

## WASSERCOMPETENZTAG 2008

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5th Water Competence Day, networking of competencies.

### Economic efficiency & benefit analysis

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### Complete planning

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### Water & Chemistry

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Suggestions and tips from the water professionals



## Editorial

Water experts today

**Z** The Water Competence Day took place for the fifth time at the beginning of 2008. This year, Ecolab Germany was the organizer. this event.

In 2001, the companies Kintec and WAL GmbH came up with the idea of a Water Competence Day. What began with a single customer, the ACCOR Group, became a regular event in subsequent years due to increasing demand. In 2008, invited guests and water experts from industry, gastronomy, and the hotel sector once again came together for a day to discuss the topic of water and the problems it poses in various areas of application. This year's event was hosted by Ecolab Germany and took place at the Novotel Munich City.

The Wasserfibel has also become an increasingly popular platform for all things water-related. In order to report on the latest developments in the industry in a timely manner, the print edition is now being supplemented by an online version. At [www.wasserfibel.com](http://www.wasserfibel.com), experts and interested guests can read about how water influences and accompanies our everyday lives and working world. Our readers can then quickly and easily access news, interviews, technical innovations, experience reports, and much more about water. The print edition will continue to report on water technology.

I hope you enjoy reading this year's Wasserfibel and find it informative.

Yours  
K. Klütsch



You can find this and other information on the topic of water in the current issue of the magazine "WASSERFIBEL - Welt des Wassers" (WATER ALPHABET - World of Water).

[www.wasserfibel.com](http://www.wasserfibel.com)

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# A HOT TOPIC TOPIC!



EVERYTHING FROM A SINGLE

SOURCE

CONSULTING  
PLANNING  
EXECUTION  
SERVICE

# Cost-effectiveness = costs & benefits

Report by Christoph Wohllaib, ACCOR Senior Buyer

## R Calculation example: Economic efficiency of a central water treatment plant preparation

Practical experience has shown that poor water quality leads to unsatisfactory rinsing results in terms of hygiene and appearance. This results in an enormous amount of time spent on re-polishing and high operating costs for cartridges,

chemicals, or repairs. Central water treatment significantly improves water quality, thereby reducing follow-up and operating costs at points of use (e.g., dishwashers, coffee machines, steam cookers, ice cube makers, etc.).

The following calculation example from a Mercure Hotel in Munich shows how the annual costs of a central treatment system compare

by stand-alone solutions with cartridges. **RESULT:** The measure paid for itself within one budget year. Just 10 months after the measure was introduced, the monthly cost savings amounted to 1,860 euros. Even if the estimated personnel and breakage costs are not taken into account, the payback period is 2.4 years. In the worst case, monthly cost savings of €570 are achieved after two and a half years.

### COST ACTUAL SITUATION

- Operating costs per annum	10,850.00
- Personnel costs for polishing p.a. (approx. 3 hours/day x 300 days x €15)	13,500 Euro
- Annual costs for replacement of breakage due to polishing approx.	2,000.00 euros
<b>approx. Total p.a.</b>	<b>26,350.00 Euro</b>

### WATER TREATMENT COSTS

- Water softening and osmosis system (central)	13,500.00
- Installation	3,000.00
<b>Total one-time costs</b>	<b>16,500.00</b>
+ Operating costs per annum	4,000.00

### SAVINGS

<b>Amortization period</b>	
$16,500.00 / 22,350 = 0.7a$ or	<b>9 months</b>
<b>Monthly savings</b>	
$22,530.00 / 12 \text{ months} =$	<b>1,860.00</b>

Excluding personnel and breakage costs

- Amortization date	
$16,500.00 / (10,850.00 - 4,000.00) = 2.4a$	

Source: Summary of a profitability audit for a Mercure Hotel in Munich.

Figures are based on a profitability calculation for a Mercure hotel in Munich.

## ACCOR standard water quality

Subject: Water quality at ACCOR hotels



Consumers	Required water quality
Rack conveyor dishwashers	Filling with (blended) soft water, cold, 0-3° dH (via water softener) Rinsing with (blended) osmosis water, cold, 0° dH, blended to a conductivity of 15-80 µS/cm
Universal/pot dishwasher	As pot dishwasher (blended) soft water, cold, 0-3° dH (via water softener) As cutlery dishwasher (cut) osmosis water, cold, 0° dH, cut to conductivity of 15-80 µS/cm
Glass washing machines	(blended) osmosis water, cold, 0° dH, blended to a conductivity of 15-80 µS/cm
Hot air steamers Ice cube makers	Aquamix blended water, see coffee machine, with conductivity up to 250 µS/cm salt content or 3-4° carbonate hardness Alternatively -> (blended) soft water, cold, 0-3° dH (via water softener)
Variocookers, bain-maries, cooking kettles	(blended) soft water, cold, 0-3° dH (via water softener)
Coffee machines	Aquamix blended water -> osmosis water, blended with soft water (blend at 250 µS/cm salt content or carbonate hardness of 3-4°) <b>AQUAMIX ONLY IN COMBINATION WITH KONZEPTSYSTEM BlauWAL!</b>

