LANDFILL

CONDENSATE Knock-out Pots

Landfill gas is usually saturated with water when it enters the collection pipe work. The temperature at witch it is forms is generally about 30-35°C and this is therefore its "dew point". As the gas travels from the waste along the collection line it will cool and the water will condense out to form condensate.

Condensate accumulation in the collection main reduces the ease which the gas can be collected. If this accumulation is not drained, the collection pipes may eventually flood, especially at low points, and cause a "hydraulic lock" within the system.

The symptoms of condensate built up will be deterioration of gas quality and shut down of the flare due to low methane within a short time of commissioning.

The proper installation of the pipe work laid above ground takes a very important role in the whole design.
The horizontal gas pipe work is very susceptible to the production of condensate as the black HDPE pipe absorbs a great deal of heat during the day and cools rapidly at night.
Because of the above and fro frost protection it is recommended that collection mains are buried below ground level.

The most common method of controlling condensate is to install condensate knock-out pots (KOP) to individual low points within the system or at the field regulation stations.
Depending on the site the condensate can either be drains back into the site or pumped to a discharged point.

The amount of condensate will vary depending on site conditions but all landfill gas systems will have some degree of condensate within them.

The amount of condensate which occurs in even the smallest system is much more than most people realize. Konck0out pots should therefore always be a part of any landfill gas extraction system.

The main factors to consider when designing condensate drainage are :

- **Location of KOP – Try to drain away from well wherever possible.**
- **Sizing of KOP – To ensure correct pressure drop and adequate reservoir.**
- **Depth of KOP – To ensure that suction vacuum can not lift the condensate back up into the collection pipe.**
- **Depth of drainage material underneath should be at least twice the depth of the knock-out pot.**
- **The most important factor to consider once the condensate has been successfully collected within the KOP is that it must adequately removed.**

THE NEED TO CONTROL CONDENSATE IS VITAL FOR A SUCCESSFUL SYSTEM.

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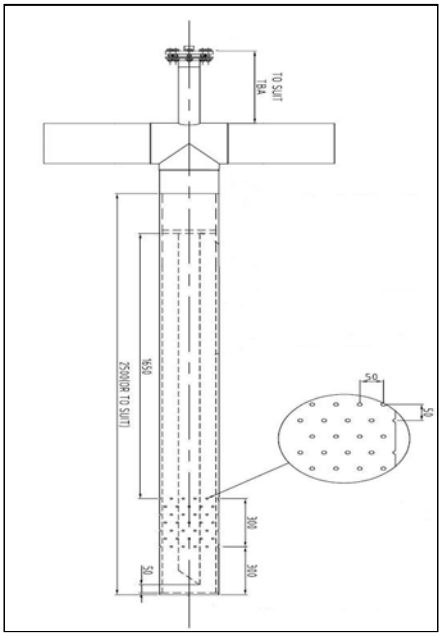
TECON

LANDFILL

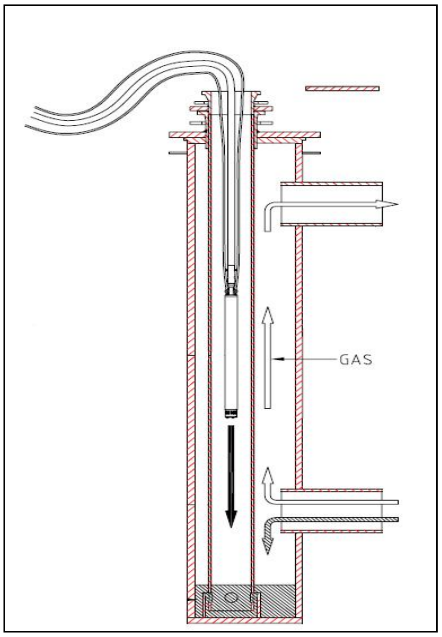
CONDENSATE Knock-out Pots

There are two main types of condensate knock-out pots:

1. **SYPHON TYPE (SKOP) : Where the condensate drains by gravity into the waste through a liquid seal at the base of the condensate trap.**



2. **PUMPED TYPE (PKOP): Where intrinsically pneumatic safe pumps are installed to pump the condensate to a suitable discharge point. These are often used where leachate pumping systems are installed.**



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