

## CASE HISTORY

SEMICONDUCTOR  
SOLAR  
PHARMA  
POWER GENERATION  
FOOD & BEVERAGE  
PULP AND PAPER  
CHEMICAL  
OIL AND GAS  
MINING  
**AEROSPACE AND TRANSPORT**



# Aviation Component Manufacture Wastewater Treatment



## The Project

The manufacture of high quality components for the aviation sector necessitates the production of a range of wastewaters during the finishing processes that are required to meet particularly exacting requirements specified by the end users. This wastewater needs to be carefully and efficiently treated, removing all toxic content, before it can be discharged to our environment.

This particular multi-national client purchased a new treatment plant from H+E to replace one that had been supplied approximately 25 years previously. We provided Servicing and Technical support throughout that period and actually the plant operated very well. Unfortunately though, due to expansion of the factory, even though the plant was operating very well, replacement was unavoidable, so we were again contracted to provide the new facility.



Chemical Treatment Tanks

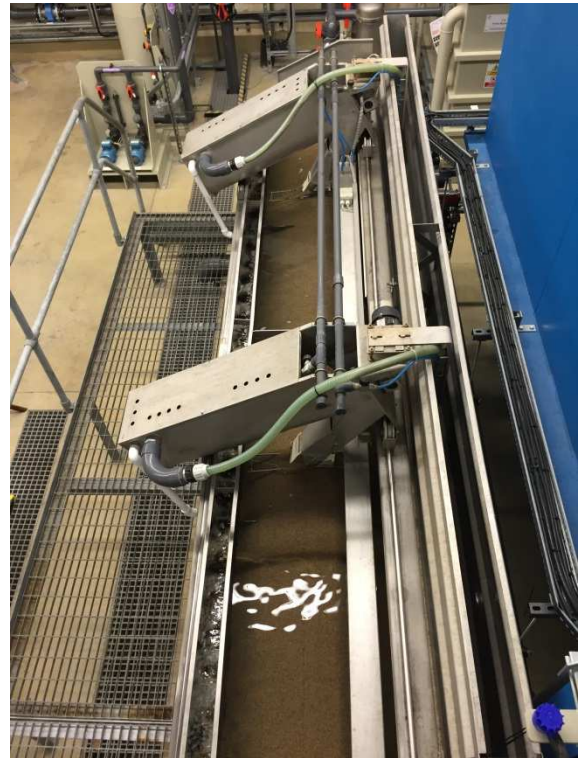
Since the original plant was built in the early 1990s, there have been some major developments in manufacturing techniques and also significant changes in what is considered acceptable.

This meant that, although the basic process steps in the new plant are the same as in the old one, the way in which some of them are accomplished is now very different.



## Process Steps

1. Effluent collection & transfer pumps from the various production areas.
2. Conductivity monitoring of each stream
3. Balance tank for chromium-containing effluent & plant feed pumps
4. Chromium reduction
5. Neutralisation and Flocculation systems
6. H+E Tube Settler
7. Sludge collection & partial dewatering tank
8. Sludge filter press system
9. TOVEKO Continuous gravity tertiary sand filter
10. Automatic recycling system for emergency use
11. Discharge flow and pH monitoring & recording
12. IBC Chemical storage & automatic dosing systems
13. Fully automated control system
14. Health & Safety equipment



Toveko Continuous Gravity sand filter

The effluent quality is monitored regularly, before, during and after the treatment process.

The Discharge Consent conditions from the Environment Agency are:

Parameter	Value
pH	6-10
COD	<1,000mg/l
Mercury	<50µg/l
Cadmium	<10µg/l
Copper	<0.5mg/l
Lead	<1mg/l
Chromium	<1mg/l
Nickel	<1mg/l
Suspended Solids	<400mg/l



Plant general view showing control system

## Overall Performance

The chromium concentration in the treated effluent is monitored very closely since this represents most of the toxic metals present. Typically the concentration in the discharged effluent is approximately 0.3mg/l. If it exceeds 0.5mg/l (50% of the limit), an alarm is raised so that a check can be carried out to ensure that all plant settings etc. are correct.

All alarms from the system are transmitted to the relevant people, including to mobile phones.

## On-going Service & Technical Support

H+E offers service and technical support to every client as standard. Our aim is to ensure that you remain satisfied with the operation of the system we provide for the duration of its life. As was clearly demonstrated in this case, the plant life is expected to comfortably exceed 25 years.

H+E ranks among the world's leading suppliers in the fields of: water & wastewater treatment, and energy efficiency. Based on its global presence, the **H+E GROUP** has completed projects in over 50 countries.



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