



## Wastewater Treatment for the Metal Finishing Industry

**NHE's Lancy Technology solutions provide a range of process and system configurations that meet the variety of wastewater challenges faced by companies – large and small.**

Every metal finishing shop is unique. They use different chemicals and generate varying liquid waste with metals and other contaminants. Each shop will have different waste treatment priorities arising from its own unique combination of product, specialisation, government regulation and economic factors.

A successful waste management system must be custom designed to address all the process characteristics and management priorities. An economical solution must combine this custom design with standard treatment equipment that works.

After gaining a thorough understanding of the customer's process, the features and benefits of each technology is evaluated. This stage is critical to ensuring that the waste treatment management system is designed to meet the customer's specific goals.

These goals may include the following:

- Compliance with discharge limits
- Sludge reduction / Waste minimisation
- Chemical Recovery
- Metals recovery
- Water recycle
- Reduced capital costs
- Reduced operating costs

Lancy wastewater treatment technologies are configured to address each metal finishing shop's specific objectives. Lancy uses a four step engineering process to accomplish this.

### 1. Define the Waste Problem

Lancy engineers prepare a detailed description of the metal finishing shops process with a hands-on site survey. This defines each process step, rinsewater flowrates, volume and frequency of dumps, and the concentration of chemicals and metals in rinsewater and concentrates.



- Solutions are scalable to your business and its wastewater challenges - small or large
- Low maintenance and operating cost
- Compliance with general and industry specific legislation
- Consultative approach that develops the optimum solution for your business

### Contact us



+44 (0)24 7625 3099



info@nhe.uk.com

A Norman Hay  
Company



[www.nhe.uk.com](http://www.nhe.uk.com)

## 2. Define the Waste Treatment Process

We analyse the survey data and combine the waste streams into compatible chemical categories for treatment. Often several alternatives are prepared with an economical analysis of each option for review with the customer.

## 3. Evaluate Treatment Technologies

Lancy evaluates the economics and expected performance of the waste treatment technologies. The goal is to get the system design right the first time by evaluating all the factors during design.

## 4. Integrate the Treatment System into Your Plant

During the site survey, we measure the area available for installing the equipment and survey the services required and access for equipment and supplies. We ensure our equipment will integrate into the plant processes to meet the customer's objectives.

## AUXILIARIES

### Chromium Reduction System

CRS chromium reduction system reduces hexavalent chromium to the trivalent state to allow for hydroxide precipitation.

The CRS system is fully equipped with one chemical reaction tank, mixer, pH and ORP controllers, chemical metering pumps and electrical control panel.

### Cyanide Destruct System

CDS cyanide destruct system provides complete destruction of cyanide by alkaline chlorination. CDS units are equipped with two chemical reaction tanks, mixers, pH and ORP controllers, chemical metering pumps and electrical control panel.

### Reaction System

RS two-step chemical reactions system provides for precipitation of heavy metal contaminants prior to solid/liquid separation.

RS units are equipped with tanks and all required mixers, pH and ORP controllers, chemical metering pumps and electrical control panels.

### pH Neutralisation System

PNS pH neutralisation system provides a final pH adjustment of treated effluent; PNS units are equipped with one pH neutralization tank, pH controller/recorder, chemical metering pumps and electrical panel.

### Chemical Feed Systems

Chemical feed systems provide a safe and effective way to deliver chemicals. These units are self-contained and are equipped with a tank, mixer, metering pump, piping and controls.

### Electroless Copper Ion Exchange System

ECIX system removes copper from complexed electroless copper rinsewaters including EDTA based solutions.



### Lead Resin System

LRS product processes tin/lead rinsewaters from printed circuit board manufacturing for removal of lead.

### TREAT-RESIST

TREAT-RESIST process treats spent photo resist stripper and developer solutions for simultaneous removal of metals and resist polymers.

### Filter Press

A filter press dewateres sludge and produces 35%-45% dry solids in cake form.

### Sludge Driers

Further dewateres filter press cake up to 80% dry solids.

### Pilot System

Small scale version of a Lancy Wastewater Management System for on-site pilot testing. Trailer mounted systems available.