. These will include prohibition of running or horseplay, use by individuals with communicable disease, under the influence of alcohol or drugs or having food or drink in the spray pool feature.

Operation Plan

- U. ___ Owner has operation plan addressing the following:
1. ___ Physical pool facility component:
___ Structural facilities which the users come in contact with are free from undue wear or fatigue,
___ No water ponding on walking surfaces or eliminating adverse effects of water ponding
___ Ensure preventative maintenance on equipment essential for protection of public health, safety and water quality.

2. ___ Personnel:
 - ___ Owner is providing personnel to oversee spray pool facility ensuring proper operation.
 - ___ Water Treatment operator present to oversee water quality and equipment operation when using recirculated water.
3. ___ Users and spectators
 - ___ Owners have established rules of conduct to ensure health and safety of users (Attach to this form.).
4. ___ Owner has resources and plan for monitoring the facility in response to various factors including electrical storms, visibility problems, etc.
5. ___ Water quality testing and sampling
 - ___ Owner has staff trained and prepared to sample for disinfectant and other

Recirculation System (if present)

- V. Minimum flow needed to maintain 6 hour turnover* is ___ gpm.
- W. Provide appropriate calculations and assumptions to determine pump rates:
 1. Pump capacity produces ___ gpm.
 2. Pump capacity produces ___ gpm with filter dirty (just prior to backwash).
 3. Is pump above ___ or below ___ spray pool water level? Specify the feet _____.
 4. If liquid chlorine pump is above the spray pool water level, is backflow protection specified?
 5. Provide pump curves for the pump(s) in spray pool system.
- X. Line size of recirculation system must be provided on the plans, with locations of all valves to provide for proper maintenance and use of equipment.
- Y. Main Drains.
 1. The open area on each main drain is ___ inches².
 2. The maximum width of opening on main drains is ___ inches (maximum of 1/2 inch).
 3. The maximum velocity through main drains assuming 100% of maximum pump flow is going through the drains, ___ fps (maximum 1.5 fps).
 4. Specify net outlet area, must be at least 4 times the area of the discharge pipe at main drain.

*Note: It is assumed that the recirculation system is being used in conjunction with a 30,000 gallon or more swimming pool. For any spray facility desiring to operate independent of any 30,000 gallon or more pool facility, a turnover time approaching 1/2 hour is recommended depending on number of users, total gallonage of the spray feature, and use. This assumes a that a variance has been granted for the independent facility.

Treatment System

- Z. Pump & Strainer.
 1. Specify location of pump strainer on plans.
 2. Specify any valving needed to isolate strainer for routine maintenance.
 3. If pump is above spray pool water level, specify the self-priming capability.
- AA. Filter.
 1. Type: DE ____, Sand ____, Cartridge ____, Other (specify) _____. Must be NSF approved.
 2. Number of filters used is _____.
 3. Number of square feet per filter is _____ sq. ft.
 4. Minimum application rate with filter dirty is _____ g/sf.
 5. Maximum filter application rate with filter clean is _____ g/sf.
 6. Air Relief.
 - a. Must note on plans.
 - b. When using a separation tank with a DE filter, instruction must be provided to warn operator to release air prior to opening.
 7. Gauges.
 - a. Must be noted on the plans.
 - b. Two gauges must be provided to measure differential pressure across the filter.
 8. Flow meter.
 - a. Note location on plans.
 - b. Note range of flow meter.
- BB. Disinfection.
 1. Type: Chlorine ____; Bromine ____; Other (specify) _____.
 2. Type of material used: Gas ____; Liquid ____; Solid _____.
 3. Note type of feeding equipment to be installed. Must be NSF approved for liquid or solid feeders.
 4. Maximum number of pounds of disinfectant feeding system can add per day is _____ pounds/day.

5. Gas Chlorine.
 - a. Note prevailing wind direction in relation to the spray pool facility; include air intake structures for the buildings and surrounding area.
 - b. Gas Chlorine storage – Specify separate sealed room, door opening must open to out-of-doors, provide sign on door.
 - c. Ventilation – Must have mechanical exhaust at one air change per minute, with remote or door activated switch to turn on fan; must have means to exhaust from floor of room; must have means for make-up air to room across breathing zone of operator; must have screened chlorinator vent.
 - d. Note type of breathing protection.
 - e. Must have vacuum injection chlorine systems, with vacuum-actuated cylinder regulators, integral backflow and antisiphon protection at the injector.
 - f. Must have taring scales, means for automatic shutoff when spray pool flow is interrupted, means to store cylinders securely, valve-stem cylinder wrench on cylinders.
 - g. The Size cylinders used are _____ pounds.
6. Chemical feeders for pH control.
 - a. Required on spray pools 50,000 gals or more.
 - b. Required if feeding caustic soda or CO₂.
 - c. Attach specification on the feeding equipment.
- CC. Chemical Storage.
 1. Provide information on placement of chemicals.
 2. Must be in conjunction with manufacturer's recommendations.
- DD. Testing Equipment.
 1. Provide information on type of equipment provided for testing spray pool water chemistry.