

# **Technical Summary: Effluent Treatment, RO & Wet Scrubber Systems**

## **Introduction**

This document summarizes the environmental management infrastructure available at our electroplating facility, highlighting the advanced Effluent Treatment Plant (ETP), Reverse Osmosis (RO) and Wet Scrubber systems. These systems together ensure full compliance with Tamil Nadu Pollution Control Board (TNPCB) standards and demonstrate our capability to operate under Zero Liquid Discharge (ZLD) principles.

## **Effluent Treatment Plant (ETP)**

The Effluent Treatment Plant (ETP) is designed to handle up to 5.0 kilolitres of effluent per day arising from electroplating processes. The treatment involves chrome reduction, pH neutralization, sedimentation, and multi-stage filtration. The treated water meets TNPCB norms, with post-treatment characteristics including pH 6.5-8.5 and very low concentrations of heavy metals and suspended solids. The ETP ensures that process water is rendered safe for reuse or further polishing in the RO stage.

## **Reverse Osmosis (RO) System**

To achieve Zero Liquid Discharge, the facility integrates a two-stage Reverse Osmosis (RO) system. The first stage recovers high-quality permeate suitable for reuse within the process. The second stage treats the reject from the first, reducing water loss to an absolute minimum. The final reject stream is processed through an evaporator, ensuring that no liquid effluent leaves the site.

## **Wet Scrubber System**

A dedicated Wet Scrubber system is installed in the plating and furnace zones to manage air quality. The scrubber employs a packed polypropylene column where exhaust gases pass through counter-current water sprays that absorb fumes and particulates. This system ensures clean emissions and contributes to maintaining safe workplace conditions and compliance with air emission norms.

## **Environmental Commitment**

Together, the ETP, RO, and Wet Scrubber systems form an integrated environmental protection

network. Our facility follows a Zero Liquid Discharge approach, ensuring that all treated water is reused and all emissions are within prescribed limits. This reflects our continued commitment to sustainable manufacturing, environmental stewardship, and adherence to regulatory compliance.

*Confidential Summary - Public Domain Version (Technical Details Restricted)*