

Ciba^â Environmental Services

Case study

Environmental Process Assessment

Background

Laws and regulations are as a rule directed towards one single environmental area (water, air or soil). Correspondingly, technological measures in environmental protection have the objective of keeping to prescribed limiting values, regardless of how much energy and resources they need. This one-sided attitude, prescribed by the law, frequently leads to a shifting of the problem from one environmental area to another.

Solution

By means of environmental assessments, ENVIRONMENTAL TECHNOLOGY integrally assesses disposal processes. Besides the ecological benefits, the harm to the environment resulting from these processes is also determined. On the basis of this ecological cost/benefit analysis, the aim is to achieve maximum ecological efficiency for the solution of each problem. The environmental assessment is being used increasingly as a basis for successful collaboration with the authorities. Comparisons carried out by ENVIRONMENTAL TECHNOLOGY in wastewater treatment and in soil decontamination have led to results that have played a major role in the decision making processes by the responsible authorities.

Acceptance

Today there are many environmental assessment models available, with which a dilemma is always to be seen, between practicability, objectivity and completeness. A conscientious interpretation of the results and practicable assumptions and calculations increase the informative value and the acceptance of an environmental assessment

Experience

A problem with environmental assessments is the time-consuming collection of the data. ENVIRONMENTAL TECHNOLOGY possesses a large amount of basic data that are summarized in so-called standard modules. The handling of these data and the composition of the modules are supported by appropriate software. With the necessary specialist knowledge, a wealth of experience and a comprehensive database, ENVIRONMENTAL TECHNOLOGY is in the position to provide, as a service, an efficient instrument for the environmental assessment of processes. On the basis of the following example, a possible area of application for environmental assessments is presented.

Example

An agrochemicals production plant produces about 5000 m³ of waste water, containing a total of 500 g of crop protection products, per year. For the treatment of this pesticide containing waste water, an activated carbon filter with an elimination capacity of 99.9% was suggested by ENVIRONMENTAL TECHNOLOGY.

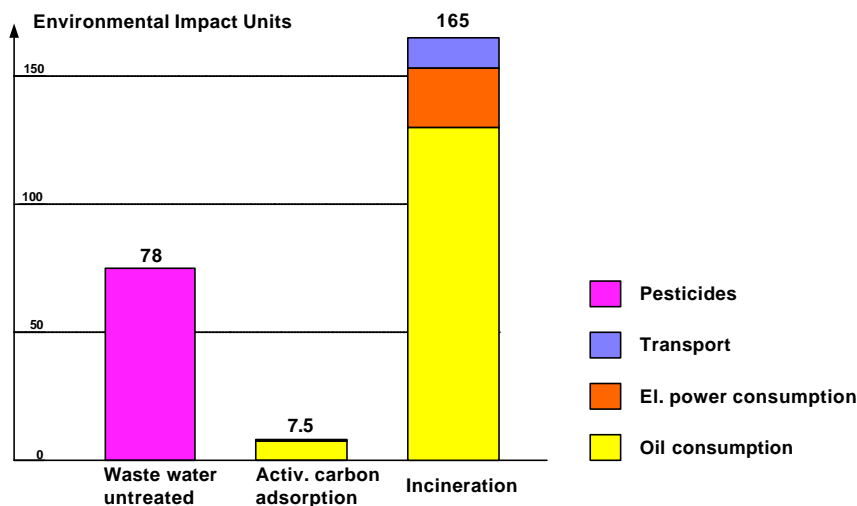
Because of the residual amount of 50 g of pesticides per year, the responsible authorities demanded the incineration of the whole amount (5'000 tons) of the waste water.

An ecological assessment of the two procedures showed that in this case incineration is an ecologically unsuitable means of disposal. Although the incineration of waste water leads to the complete destruction of the pesticides, on the other hand this advantage has to be paid for with enormous consumption of energy (see following illustration).

On the basis of the unequivocal results presented, the official requirements were disputed in court, with the result that the authorities had to withdraw their extreme demands. This legal decision opened the way for an ecologically efficient adsorption process which is today applied to the complete satisfaction of all concerned.

Result

Total environmental pollution with the two processes, according to the method of Schaltegger and Sturm

**Other references**

- Environmental assessment of different soil and groundwater decontamination projects
- Global weak-point analysis of the wastewater disposal at the Ciba/Novartis plant in Basel, by means of environmental assessments
- Environmental assessment of different possibilities for the disposal of wastewater sludge
- Environmental assessment of different waste water and exhaust-air purification plants
- Environmental assessment of the old and hazardous waste incineration plants in Basel
- Environmental assessment of two processes, for the recovery and the disposal of methylene Chloride

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