



# State of Nevada

## Department of Conservation & Natural Resources

### Division of Environmental Protection

[NDEP.nv.gov](http://NDEP.nv.gov)

## FACT SHEET — Alternative Final Covers For Low-Risk MSW Landfills

Nevada solid waste regulations (NAC 444.6891) require that final covers for MSW landfills be designed to minimize infiltration and erosion. The prescriptive design is a barrier layer consisting of at least 18 inches of compacted low-permeability ( $1 \times 10^{-5}$  cm/sec) soil covered by an erosion layer of at least 6 inches of soil capable of sustaining the growth of native plants.

In addition to this prescriptive standard, the Solid Waste Management Authority may approve an alternative final cover design that provides equivalent protection from infiltration and erosion. There is a substantial body of evidence which indicates that alternative final cover designs which maximize moisture removal from the cover through the natural processes of evapo-transpiration and runoff can prevent infiltration as well as, or better than, the prescriptive design, especially in arid regions. Additionally, construction of an alternative cover may also cost less at locations which do not have low-permeability soils available.

At disposal sites where the risks to public health and the environment are relatively high, a thorough evaluation of an alternative cover design should be conducted based on site-specific information. This process, however, can be time-consuming as well as expensive and is not appropriate at sites with a relatively low risk.

### Low-Risk Sites and Generic Design

The risk of leachate generation and ground-water contamination at some of Nevada's municipal landfills is very low. For purposes of alternative final cover evaluation, NDEP considers sites with the following characteristics to be low-risk:

- groundwater is at least 100 feet below ground surface;
- very small, i.e., have disposed less than an average of 2 ton/day or the amount generated by a community of approximately 1000 inhabitants (based on 4.4 lb/person/day generation rate);
- have not employed deep waste disposal practices, i.e. trenches or mounds are less than 15 ft. thick;
- have low average annual precipitation...less than 10 inches;
- not subject to significant snow accumulation;
- have soil cover material that is capable of supporting native vegetation, is not subject to significant wind erosion, is applied in sufficient thickness and has enough field capacity to absorb moisture from precipitation without significant drainage through the cover.

At sites meeting the above characteristics, alternative cover designs must meet the following minimum standards of design and construction:

- three feet of soil cover;
- the cover will be constructed to promote runoff, and with adequate drainage controls to prevent run-on;
- revegetation with native or other appropriate species will be conducted within 6 months of cap construction, and repeated as necessary until established.

### Site-Specific Design

Landfill owners/operators may also propose alternative cover designs based on site-specific characteristics and a demonstration that the design is sufficient to prevent the migration of contaminants to waters of the state.

### Maintenance

The requirement for post-closure care stated in NAC 444.6894 does not apply to Class II landfills that stop accepting waste prior to October 9, 1997, and construct the final cover within 180 days thereafter. Nevertheless, owners/operators of such landfills should be prepared to periodically inspect them to verify that no illegal dumping is occurring and to evaluate the condition of the cover. The integrity and effectiveness of the cover should be maintained by making repairs as necessary to correct the effects of settlement, subsidence, erosion and loss of vegetation.

### Contact

For additional information or to request a copy of the revised landfill regulations, contact the NDEP Solid Waste Branch at (775) 687-9462.

Facilities located in Clark or Washoe Counties that are interested in alternative final cover design should contact:

- [Southern Nevada Health District](#) at (702) 759-0600
- [Washoe County District Health Department](#) at (775) 328-2434