

Audit of the Biogas Management System of several Municipal Landfills in France

Project Details

France, (six different landfill sites)

Client:

Confidential

Project Budget:

Confidential

Key Staff:

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Duration:

2010 - 2012

Provided services

- BLP Calculation
- Measurement of the biogas flow, pressure and composition on all the biogas collecting points and collectors of the landfills
- Establishment of the biogas balance of the landfills in order to evaluate the potential of biogas valorisation

Introduction

The Client supplies runs landfill gas valorisation projects on several municipal landfills in France.

Project objectives

Pollux Consulting has conducted an audit of the biogas extraction, collection and valorisation system of several French landfills, in order to evaluate the potential of improvement of the biogas valorisation.

Services delivered for each landfill

Based on the Client's data, Pollux Consulting carries out a calculation of the BLP (Biochemical Landfill gas Potential) of the landfill, using its own software.

In a second phase, Pollux Consulting did a campagne of measurements of the biogas flow, pressure and composition (CH_4 , CO_2 , O_2 , balance and H_2S) on all the biogas sources, collectors and at the blower station of the landfills. The results were compared with the results of the model.

The efficiency of the extraction system was evaluated by comparing the theoretical results with the on site data. Depending on the management of the landfill, quality of temporary or final covers and management of the leachate, the results indicated extraction efficiencies, from 50 % up to 70 % (occasionally 80%) of the maximum theoretical flow calculated by the model.



In a third phase, Pollux Consulting carried out an extraction optimisation by regulating the valves at the biogas sources in order to improve the flow and the methane content of the biogas. In order to evaluate the design of the extraction network, the design was checked using Pipeflow software. This software generates theoretical flows and pressures at all locations in the extraction system. Pollux Consulting evaluated the biogas extraction and collection system of the landfills by analysing the state of all the sources (shafts and horizontal drain collection pipes) and clusters, detecting failures in some pipes and local failures in the capping.

Pollux Consulting has gained specific experience on leachate recirculation in order to improve and enhance biogas production.