Soft water, cold, blended to 0-3° dH if necessary:

Softened to a hardness of less than 0.5° dH using a water softener and then blended to a residual hardness of 0 to 3° dH, depending on requirements.

(Reverse) osmosis water, cold, blended to a residual conductivity of 15-80 µS/cm:

Desalinated using a reverse osmosis system and blended with soft water to a conductivity of 15-80 µS/cm.

Aquamix blended water:

Desalinated using a reverse osmosis system and then blended in the Aquamix system, usually with soft water (alternatively with hard water), to a conductivity of up to 250 µS/cm or a carbonate hardness of 3-4° KH.



## Concentrated planning expertise

Report by Harald Schulz, planner

**H**arald Schulz works as a planner and swears by centralized systems for water treatment. comprehensive solutions.

In the course of my work as a planner, I have seen many water treatment plants, water stations, and similar facilities, from Eastern Europe to Saudi Arabia. It was relatively late that I came across the company KINTEC/WAL.

Since I was responsible for water treatment as technical director at ACCOR Hotels, I have come to particularly appreciate KINTEC/WAL systems. At that time, most

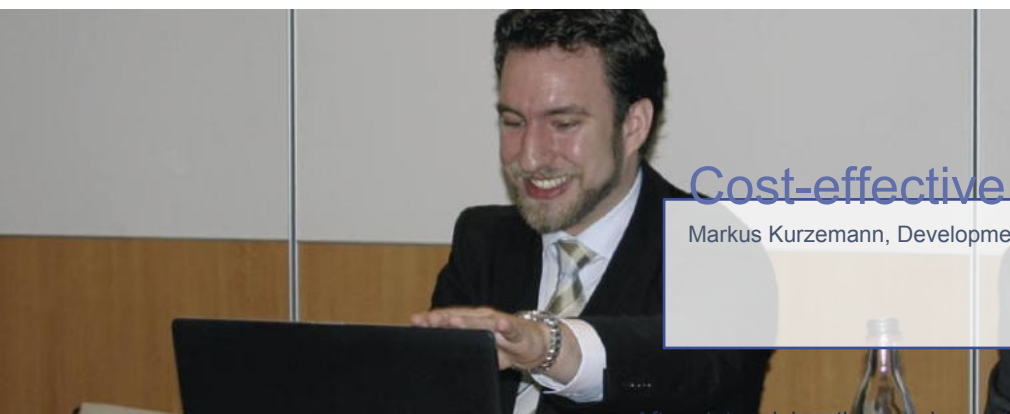
hotels had water treatment systems, but these were exclusively isolated solutions. Professionalization was needed. After several test runs with complete central systems in various hotels, it was clear that relying on a partner with a complete solution works and pays off.

Many people still do not attach enough importance to the topic of "water." However, good water treatment can save money and also significantly improve quality. The coffee tastes better and the glasses are cleaner. Stand-alone solutions with

cartridges make controlled treatment difficult, which is why there is considerable potential for savings and improvement here.

Water treatment is a complex process that requires the involvement of suppliers and manufacturers right from the planning stage. WAL and Ecolab are important interfaces here, helping to give the development a targeted structure.

Ever-increasing demands on treatment systems have made it necessary to further professionalize and specialize planning. Therefore, decisions made in the course of hotel operations should not be based on statements made by salespeople. Only professionals have an overview of the special process technologies involved in complex hotel operations.



## Cost-effective water treatment

Markus Kurzemann, Development Department, W.A.L., on the BlauWAL concept solution

**H**ighly cost-intensive decentralized systems with cartridges and smaller water softeners are often used for water treatment in order to meet the water quality requirements of the various consumption points. In contrast, the Novotel Munich City opted from the outset for a cost-effective and high-quality central solution.

After determining the requirements of the various consumers, a corresponding system consisting of a water softener, reverse osmosis system, blending, and permeate storage was put together. Regardless of consumption volumes and pressure fluctuations in the city water network, consistent water quality can now be achieved.

