

Pollution Prevention and Water Management

Why is A&B dedicated to this new field of activities?

Water is an essential utility in dairy, beverage and food processing plants. Its resources are not unlimited and the cost of procurement is growing steadily.

Wastewater is the inevitable by-product of this use and is becoming a major concern. The economical impact keeps increasing. Extremely stringent regulations may even jeopardize the viability of some food plants or put restrictions on their growth.

When considering the combined costs of:

- water procurement
- cleaning, heating and cooling energy
- chemical cleaners and sanitizers
- wastewater treatment or disposal

Many a plant manager is in for a surprise. Even though all these costs stem from the use of water, they are usually scattered into different accounts and the economical impact of water usage is somewhat underestimated.

At A&B our goal is to help you implement appropriate control measures and technologies to markedly reduce these costs. We always insure that return on investment remains within the 2 years payback range or less.

Our approach emphasizes:

- Knowledge via extensive audits
- Pollution Prevention and
- the 5”R”s:
 - reduce: find ways of reducing the usage and/or the amount generated
 - recycle: return to the point of origin to use again to the same purpose
 - reuse: use again to another purpose
 - regenerate: treat chemically or physically to reuse or recycle
 - revalue: treat chemically, physically or biologically to generate added value by-products

Audits

No action can be taken unless the situation is well known and all parameters properly assessed. A&B offers extensive audits to clearly define all costs parameters. We can either take charge of conducting the whole audit or coach you employees. Each proposition has its advantages. We shall be glad to discuss the strategic approach with you.



Typical audit intent is to clearly identify all origins and related volumes of water used in the plant, the fate of this water as it is being used and the consequences of this usage. We determine the cost of procurement for each available water stream: municipal, wells, surface, recovered COW etc. For instance, we calculate the operating and maintenance costs of pumping stations and relate these to the volume of water pumped. We also consider the costs consequences of shortage if this is an issue. Then, for each department in the plant we have to establish the fate of water streams:

- **Cleaning and sanitizing**
CIP and CIP procedures are carefully analyzed. We determine the cost of water, energy, chemicals cleaners and wastewater generated. At this point it may be necessary to sample cleaning wastewater to determine COD, TSS, Phosphorus and any other parameter that has a cost impact.
- **Conveying and lubricating**
We establish volumes used, soil load after use, chemical lubricants usage if applicable.
- **Heating and cooling**
Volumes used and temperatures before and after usage, lost amounts, treatment costs if any.
- **Finished products**
Volumes used and treatment costs if any.

It is also appropriate to determine the wastewater volume and soil load directly related to production, separators de-sludge or products losses for instance.

We establish the flow diagram of the water through the plant including the following cost related information: volumes, energy, chemicals, wastewater soil load.

Results are double checked as much as it is possible to do so.

Pollution Prevention Initiatives and Technologies

At A&B we consider that food plants wastewater is constituted of valuable raw materials sent to the wrong place: the sewage system. Hence our preventive approach as opposed to more traditional end of pipe treatments.

Water usage control

It is not enough to read the plant's only water meter daily. A&B will either design and implement a complete water usage monitoring system or integrate it into available PLC. A network of water meters strategically located in the plant will provide factual data to the system. Information will be immediately provided in cases of deviation from established standards to allow quick reaction to any abnormality in the plant's operation.