



STATE OF HAWAII DEPARTMENT OF HEALTH

January, 1992 (Version 4)

TWELVE (12) CONDITIONS APPLICABLE TO ALL NEW GOLF COURSE DEVELOPMENT

The following conditions are recommended for all new golf course development in Hawaii to assure that environmental quality is preserved and enhanced as it relates to human health and the protection of sensitive ecosystems. Additional conditions may be imposed based on site-specific considerations.

1. Baseline groundwater/vadose zone and/or, if appropriate, coastal water quality shall be established. Once the sampling plan has been determined and approved by the State Department of Health, the owner/developer shall establish the baseline groundwater/vadose zone water quality, and, if appropriate, nearshore water quality, and report the findings to the State Department of Health. Analyses shall be done by a laboratory approved by the Department of Health.
2. The owner/developer and all subsequent owners shall establish a groundwater monitoring plan and system which shall be presented to the State Department of Health for its approval. The groundwater monitoring plan and system shall minimally describe the following components:
 - a. A monitoring system tailored to fit site conditions and circumstances. The system shall include, and not be limited to, the use of monitoring wells, lysimeters, and vadose zone monitoring technologies. If monitoring wells are used, the monitoring wells shall generally extend 10 to 15 feet below the water table.
 - b. A routine groundwater monitoring schedule of at least once every six (6) months, or more frequently, if required by the State Department of Health in the event that the monitoring data indicates a need for more frequent monitoring.
 - c. A list of compounds which shall be tested for as agreed to by the State Department of Health. This list shall include, but not be limited to the following: total dissolved solids; chlorides; PH; nitrogen; phosphorus; and other compounds associated with fertilizers, biocides, or effluent irrigation.

3. If the data from the monitoring system indicate increased levels of a contaminate that poses, or may pose, a threat to public health and the environment, the State Department of Health shall require the owner to take immediate action to stop the source of contamination. Subsequently, the owner shall mitigate any adverse effects caused by the contamination.
4. Owner/developer shall provide sewage disposal for the clubhouse and other facilities by connecting to the public sewer system or by means of a treatment individual wastewater system approved by the Department of Health in conformance with Administrative Rules, Title 11, Chapter 62, Wastewater Treatment Systems. The use of wastewater for irrigation will be generally encouraged, with appropriate controls (see Condition 5).
5. If a wastewater treatment works with effluent reuse becomes the choice of wastewater disposal, then the owner/developer, and all subsequent owners, shall develop and adhere to a Wastewater Reuse Plan which shall incorporate the provisions of the Department of Health's Guidelines for the Use of Reclaimed Water which includes:
 - a. An Irrigation Plan encompassing buffer distances, pipe and appurtenance placement, and labeling.
 - b. An Engineering Report encompassing treatment options and treatment levels.
 - c. Hydro-geologic and hydrologic surveys to determine application rates, sizing and storage needs.
 - d. A monitoring plan.
 - e. A management plan.
 - f. Public and employee education plans.
6. Underground storage tanks (USTs) used to store petroleum products for fueling golf carts, maintenance vehicles, and emergency power generators that pose potential risk to groundwater shall be discouraged. Use of electric golf carts and above-ground storage tanks for emergency power generators shall be encouraged.

Should the owner/developer/operator plan to install USTs that contain or other regulated substances, the owner/developer/operator must comply with the federal UST technical and financial responsibility requirements set forth in Title 40 of the Code of Federal Regulations Part 280. These federal rules require, among other things, owners and operators of USTs to meet specific requirements in release detection and response, and subsequent corrective action. Also, the owner/developer/operator must comply with all State UST rules and regulations pursuant to the Hawaii Revised Statutes, Chapter 342-L, Underground Storage Tanks.

7. Buildings designed to house the fertilizer and biocides shall be bermed to a height sufficient to contain a catastrophic leak of all fluid containers. It is also recommended that the floor of this room be made waterproof so that all leaks can be contained within the structure for cleanup.
8. A golf course maintenance plan and program will be established based on "Best Management Practices (BMP)" in regards to utilization of fertilizers and biocides as well as the irrigation schedule. BMP's will be reviewed by the State Department of Health prior to implementation.
9. Every effort shall be made to minimize the amount of noise from golf course maintenance activities. Essential maintenance activities (e.g., mowing of greens and fairways) shall be conducted at times that do not disturb nearby residents.
10. Solid waste shall be managed in a manner that does not create a nuisance. Whenever possible, composting of green wastes for subsequent use as a soil conditioner or mulching material is encouraged. The composting and reuse should be confined to the golf course property to eliminate the necessity for offsite transport of the raw or processed material.
In addition, during construction, the developer should utilize locally-produced compost and soil amendments whenever available.
11. Fugitive dust shall be controlled during construction in accordance with Hawaii Administrative Rules, Title 11, Chapter 60, Air Pollution Control. Pesticides and other agricultural chemicals should be applied in a manner that precludes the offsite drift of spray material. The State Department of Agriculture should be consulted in this regard.
12. To avoid soil runoff during construction, the developer should consult with the U.S. Department of Agriculture, Soil Conservation Service to assure that best management practices are utilized. If the total project area is five (5) acres or more and the development activities include clearing, grading, and excavation, a National Pollutant Discharge Elimination System (NPDES) stormwater permit application shall be submitted to the Department of Health in accordance with the Federal Clean Water Act requirements.

If there are any questions regarding the twelve (12) conditions mentioned here, please contact the Environmental Planning Office at 586-4337. We appreciate your cooperation in preserving and protecting environmental quality in Hawaii.