These experiences led to the development of the BlauWAL modular system for comprehensive supply in the hotel and catering industry. Thanks to its modular design, the system can be adapted in size and performance to different requirements. This also allows for subsequent expansions.

In addition, BlauWAL is constantly being optimized. A web-based monitoring, diagnosis, and control system is currently under development.

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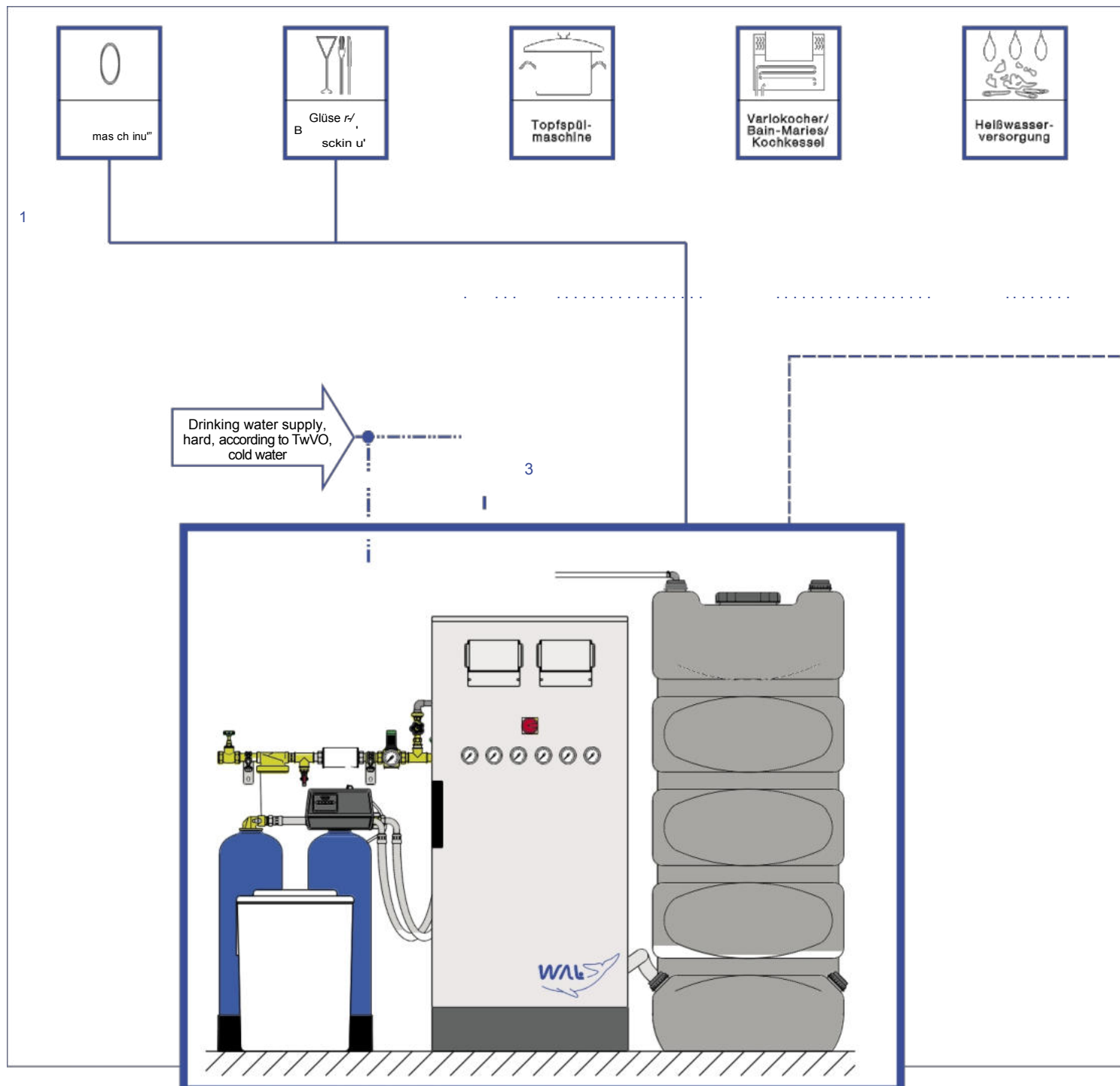
- CONTACT
- VIEWING APPOINTMENT
- CONSULTATION
- ACTUAL/TARGET SOLUTION
- BUDGET QUOTE

