

CHAPTER 2 SITE SELECTION

2-1. Location

The major factors in the selection of suitable sites for treatment facilities include the following: topography; availability of a suitable discharge point; and maintenance of a reasonable distance from living quarters, working areas and public use areas of the proposed facilities, as reflected by the master plans. The siting criteria for the water pollution control facility should consider State wellhead protection requirements for drinking water sources. In absence of a state requirement, a minimum distance of 1,000 feet should be maintained between a drinking water source and any proposed water pollution control facility. For on-site treatment systems, rainfall and soil characteristics are major criteria. Plants of 50,000 gallons per day or less treatment capacity will be more than 500 feet from the above facilities when this minimum distance will not result in unacceptable noise or odor levels. Larger plants, and wastewater treatment ponds regardless of size, will be more than one-quarter mile from such facilities. Greater distance may be required when such facilities are located: on the leeward side of the treatment plant; in areas subject to prolonged or frequent air stagnation or fog/mist cover; and at a lower elevation than the treatment works, with surface and ground water flow from the treatment plant toward the occupied area. (See Ferguson, 1980.)

a. Cold climate. Exceptions to the 500 feet restriction can be made for cold climate module complexes where the treatment system is a part of the module complex. However, sewage treatment works will not be located within the same module as living quarters.

b. Septic tank systems. Standard septic tank systems with subsurface drain fields do not fall under the 500 feet restriction. In cases where special design is provided to control aerosols, gases and odors, a waiver to reduce the minimum distance may be requested through command channels to HQDA (CEEC-EB) WASH DC 20314-1000 for Army projects and HQ USAF/LEEE WASH DC 20322 for Air Force projects. Distance reductions must not result in creation of unacceptable noise levels when plant equipment is in operation. The request will state the special design features that support the waiver, including any pertinent supporting data. Unit processes, plant size, and prevailing wind and climatic conditions will be given. In addition, the elevation differentials in relation to prevailing winds, adjacent facilities and terrain will be fully described.

2-2. Space requirements.

Sufficient space must be allocated not only for suitable arrangement of the initial units and associated plant piping but also to accommodate future expansion. Future expansion includes the provision of increased capacity for existing processes and the addition of new types of units known to be required for upgrading redesigned systems to the future requirements of more stringent stream and effluent standards.

2-3. Access.

The site will be selected so that an all-weather road is available or can be provided for access to the plant. Available rail sidings will also be utilized when practical. Consideration should be given, during layout of buildings, roads, fencing and appurtenances, to winter conditions, especially of snow drifting and removal. Considerable energy savings may result from partially earth protected north walls, from solar passive collectors, and from proper insulation. Evergreen shrubs planted in the correct location may dampen cold prevailing winter winds but if planted in an incorrect position, can cause drifts or interfere with snow removal. (Babbit and Bauman, 1958.)