



**SUSTAINABLE WATER SOLUTIONS**

## **Water System Audit Process**

A consultant from Capture H<sub>2</sub>O, Inc will visit your facility and perform a comprehensive water audit. The goals are to assess the current usage of water and identify opportunities to reduce consumption and discharge to the sewer. Opportunities may also include reductions in energy, fuel and maintenance costs. The process will consist of 3 phases;

1. The Preliminary Audit
2. Data Collection and Water Balance
3. Detailed Project Scope and Implementation Plan

The first phase will require a 4 hour site visit from Capture H<sub>2</sub>O plus 6 hours for report generation. The second phase will require an 8 hour site visit from Capture H<sub>2</sub>O plus 16 hours for data collection and report generation. The final phase may involve engagement from a mechanical engineering firm to assist with engineering design. During each phase, we request an escort through the facility by a knowledgeable facility engineer. The phases are designed to identify the opportunities and provide support throughout implementation.

### ***Phase One - The Preliminary Audit***

The goal of the first visit is to conduct a high level review of the following systems:

- HVAC systems (central plants, cooling towers, chillers, roof-top units, packaged systems, closed loops, AHU's, etc.)
- Reverse Osmosis systems
- Water softeners and De-mineralizers
- Boilers
- Steam and condensate system
- Domestic water systems (toilets, faucets, sinks, showers and urinals)
- Steam generators, auto-claves and sterilizers
- Wastewater systems
- Chemical water treatment programs on any of the above systems

Each of these systems will be assessed for water efficiency. As most facilities do not have unit level water usage data available, consumption will be estimated based on the operating data that is available. However, as part of this survey, Capture H<sub>2</sub>O will recommend water meters and data collection on key systems.

The deliverables from the preliminary audit are the following:



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1. A high level assessment of the water consumption of each system
2. A list of potential conservation projects
3. An analysis of the existing water treatment programs
4. Identification of systems in need of water meters and data collection

A summary report will be delivered within 2-3 weeks after the initial visit. The results will be presented via WebEx video conference. An outcome of this meeting will be a list of the priority projects and areas requiring more concentrated data collection. Simple projects will be implemented after this phase. Capture H<sub>2</sub>O will support the site level engineers with water meter sourcing, installation and data collection.

### ***Phase Two – Data Collection and Water Balance***

The goals of this phase are to capture and analyzed the unit level water consumption in order to formalized conservation projects. This phase provides concentrated effort on priority projects that require detailed data collection and analysis. Job walks with contractors may also be incorporated into this visit when appropriate. The deliverables from this phase are the following:

1. A water balance
2. Baseline of water treatment programs versus industry best practices
3. A list of the priority projects and financial analysis

A summary report will be delivered within 2-3 weeks after this site visit. The results will be presented via WebEx video conference. An outcome of this conference will be an agreed upon plan for priority project implementation.

### ***Phase Three – Detailed Project Scope and Implementation Plan***

The goals of this phase are to provide detailed project scope and implementation plans. Meeting and job walks with engineering firms and contractors will be conducting during this phase. The deliverables from this phase are the following:

1. Project Scope of Work
2. Project financial analysis and detailed implementation plan

A summary report will be delivered within 2-3 weeks after this phase. In addition, a WebEx video conference will be hosted to review this report.

### ***Data and Information Required Prior to Water Audit***



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The more detailed information provided upfront results in a more efficient and detailed audit results. We recommend purchasing and installing mechanical contacting head pulse meters on each system and one Meter Master Model 100EL for the site prior to the initial visit. Only one of these is required since it can be moved around and attached onto the individual meters. These meters and data loggers will also be used to validate the results of the projects.

The following information is requested prior to the first site visit:

1. Facility level annual water, energy and fuel consumption and cost data
2. A copy of the most recent utility bills
3. Unit level annual water, energy and fuel consumption data (if possible)
4. Equipment lists and schedules (e.g. boiler, chiller, RO, Sterilizers, RTU, etc)
5. List of installed water meters

### ***Other Services Available***

- Water treatment bid scope development
- Performance validation
- Recycled water conversion support

### ***About Capture H<sub>2</sub>O***

Over 21 years experience with commercial and industrial water systems. Expertise in both chemical and physical water treatment for all types of water systems. This includes process equipment systems, traditional chemical water treatment and new sustainable water treatment technologies. Certified LEED Green Associate with the United States Green Building Council.