2

- OFFER PLANNING
- SUPPLY - CUSTOMER
- INTERFACE DEFINITION
- COORDINATION - PLANNING
- APPOINTMENT SCHEDULING

3

- DIRECT DELIVERY
- FREIGHT
- INSTALLATION
- COMMISSIONING
- TRAINING



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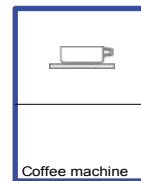
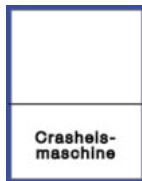
- SERVICE
- MAINTENANCE
- WARRANTY
- REPAIR
- SPARE PARTS

5

- SUPPORT / ASSISTANCE
- SAFETY
- PERFORMANCE
- ECONOMY
- BENEFITS

6

- QUALITY
- MADE IN GERMANY
- SYSTEM SOLUTIONS
- CONCEPT SOLUTIONS
- W.A.L. WATER SYSTEMS



2

1

- 1 For multi-zone machines, it may be useful/necessary to use several different water qualities. To optimize the rinsing result, partially desalinated UO water must be used!
- 2 Depending on the device. However, better results are achieved with AQUAmix mixed water!
- 3 Blending device for blending soft water and drinking water

	Partially desalinated UO water, 5..80 gS/cm Drinking water, hard
	Soft water, 0..3°dH
	AQUAmix mixed water, (partially desalinated/partially softened)
	Soft water, <0.5°dH

- › Corrosion-resistant pipes should generally be provided to supply individual consumers
- › The system can be adapted to local conditions

The basis for assessing the required treatment procedures is a water analysis of the drinking water (available from the local water supplier)

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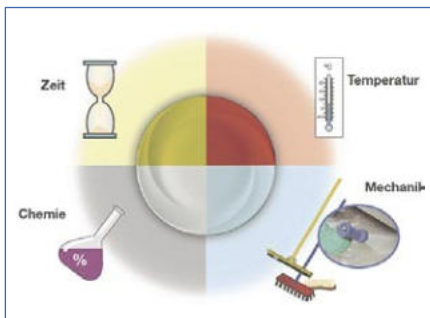
## Water & cleaning processes

Report by André Funke, Regional Technical Manager RD&E Institutional Central

**R**and 17.5% of daily drinking water consumption in Germany is used for cleaning. Water is the universal solution, dispersion and emulsifier.

The "Sinner's Circle" has always been used in technical literature to illustrate cleaning processes. According to this model, time, temperature, chemistry, and mechanics are key factors in cleaning processes that must always be kept in balance. For example, less chemistry requires a longer exposure time, higher temperatures, and more mechanics (see figure).

Due to the ecological and economic



advantages of water as a cleaning agent, industrial cleaning processes are often converted to this solvent. One example is wet cleaning

, a process in which laundry is gently cleaned using water-based detergent solutions. This process is ecologically sound and even superior to dry cleaning with

perchloroethylene (PER process).

Due to the diversity of the medium "water," its quality is of crucial importance for the cleaning results. Hardness formers can clog system components, which impairs the mechanical cleaning factor. Heating systems are insulated by limescale deposits, thus disrupting the temperature factor.

Finally, water quality is crucial for the use of chemical additives. The rule of thumb is that as the amount of hardness-forming substances and other water constituents increases, a higher addition of chemical substances is necessary to achieve good cleaning results.

Although hardness factors can be inactivated by chemical additives, the addition of such agents is not always economically or ecologically sensible. Technically, too, they are often unable to inactivate all critical water constituents, which means that, overall, the cleaning result may still be impaired.

In many cases, water treatment is a good alternative. Manufacturers of commercial dishwashers already specify a water hardness of 0–3°d for operating their machines.

However, the increase in corrosivity is often neglected in water treatment. By removing

Hardening of the water disturbs the natural calcium-carbonic acid balance is disturbed. Excess carbon dioxide can cause further calcium to be dissolved (calcium aggressiveness).

Carbonic acid can also react with iron or other metals and thus attack pipes, for example.

In addition, fully desalinated water has a very high affinity for dissolving substances. It is therefore important that system components such as pipes or pumps are made of certain plastics or resistant metals such as stainless steel. Unfortunately, copper and many copper alloys are not resistant enough.

If these material requirements cannot be met, for example in existing old systems, mixing the treated water with raw water helps. This significantly reduces the aggressiveness. The advantages of high water quality are largely retained in the cleaning process. Such mixing devices are already integrated into modern treatment plants, so that costly retrofitting is no longer necessary.

