

solid waste

disposal



category

SUMMARY SHEET

sub-category

WATER QUALITY

BMP

SOLID WASTE DISPOSAL

LANDFILL SITING

OBJECTIVE

By prohibiting the siting of landfills over major aquifers and within critical recharge areas, the risk of contaminating groundwater and impairing the use of groundwater supplies will be minimized.

WHERE APPLICABLE

In regions where groundwater supplies are deemed valuable or are relied upon for residential/industrial or commercial use.

PROS

1. Decrease potential threat for groundwater contamination from landfill leachate.
2. Ensure prolonged supply of high quality groundwater.
3. Avoid high cost of aquifer rehabilitation (sometimes not possible to rehabilitate).
4. Avoid high cost of seeking alternative water supplies.

CONS

1. Can make site-finding procedure somewhat more difficult.
2. Requires more complex site evaluation procedures and data.

IMPLEMENTATION CONSIDERATIONS

1. Areas are screened with regard to geotechnical data (bedrock and surficial geology, hydrology and soils) to determine their suitability for a landfill.
2. Groundwater flow (velocity and direction) as well as the type of underlying geologic formation should be carefully examined so that the sites where there exists a threat of encroachment of landfill leachate into groundwater supplies can be avoided.
3. This consideration deserves top priority since (a) groundwater is heavily relied upon for water supply, (b) groundwater is often very expensive and difficult to rehabilitate if possible at all, and (c) costs associated with securing new water supplies could be exorbitant.

a

LANDFILL SITING

4. Certain geologic formations should be excluded from siting consideration due to their susceptibility, e.g. cavernous limestone and thick stratified drift deposits.
5. Leachate collection and containment systems, landfill liners, monitoring systems and impervious lateral cutoff walls are now required as minimum design standards by the NJDEP. (Also see RCRA regulations)
6. Recycling and reuse of renewable resources such as glass, newsprint, ferrous metal, aluminum, plastic, etc. should be maximized to reduce the volume of waste going to landfills and realize positive energy savings.

For Additional Information

1. Sussex County Department of Planning, Conservation, and Economic Development, Sussex County Solid Waste Management Plan. Newton, N.J.: Sussex County Planning Department, June 24, 1980.
2. Reindl, John. "Sanitary Landfill Site Design". Waste Age. August 1981.

b

category

SUMMARY SHEET

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WATER QUALITY

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SOLID WASTE DISPOSAL

LANDFILL CLOSURE

OBJECT

To reduce the threat of pre-existing dumps and landfills that have been known to contaminate groundwater systems due to their improper siting, construction and operation.

WHERE APPLICABLE

Landfills not meeting state-of-the-art requirements of leachate containment, monitoring, landfill liners, and other necessary design considerations, as well as all other landfills.

PROS

1. If proper closure requirements are enforced, threat of groundwater contamination can be effectively reduced.
2. If groundwater is contaminated, it is costly and difficult, if possible at all, to rehabilitate.
3. If groundwater supply is lost, it is costly to secure new supplies.
4. Public health and safety will be enhanced.

CONS

1. Additional costs will be associated with proper closure and monitoring procedures.

IMPLEMENTATION CONSIDERATIONS

1. Problem - alerting methods such as monitoring wells and periodic sampling of surface water around pre-existing landfill/dump sites should be instituted and monitored for 20-30 year period.
2. Drainage in and around the landfill should be evaluated to determine how to contain/collect leachate and surface runoff through dikes, cut-off walls, etc.

a

LANDFILL CLOSURE

3. Removal of leachate with pumping wells and proper pre-treatment of leachate prior to removal from site should be performed.
4. Methane gas vents should be installed.
5. Proper final cover and capping should be performed.

For Additional Information

1. Sussex County Department of Planning, Conservation, and Economic Development. Sussex County Solid Waste Management Plan. Newton, N.J.: Sussex County Planning Department, June 24, 1980.
2. Resource Recovery and Conservation Act (federal)
3. New Jersey Department of Environmental Protection.