

Ready to Market Green Non Bio Sewage Odour Systems

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This new system is fully automated, doesn't need any chemicals, uses irrigation or brackish water, discharges odour free air and is 99.9% on line.

The ultimate solution in sewage odour control technology is the IPEC green odour control system. This system/technology is used for higher concentrations, where chemical scrubbers, bioscrubbers etc plus carbon are used today (From 25 ppm dynamic up to 200 ppm dynamic).

The process developed by IPEC goes in 2 steps:

1 - First stage of the treatment: the incoming odour (mainly H₂S) is reduced from 25 - 150 ppm H₂S to approx 5 ppm in a **Green Scrubber**.

In lieu of Pall rings in a chemical scrubber or bioscrubber, we put a catalyst in the vessel. The catalyst is converting the H₂S into sulphuric acid (very dilute concentration) - Every day a partial washing of the catalyst may take place, whilst the scrubber is working (non stop deodorisation). Only irrigation water, tertiary effluent, even salty groundwater (brackish water) or equal can be used to wash the carbon. No chemical is used, no conductivity meter, no ORP meter, no chemical storage tanks ... The process is completely automated with no need for personnel to oversee the process. Dust, mud particles entering with the dirty air have little influence, since the green scrubber is washed partially once a day.

IPEC installs a pH meter to control the water quality. As the catalyst is partially wet, full deodorisation cannot be guaranteed all the time. A post treatment is required.

The system is very compact: on 25 sq meter (700 sq ft) floor space, up to 50.000 M³/Hr (or 85.000 SCFM) can be treated. Biological wet scrubbing systems will be at least 5 fold.

The performance is controlled by electronic H₂S sensors before and after the catalyst, which can be connected to a Skada system.

2 - Polishing: After the green scrubber, we have our traditional water regenerable carbon filter. Again, only water is required to clean the carbon bed, and it takes only a few hours. For regenerating the carbon filter, the process must be stopped for a few hours. Since this is required once, max twice a year, it is acceptable and is usually planned during the night. A PLC takes care of the complete regeneration process. Final air quality is permanently controlled by electrochemical sensors for H₂S, which produce a 4 - 20mA signal (to the main control panel, recorder, Skada ...)



References:

IPEC has four systems in the Middle East: The first system is treating 25.000 M³/Hr of extracted odour from sewage tanker discharge area. The odour is extracted from 10 discharge points. IPEC engineered the complete odour collection, extraction and treatment system. Already from the initial runs, a reduction from well over 100 ppm H₂S to 5 ppm H₂S in the first stage and odour free in the second stage. This is exactly as designed and expected.

The same customer ordered an additional 3 units. Two units (each treating 45.000 M³/Hr) are treating sewage odour from the screw pump main sewage lifting pump stations in a multi million habitant city treatment plant. One system will take the air from the sludge dewatering building (9 filterpresses) We expect to see a water consumption of approx 15 M³/Day (if incoming H₂S is + - 100 ppm) Caustic, bleach, peroxide: ZERO!

Operating cost – energy consumption

In a time of rising energy costs IPEC takes the main factor, pressure drop across the system, very seriously.

The power consumption is very moderate, because the system pressure drop is kept low. The catalyst particle size is approx 10 mm in main particle size and the polishing activated carbon is a 5 mm nominal dia pellet. The average system pressure drop is around 4000 Pascal. For this pressure, no energy wasting high pressure centrifugal fans are required, just medium pressure standard centrifugal fans. For 45.000 M³/Hr, 55 kW motors are installed.

Needless to say this new technology is a tremendous saving in operating cost! In addition, unqualified labour can do (the minimal required) maintenance. No training for handling chemicals, no risk for leaks, soil contamination, surface water spills etc The H₂S is

simply converted in sulphate ions with an average concentration of only 0.1 % average in the effluent. The same customer will give us several additional orders in 2009.

Catalyst and activated carbon life.

The expected life time of the catalyst is at least 5 years and the carbon at least 10 years.



Flexibility of operation

The system can be started, stopped any time you like because there is no biology involved in the purification process. The performance is available from the first second, unlike biological systems (days, weeks...)

Summary

IPEC nv is offering a long expectancy, reliable, non-polluting, non-chemical based, completely automated system. In a time of restricted resources (qualified manpower, engineers etc.) chemicals, storage facilities for chemicals, safety, price of land, this new technology is the answer.

The best surprise is that the capital cost is max equal or less than a conventional 2 or 3 stage chemical treatment system including chemical storage tanks.

IPEC nv Belgium will reinforce their position a main supplier for odour control equipment.

Although the company has only been in existence for 10 years, approx. 250 installations are installed to the satisfaction of our clients.