Both the cleaning agent and its concentration must be adapted to the technically treated water. Overdosing and incorrect product selection can lead to increased foaming. Reputable plant manufacturers can carry out appropriate water analyses and optimally adjust the water treatment plants.

# With EcoTemp®

Everything from a single source!



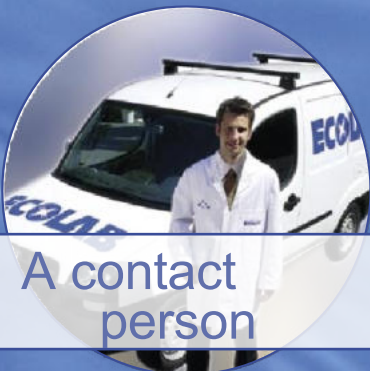
Service concept



Training



Products



A contact person



Sparkling dishwashing results

## ECOLAB®



Dishwasher and osmosis system

**Don't worry, we'll make sure your dishes come out sparkling clean!**

For further information about our EcoTemp carefree concept, please contact Mr. Engelbert Manzinger on 0172/6640779 or send an email to [engelbert.manzinger@ecolab.com](mailto:engelbert.manzinger@ecolab.com)

# Water check

For hotels and restaurants

## Is there a drinking and service water analysis available?

- Entire building or per consumer as required and in accordance with DIN standards

## Are there any problems, e.g., with limescale deposits (in/on)

- glass, cutlery, dishes, and dishwashers,
- steamers and steam cookers,
- Ice cube/crushed ice machines,
- coffee and tea machines,
- boilers & water heaters,
- bathrooms & wet rooms,
- aerators and shower heads?

## What is the hygiene and cleanliness (DIN) of glasses, cutlery, and dishes?

- Limescale and water stains on glasses
- Water stains – residues on cutlery
- Gray deposits – deposits on dishes

## Do cutlery, glasses, and other items need to be polished?

- Costs for polishing EURO/h = ?
- Costs for broken glass EURO/h = ?

## Are partial and full desalination cartridges in use?

- Costs in EUR: Purchase + service + results per month = ?

## Coffee machines with cartridges (among other things) and service?

- Costs in EUR: Expenses + service + etc. per month = ?

## Problems with building services, water/costs, etc.

- Pipes, mixing valves, fittings, pitting, rust, brown water, etc.,
- Legionella bacteria, climate, humidifiers/washers?

## Problems with installed water treatment systems?

- Centralized/decentralized systems (magnets, softeners, chemicals, dosing)

## Are you planning any changes in these areas?

- New construction, renovation, investments, repairs, and/or optimizations

## The complete solution EcoTemp

Report Evelyn Klütsch, Division Manager, Senior Citizen Assistance Officer, QMB at DWH

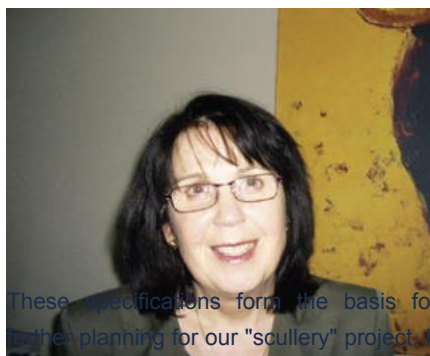
**Seniorenwohn , and Pflegezentrum "Am Hachinger Bach" in Taufkirchen, a review of all existing systems was conducted before and after the purchase of the "Eco-temp System" (osmosis glass washing soft water basket feed-through). systems and processes.**

The EcoTemp system from Ecolab has been in operation in the dishwashing area since November 1, 2002. During operation, we have found that the combination of water (osmosis) and glass washing has resulted in a significant improvement in quality at the individual washing station. Glasses and cutlery no longer need to be polished. Another advantage is the saving of two hours of work per day. After deducting the costs, we recorded savings of approximately 5,490 euros per year for an external employee and 1,840 euros per year for an internal employee. After deducting the rental and operating costs, we were able to generate a sum that we could use efficiently elsewhere in the kitchen.

The decision at the time to opt for the above-mentioned rental system was the right one and, given our high quality standards, is proving to be a considerable advantage today. After all, hygiene and cleanliness are top priorities in inpatient care for the elderly. The competent employees of Ecolab and W.A.L. also impressed us.

We keep the number of our suppliers as limited as possible and place greater emphasis on competent advice, support, and training for our employees—in Ecolab, we have found exactly the right partner.

