Groundwater Treatment during Lowering Groundwater Level at a former Waste Dump in Wiener Neudorf, Austria

BAUERUmweltgruppe

Client:	STRABAG AG, Austria
Engineering Design and Supervision:	Intergeo, Wien
Scope of works:	Lowering Groundwater Level and Groundwater Treatment during a Waste Dump Relocation
Contract Period:	since December 2002

FWS Filter- und Wassertechnik ▪ Schafwiesenstraße 5-11 ▪ 78655 Dunningen-Seedorf ▪ Tel. +49 7402 9203-0 ▪ Fax +49 7402 9203-88 ▪ www.BAUERUmweltgruppe.com

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Project
FWS Filter-und Wassertechnik GmbH designed a groundwater treatment plant for a waste dump relocation in Austria. The relocation process was carried out in several periods. Therefore the treatment plant was considered to be adjustable to the works and the remediation process of the relocation. Finally the plant could be adjusted to four different levels. Starting from Period I with a groundwater flow of 25 l/sec the plant capacity was reduced to 10 l/sec and later in Period III to 3 l/sec

Sedimentation basins are made of special foil used for soil works.

Remediation Site
The groundwater within the waste dump was highly contaminated with hydrocarbons. After the relocation of the waste dump the treatment plant is operated as a permanent groundwater remediation system since 2004.

Result
First the groundwater is pumped through a sedimentation unit, where the clear water phase is diverted through sand filters and a liquid phase activated carbon unit. The sand filters are equipped with an automatic backwashing system and treated water which is stored for this purpose in a separate tank is used to the filters.

First the water runs through gravel filters (front), then through liquid phase activated carbon filters (back). All plant filters are equipped with connections for backwashing.

Contaminated water is intermediately stored in two 400 m^3 buffer basins and is pumped from there into another higher located basin to produce a potential gradient. Afterwards the water runs through four parallel gravel filters and two double-stage carbon filters. After groundwater flow-, pH- and conductivity-monitoring in the monitoring unit the tank for filter backwashing is filled and the excess water is diverted to the sewer.

The whole plant is equipped with an PLC- and a Visualisation-System. Via remote control it is possible to control and regulate process and program functions.

Water is pumped for the sedimentation basins, 400 m^3, into a higher located basin to build a potential gradient. Afterwards the water runs through filter and adsorption units.

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