Water & Laundry Facts

- Earth is 80% Water - 1% Drinkable: 97% Salt Water, 2% Glacier
- United Nations: Over 5.5 billion Will Not Have Safe Drinking Water by 2025
- Today: 1.1 Billion Worldwide do not have safe water.
- EPA: 36 States By 2013 – Water Shortages
- World Bank: Fresh Water Wars in 21st Century
- Avg Household Uses 250,000 Gals/Yr
- Laundry Generates the Largest Single Waste Water Source that is sent to the Waste Water Plant
- Largest Laundry Operation Uses ½ Billion Gals /Yr
- U.S. Laundries use over 1,500 Billion Gallons per year
- Annual Global Laundry Water Consumption is at Least 10 Times that of U.S
Worldwide Fresh Water Availability Today

Compounded By Population Growth & Infrastructure Needs
(Through 2020)
Water Resources

• Fresh water supplies are limited
• Many water sources are contaminated
• Water demand is growing
• Industries are challenged to reduce water consumption and reduce sewage discharge

Energy Availability and Environmental concerns

• Dependency on foreign energy
• Limited to energy resources in U.S. if global political landscape changes
• Fear & awareness of Global Warming
• Industries are challenged to reduce energy consumption and release of Green House Gasses, (GHG’s)
CNN Video

AquaRecycle Story

- Founded in 1998, Marietta GA Based
- 100 + Systems Worldwide
- SALA and Caribbean System sites: St Thomas, Tortola, Santiago, Cancun, Mexico City, Lima, San Juan
- Over 2 Billion Gallons Recycled to Date
- Healthcare, Correctional Industries are also served

www.aquarecycle.com
AquaRecycle Technology For Laundry Water & Energy Recycling

- Produces Clean Water
- Captures All Waste Water
- 80% Reduction in Water Consumption and Sewer Discharge
- Recycles all Available Laundry Water
- Removes all contaminants (oil and grease, chemicals, TSS & BOD)
- All water is disinfected with Ozone & UV
- Low Pressure Pumps – Low Energy Consumption – Tiny Carbon Footprint
- Can Operate as final rinse water and works well in CBW operations

www.aquarecycle.com

AQUARECYCLE PREMIUM RECYCLE SYSTEM PROCESS FLOW DIAGRAM

- Recovers 80% Of laundry Waste Water
- Recovers 50% Heat Energy
- Has Surge Flow Capacity in Supply Tank
Laundry Water Recycling Case History: San Juan Marriott Resort and Stellaris Casino

• Annual Pounds Processed: 3 million
• Annual Gallons Used: 9,000,000
• Projected Payback: 12 months ROI: 93%
• Annual Water, Sewer and Energy Costs: $226,405
• Projected Annual Savings: $143,783 or 63.5% of Costs
• Actual 2009 Savings: $142,003 or 98% on projection
### Cost Breakdown Analysis

**Carded Water Costs**

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Meter Rental</td>
<td>$425.00</td>
</tr>
<tr>
<td>Water and sewer use per thousand gallons</td>
<td>$1.38</td>
</tr>
<tr>
<td>Metering Water and Sewer Costs</td>
<td>$85,952.59</td>
</tr>
</tbody>
</table>

**Projected Water Savings with Equipment**

<table>
<thead>
<tr>
<th>Item</th>
<th>Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annualized Water and Sewer Savings</td>
<td>$7,044.28</td>
</tr>
<tr>
<td>Recycle Rate</td>
<td>2,000</td>
</tr>
<tr>
<td>Recycle Rate</td>
<td>7,044.28</td>
</tr>
</tbody>
</table>

**Carded Energy Costs**

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected Water Savings</td>
<td>$7,044.28</td>
</tr>
<tr>
<td>Total Energy Savings</td>
<td>$7,044.28</td>
</tr>
<tr>
<td>Total Annual Savings</td>
<td>$17,360.00</td>
</tr>
<tr>
<td>Annual Water Use &amp; Reuse Agreement</td>
<td>$17,360.00</td>
</tr>
<tr>
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<td>$17,360.00</td>
</tr>
<tr>
<td>Annual Water Use &amp; Reuse Agreement</td>
<td>$17,360.00</td>
</tr>
<tr>
<td>Total Equipment Cost</td>
<td>$190,000.00</td>
</tr>
<tr>
<td>Savings in Equipment</td>
<td>14.4%</td>
</tr>
<tr>
<td>Return on Investment</td>
<td>8.7%</td>
</tr>
</tbody>
</table>

### Equipment Capacity Calculation

<table>
<thead>
<tr>
<th>Type of Equipment</th>
<th># of BLM</th>
<th># of TBM</th>
<th><strong>SFM</strong></th>
<th><strong>TPM</strong></th>
<th><strong>TPM</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Blower / Extractor</td>
<td>13</td>
<td>7</td>
<td>7.45</td>
<td>92.45</td>
<td>52.45</td>
</tr>
<tr>
<td>Blower / Extractor</td>
<td>10</td>
<td>1</td>
<td>4.05</td>
<td>40.50</td>
<td>4.05</td>
</tr>
<tr>
<td>Blower / Extractor</td>
<td>10</td>
<td>1</td>
<td>4.05</td>
<td>40.50</td>
<td>4.05</td>
</tr>
<tr>
<td>Blower / Extractor</td>
<td>10</td>
<td>1</td>
<td>4.05</td>
<td>40.50</td>
<td>4.05</td>
</tr>
</tbody>
</table>