Of course, Ecolab products are used not only in the kitchen, but also in the care sector. In light of the time and cost savings, we are considering equipping all our facilities with this system. Due to our certification (DIN ISO 9001: 2000), Ecolab products are already used in our other facilities. Ecolab has already drawn up hygiene plans in accordance with quality management requirements.



These specifications form the basis for further planning for our "scullery" project. It is essential to focus on water quality and energy balance. In addition to *personnel* costs, this will be the cost factor of the future.



# IMPRESSIONS

Water Competence Day 2008



# Partnership throughout Germany.

Ecolab Deutschland GmbH and KINTEC® / WAL GmbH



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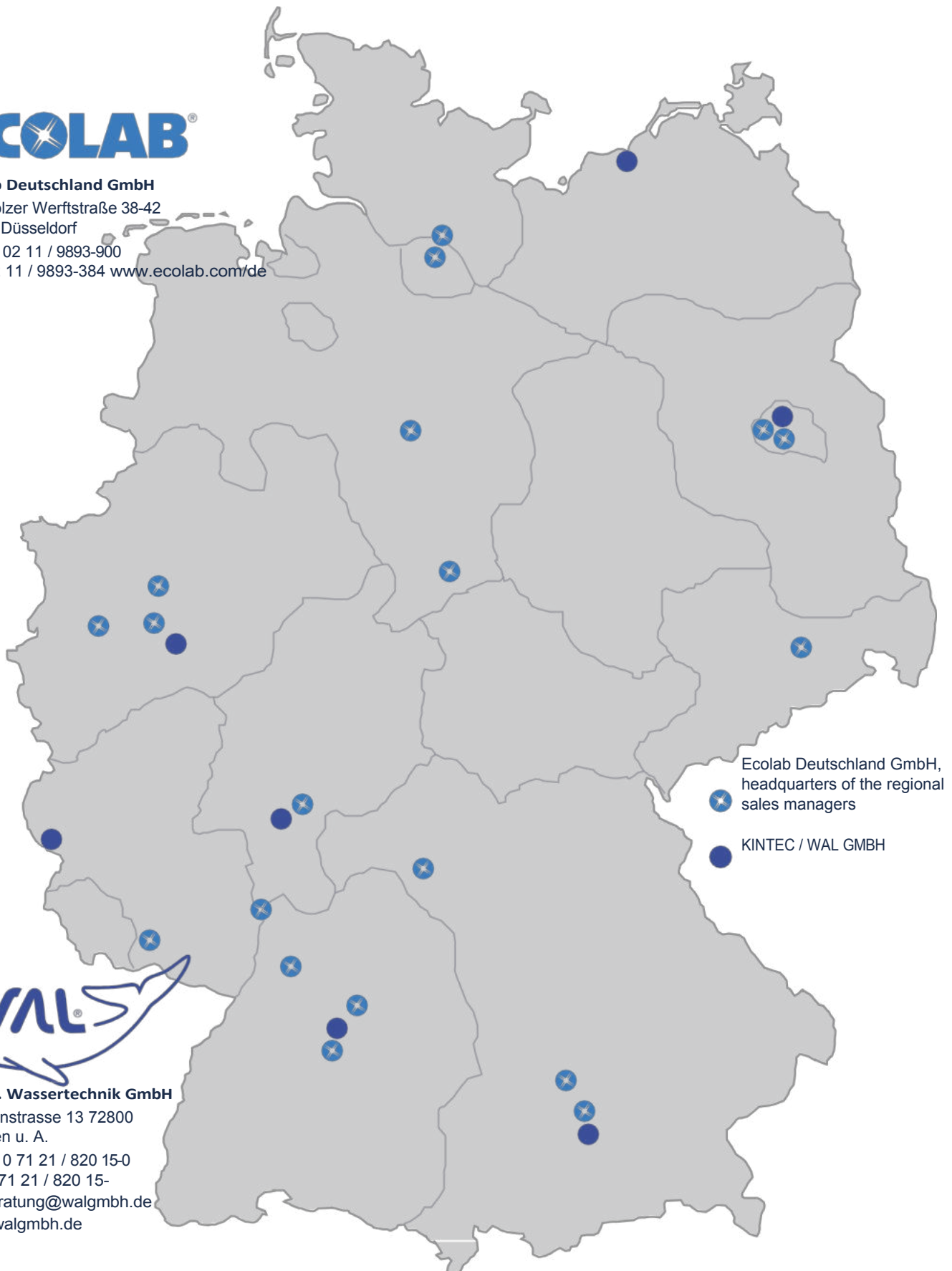
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