

Daily, Intermediate and Final Cover Soils: In a convectional landfill, design of cover soil has been oriented towards selecting material that will not create an impermeable layer to impede the leachate's downward movement, nor restrict gas capture [3]. Here the daily cover refers to the 150 mm of soil layer placed above each lift of wastes. But, in Bioreactor landfills, these covers prevent the leachate from escaping through the sides of the landfill and contaminate the environment. This cover over the wastes also have an advantage of safety against diseases, vectors, fires, odors, blowing litters, and scavenging without presenting a threat to human health and the environment [2].

The alternative cover may be compacted with agricultural wastes such as composted yard wastes, etc. These materials degrade and can be placed over the solid waste lifts. Other alternative cover materials include polymer foams, slurry sprays, sludge, reusable geosynthetics and geotextile. The geotextile has a higher advantage compared to these other materials. i.e. It can control the rate of precipitation and infiltration into the landfill. For bioreactor landfills, a final cover may not be placed until most of the settlement has occurred. Instead, a temporary cover may be placed [2].

Monitoring of Bioreactor Landfills: Monitoring and proper recordkeeping is very important at all landfills, but in case of bioreactor landfills it is highly critical and should be accurate as the entire efficiency of this system depends on how well it is controlled. Most bioreactor landfills have operators who are responsible for routine data collection and reporting. Keeping proper records of the liquid balance in the cells, the liquids added to the landfill and leachate removed from the landfill should be a major emphasis [12].

Also, the staff responsible for Bioreactor Landfill Operation should be experienced and well trained and has multiple responsibilities. These responsibilities include the operation of liquids addition in the system, inspection of the landfill site, and recording of necessary data. In many cases these operators will also play a large role in managing the gas collection system. Another role of the staff is to monitor carefully and to do the appropriate maintenance works when ever needed, mainly in case of the fluid handling systems such as the pumps and meters [12].

5. Conclusion

It's now time to think for the future and seriously consider waste management as a major concern for a developing country like India. The huge amount of solid waste that is being produced in India and the depreciation of the Indian economy could be solved together by promoting this Bioreactor landfill technology as a major treatment methodology in waste management. A full scale application of Bioreactor technology can relatively stabilize the whole waste within 5 to 10 years, as compared to many decades in case of dry tomb landfills. Thus it also opens a wide range of possibilities for the reuse of land, resources and property, after the lifetime of the landfill. It is hoped that this technology will become an effective option in managing our solid waste industry in the near future.

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