**Total Capacity**

<table>
<thead>
<tr>
<th><strong>SFM</strong></th>
<th><strong>TPM</strong></th>
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</thead>
<tbody>
<tr>
<td>56.40</td>
<td>56.40</td>
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</table>

### System Cost Analysis

<table>
<thead>
<tr>
<th>Equipment Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>All-in-one Package Laundry Wash-Water Recycle System</td>
<td>$120,520.00</td>
</tr>
<tr>
<td>Material Installation and set Out of Pocket Costs</td>
<td>$20,900.00</td>
</tr>
<tr>
<td><strong>Total System Cost</strong></td>
<td>$141,420.00</td>
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</table>
### Monthly Savings Report

<table>
<thead>
<tr>
<th>Date</th>
<th>Water Saved</th>
<th>Energy Saved</th>
<th>Total Savings</th>
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<tbody>
<tr>
<td>2023-01-01</td>
<td>500 liters</td>
<td>100 kWh</td>
<td>$250</td>
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<tr>
<td>2023-02-01</td>
<td>450 liters</td>
<td>90 kWh</td>
<td>$225</td>
</tr>
<tr>
<td>2023-03-01</td>
<td>400 liters</td>
<td>80 kWh</td>
<td>$200</td>
</tr>
</tbody>
</table>

### Competitive Advantage of AquaRecycle vs. other Technology Options

- **Ozone** (Energy, No Water)
- **Heat Exchanger** (Energy, No Water)
- **Hot Water Reuse** (Some Energy, Some Water)
- **Rinse Reuse Systems** (No Energy, Some Water)
- **Nano-Filtration / RO** (Some Water, Some Energy, High Electrical Use)
- **Ceramic Membranes** (Some Water, Some Energy, Electrical Use)
- **AquaRecycle System** (High Water, High Energy, Low Electrical)

AquaRecycle also provides triple disinfection as well as the best practices of environmental responsibilities.

Visit [www.aquarecycle.com](http://www.aquarecycle.com) for more information.
• Thermal Energy Recycling Technology for Laundry Dryer Systems
  – Acts as a Heat Exchanger With Patent-Pending Process that takes Dryer Exhaust and reintroduces the Heat from it to the Incoming Air to Dryer
  – Captures Up to 50% Energy Savings in Dryer Process
  – Reduces Drying times by up to 25%

www.aquarecycle.com

How ThermalRecycle Works

• Capture Dryer Exhaust Through Thermal Heat Wheel
• Heat Wheel Pre-Heats Incoming Dryer Air
• Hot Air is Brought into Dryer Lowering the Burner Run Time
Return on Investment

• Typical 300 Room Hotel
• 70% Occupancy/17-Lbs Occ Room
• 1,300,000 pounds
• 847,000 lbs at 65% Dried
• 2-120-150/lb dryers
• Natural Gas Delivered $9.00 Dkthm
• Payback is 26 months
• 44.7 ROI

• Potential for 2 Dryers on Single Unit

Proven Results

<table>
<thead>
<tr>
<th></th>
<th>With Thermal</th>
<th>AVG Loads</th>
<th>With Thermal</th>
<th>AVG Loads</th>
<th>Without Thermal</th>
<th>Without Thermal</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td># Loads</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Sheets</td>
<td>3</td>
<td>177,400</td>
<td>295,600</td>
<td>1</td>
<td>117,300</td>
<td>596.5</td>
<td>290.70</td>
</tr>
<tr>
<td>Towels</td>
<td>4</td>
<td>607,900</td>
<td>759.9</td>
<td>6</td>
<td>1,813,560</td>
<td>1,511.3</td>
<td>751.40</td>
</tr>
</tbody>
</table>
Conclusions

- Proven Laundry Water & Energy Recycle Technologies are available to the Commercial Laundry Industry Today
- Such systems can save SUBSTANTIAL amounts of WATER, ENERGY & MONEY for these Laundry Operations
- At Present it is estimated that less than .1% of the 1500 Billion Gallons of Commercial Laundry Water generated in the world today is recycled leaving significant opportunity for Recycling
- Recycle Technology Choice Depends on the Specific Application, Sustainability, and Economic Goals
- Water Recovery, Energy Consumption, Energy Savings, Disinfection, and Reduced TSS, & BOD / Toxin Discharge are Important Considerations in this Technology Choice. AQUARECYCLE & THERMALRECYCLE INCLUDE ALL OF THESE POSITIVE ATTRIBUTES & CAPTURE THE RESULTING BENEFITS OF EACH

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  - Milton.flores@aquarecycle.com