

# HOSPITAL & LAB

Sterilization and Disinfection of contaminated hospital and lab wastewater



## CASE STUDY

Hospitals, morgues and other sites that deal with waters contaminated with human organic matter and potentially **hazardous pathogenic contamination** typically do not process such waters prior to their disposal if the site is connected to municipal systems. If the site is not connected, treatment costs can reach thousands of euros per ton of effluent.

This creates several levels of risk for local populations and facility's staff.

- Workers at municipal facilities can fall ill if directly exposed to such effluents.
- Facility's staff, users and patients might be exposed to pathogenic viruses and bacteria.
- In certain cases the treatment environment at the municipal facility can actually promote growth of several viruses and bacteria, such as hepatitis.

As a result, the European Union is drafting legislation to mandate the treatment of such effluents at the source and eliminate this public health risk. Several European sites have already installed systems ahead of the regulation

### What do they do?

Traditional and still current approach is to containerize and outsource disposal of contaminated waters or send them to incineration or, although not legal, simply reject them together with sewage.

### What are they trying to achieve?

Eliminate any source of public health hazard for patients, workers and general population.



## SOLUTION

### TOTAL TREATMENT OF PATHOGENS

Ozone treatment achieves complete elimination of harmful bacteria and viruses - the most powerful oxidizer available

### COMPLETELY SAFE

Effluents are treated at room temperature and normal pressure, avoiding the cost and risk of a heated and under pressure process. The whole system is completely hermetic, with no contact between operators and effluents.

### LOW MAINTENANCE

Simple replacement of UV lamp every 5000 hours, general cleansing if running with long down times.

### SCALABLE, LOW-COST SOLUTION

Units for lab scale, on-site installation or full hospital scale on specific site areas; for the later, either standard models or customized systems if necessary.

Cheaper, much easier to operate (no steam requirements) and smaller than autoclave.

## RESULTS

Total elimination of hazardous pathogens – virus and bacteria – delivering safe waste water than can be handled in any common treatment plant. Overall waste water path from point of generation down to treatment plant will be safe for maintenance, manipulation, technical interventions and if any leak happens, no risk nor hazard will be spread amongst workers, patients, visitors and general population.

Results validated through independent world renowned virology research institution, setting a log4 reduction on MNV and HAoV with a real treatment device running in a real lab operation.



## DATA RESULTS:

### Inlet parameters :

COD – 40.000 mg/l  
TSS – 500 mg/l  
Flow – 2000 L/h

### Outlet parameters :

COD reduction between 90 and 97%  
BOD reduction between 89 and 99%  
O&G below 5 ppm  
Boro below 0,3 ppm  
Cu below 0,4 ppm  
Pb below 0.01 ppm  
Sn below 0.01 ppm  
Fluorine below 0.01 ppm  
Detergents below 1 ppm

# 99,9%

VIRUS AND BACTERIA  
REDUCTION

NO HEAT  
NO PRESSURE  
NO CHEMICALS  
NO HAULING  
NO MANIPULATION  
NO RISK

