

Level monitoring of leachate

Landfill refuse sites are one of the oldest forms of refuse disposal. They are usually located above an underground natural or synthetic membrane liner, which forms an impermeable layer against leachate penetrating the soil and contaminating ground water. Level monitoring of leachate collecting basins is therefore essential to guarantee that leachate does not contaminate the ground water, and thus, does not damage environment and human consumers..



When rain water passes through the refuse it will assist the decomposition of garbage, scrap metal and more and will solve toxic or hazardous liquids, such as acids, oils, etc.. This contaminated rain water will collect as leachate at the bottom of the landfill in lined basins. The level monitoring of leachate allows the site operator to control the depth of the leachate and pump out the basin as required. This will ensure that the local natural ground water resources will not be polluted.

Level monitoring of leachate in these sites can be more challenging than other waste water applications. To monitor the level, a hydrostatic level sensor, a so called submersible pressure transmitter or level probe will be passed down a narrow diameter pipe to the bottom of the landfill where a pump is located.

The submersible pressure transmitter and its cable are therefore in direct contact with very aggressive leachate and other aggressive treatment fluids. Thus, special materials may be required for the design of the level probe and cabling.

Leachate may even be re-injected into the landfill to accelerate the decomposition of the refuse. As a byproduct of the refuse rotting down, methane gas can be produced. This means that the site may have to be classified as a hazardous area and the level monitoring sensor must be suitable for use in explosive areas, by e.g. integrating intrinsically safe electronic circuits or other means of explosion protection.

The leachate will eventually be passed through holding and treatment tanks where level is continuously monitored to control the treatment of the leachate. The leachate will be treated depending on its water quality and contaminants before being returned to natural resources. The leachate and the quality of the water after treatment will vary widely depending on the age of the site and the type of waste it contains.

Without accurate level monitoring solutions for leachate the site engineers would be working blind and serious contamination of the ground water resource would pose a potential threat to the environment and population of the area.

Please find further information on this topic on our information platform www.wika.com/hydrostatic-level



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