

STATE OF HAWAII
DEPARTMENT OF HEALTH
July 2002 (Version 6)

GUIDELINES APPLICABLE TO GOLF COURSES IN HAWAII

The State Department of Health recommends the following guidelines for all golf courses in Hawai'i to promote, protect, and enhance environmental quality and public health. These recommendations cover measures that could prevent groundwater and surface water pollution, soil contamination, chemical spills, noise and solid waste nuisances, and unsafe exposure to applied chemicals. Under certain situations, a state or county regulation may be necessarily applicable to a given activity, and such a regulation would require mandatory compliance. However, the intent of these guidelines is to voluntarily foster environmental protection and safety. Thank you for supporting these guidelines and caring about Hawai'i.

1. A groundwater or soil water monitoring plan for the purpose of preventing or minimizing groundwater contamination should be established with the following components:
 - a. Baseline groundwater quality;
 - b. Monitoring locations consisting of monitoring wells or lysimeters, or combination of both;
 - c. Routine groundwater and/or soil water monitoring at frequencies such as quarterly, semiannually, or annually depending on the use of chemicals and the detection of contaminants;
 - d. A list of chemicals and fertilizers that will be or have been used that may affect soil or groundwater adversely, and the analyses for such contaminants;
 - e. Recordkeeping of monitoring results and a system of tracking trends in order to prevent, minimize, or mitigate occurrences of contamination;
 - f. A procedure to notify all affected parties and the Department of Health of occurrences of contamination that pose, or may pose, a threat to public health or the environment.
 - g. Availability of monitoring data to any interested person.
2. A surface water monitoring plan, if applicable, for the purpose of preventing or minimizing surface water contamination should be established using the principles of item No. 1.
3. If the golf course uses recycled water (treated wastewater) for irrigation, please refer to the Department of Health's Guidelines for the Treatment and Use of Recycled Water, May 15, 2002, for recycled water requirements. Information about this subject may be obtained from the Department's Wastewater Branch at 586-4294 (Honolulu).

4. The use of an above-ground storage tank with applicable safety considerations for petroleum products, used for fueling golf carts, maintenance vehicles, or emergency generators, should be preferred over an underground storage tank in order to easily detect leaks and minimize the risk of soil and groundwater contamination resulting from a leaking storage tank. Information about underground storage tanks may be obtained from the Department's Solid and Hazardous Waste Branch at 586-4226 (Honolulu).
5. Buildings used to store fertilizers, pesticides, algicides, fungicides, herbicides, and other chemicals especially in liquid form should be designed purposely for the containment and recovery of a catastrophic spill or leak of contents. An early warning system for spill or leak detection is advantageous.
6. Noise and dust from maintenance or construction activities should not disturb neighbors. Maintenance or construction activities should be scheduled and conducted accordingly.
7. Solid wastes should be managed without creating a nuisance. Furthermore, all green waste generated by the golf course should be reused on-site. Shredding and composting are activities that precede the reuse of green waste as a soil conditioner or a ground cover for weed control. Space and equipment should be provided to accomplish these activities. Additionally, where practicable, locally produced compost and soil amendments should be used whenever available.
8. Chemicals should be handled and applied according to instructions, and offsite drift during application should not occur. Methods of application and weather conditions should be chosen to optimize success.
9. A Best Management Practices (BMP) plan should be made for the golf course. The BMP plan functions as a hands-on environmental and worker safety maintenance manual that describes in plain English the elements and procedures for irrigation, chemical use, processing and reuse of green wastes, minimizing or preventing runoff, soil erosion and nuisance conditions, and sustaining worker safety. Use of the BMP should prevent the occurrence or recurrence of environmental or safety problems. The BMP should be available to any interested person.
10. Agencies or organizations such as the State Department of Agriculture, the Federal National Resource Conservation Service, and the Golf Course Superintendents Association of America may provide ideas or practices that would help to achieve the intent of these guidelines. Inquiries to these sources of information are advantageous.

The Department of Health appreciates your cooperation to preserve and protect environmental quality in Hawai'i. Questions about these guidelines may be directed to the Groundwater Pollution Control Section of the Safe Drinking Water Branch at 586-4258 (Honolulu). Direct toll free calls can be made from Kaua'i: 274-3141, ext. 64258; Maui: 984-2400, ext. 64258; Big Island: 974-4000, ext. 64258; Molokai and Lana'i: 1-800-468-4644, ext. 64258.