

Landfills / Contaminated Soil

Roche Position

Knowledge and experience gained over time sometimes lead to changes in procedures that were quite common in the past. This applies in particular to the treatment and disposal of chemical waste. Landfills containing this material are under scrutiny today for potential risks, resulting in the need for thorough risk analyses. Soil and groundwater that have been contaminated with chemicals are being similarly investigated. Depending on the results of the risk analyses, appropriate remediation measures have been implemented.

As a pharmaceutical and diagnostics company, Roche has relatively low volumes of chemical production. Therefore, the total quantity of chemical waste generated and the company's share of chemical deposits in common landfill sites are generally small.

Roche accepts responsibility for all waste generated from its operations, including that deposited at its sites or in on-site or off-site landfills. This responsibility extends to the activities of the former Roche Vitamins, as well as those of acquired businesses.

The company policy on "Safety, Health and Environmental Protection in the Roche Group" permits landfilling of waste only as a last resort. For chemical waste this treatment is allowed only for inert materials (slag, incineration ash). Depending on the local situation (availability of suitable waste treatment plants), non-hazardous general waste may be disposed of in authorized landfills.

In assessing a particular situation requiring remediation, Roche focuses on the importance of conducting a full risk assessment to determine the best course of action.

Development of the present situation

Industrial activities often leave residues in the soil at the site in question. Therefore, concentrations of substances used at chemical manufacturing or processing facilities may be found in trace quantities in the ground. In addition, by its very nature the synthesis of pharmaceutical substances results not only in the desired compound, but also in by-products which ultimately have to be disposed of as chemical waste. Historically, insufficient know-how along with a lack of appropriate technical resources resulted in landfilling as the common disposal method. Strict procedures were legislated, as a result of which various local authorities made suitable plots of land available for a charge, often for joint use by a number of companies.

Improved knowledge of geological characteristics and adverse impacts associated with chemical contamination of soil and groundwater has halted the use of landfills for the disposal of chemical waste in the eighties of the 20th century.

Contaminated sites today are subject to increased monitoring and thorough examination in order to evaluate their risks

and to initiate the steps required for containment or remediation. This risk assessment-based approach is unfortunately not generally accepted. In some countries, political organizations are rejecting solutions based on sound science and are calling for more radical measures, i.e. excavation and incineration in all circumstances.

The situation at Roche

As already mentioned, Roche has relatively low volumes of chemical production and chemical waste. However, prior to October 2003, activities of the Roche Group included the manufacturing of vitamins and fine chemicals. This high-volume production generated considerable amounts of chemical waste, which decades ago were disposed of, at least in part, in landfills. Although the vitamins business has been divested, Roche continues to maintain responsibility for contaminated sites, as well as chemical waste landfills connected with this business. The same applies to operations that have been sold in the past owing to the changing scope of the Roche Group. Adequate reserves have been set aside to cover the cost of any remediation necessary in the future.

Roche has also assumed responsibility for a number of contaminated sites due to company acquisitions. Some of these sites have already been remediated, while others are being monitored with additional measures currently under investigation.

When Roche becomes aware of a contaminated site, studies are initiated to evaluate the risks associated with the contamination. Depending on the outcome, steps are then taken to monitor, contain or, if necessary, remediate the site. As these issues are generally strictly governed by legislation, the entire process is conducted in close collaboration with the competent authorities and in compliance with the current legislation.

If Roche is identified as the sole party responsible for a contaminated site or landfill, an investigation can be promptly initiated, and necessary remediation measures evaluated and implemented without delay.

If contaminated landfill sites are shared with other companies, collaboration is sought with all parties involved in order to identify solutions that are mutually acceptable while satisfying regulatory requirements.

Further information

The topics of chemical waste, landfills and contaminated soil have been addressed numerous times in the annual Roche Group Reports on safety and environmental protection, as well as in the following sustainability reports.

http://www.roche.com/investors/annual_reports.htm).

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