



# HEALTHCARE FACILITY ENERGY SAVINGS SURVEY

PUR-O-ZONE Low Temperature System includes products from Integra's Total Impact Program. TIP received the EPA's first Design for the Environment Institutional Laundry Program partnership.



## LOW TEMPERATURE LAUNDRY SYSTEM AUDIT

PUR-O-ZONE LAUNDRY AND WAREWASHING DIVISION

Case Study: June 2006 to June 2007

Facility: 108-bed assisted living and nursing care facility, located in Lawrence, Kansas

Reducing energy use doesn't just help your facility become greener, it also reduces overhead. Using the PUR-O-ZONE Low Temperature Laundry System allows a Lawrence facility to turn their water heaters down from 180 degrees to 150 degrees. That results in a substantial savings in gas energy. (See the reverse for the detailed documentation of savings.) Then, using oxygen bleach allowed this facility to combine the wash and bleach cycles. That change eliminates from 7 to 13 gallons of water **per load**, generating additional savings in water and the gas energy to heat it as well as the electricity to run separate cycles.

Items	Documented Savings per Load
Sheets and Whites	\$1.88
Kitchen Towels	\$1.54
Mops	\$1.54
Isolation	\$1.39
Bed Pads	\$1.18



Representative of a number of similar customers PUR-O-ZONE is helping launder greener and smarter with low-temp.

	Personals Colors	Sheets, Whites	Pads and Towels	Kitchen Towels	Isolation	Mops
Mo. Avg.	31	59	72	9	25	8
Monthly Savings	*	\$110.92	\$84.96	\$13.86	\$34.75	\$12.32
Yearly Savings	*	\$1,331.04	\$1,019.52	\$166.32	\$417.00	\$147.84
* Personal clothes are never run at 160 degrees						
Total Monthly Savings: \$256.81						
Facility Total Yearly Savings: \$3,081.72						

The use of mild, enzyme-based detergents has reduced lint fallout and linen replacement costs. Using oxygen bleach eliminated ruined laundry from incorrect formula selection or improper sorting. Another pick up: the results are better. The facility director states, "The laundry looks the best it ever has."

**Ancillary Savings** – The facility director estimated the reduction in linen replacement costs has been even greater than the energy savings from the PUR-O-ZONE Low Temperature System.

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# AUDIT RECONCILIATION, PROOF

(ALL TEMPERATURES FAHRENHEIT)

Facility Natural Gas Cost = \$6.20 per dekatherm, which equals 100,000 BTU's

Also expressed as .000062¢ per BTU

Multiply gas cost/BTU by heater efficiency. Facility Water heaters are 85% efficient.

$.000062 \times .85 = .0000713\text{¢}$  per BTU

Subtract incoming water temperature from final temperature to find temperature rise (TR)

$140^{\circ} - 60^{\circ} = 80^{\circ}$  TR

$150^{\circ} - 60^{\circ} = 90^{\circ}$  TR

$160^{\circ} - 60^{\circ} = 100^{\circ}$  TR

$180^{\circ} - 60^{\circ} = 120^{\circ}$  TR

Water weighs 8.34 lb/gallon and requires 8.34 BTU to heat it one degree

Multiply TR by 8.34 to find BTU/gallon

Multiply BTU/gallon by cost/BTU to find cost per gallon

$8.34 \times 80 = 667$  BTU/gallon  $\times .0000713 = .05\text{¢}$ /gallon for  $140^{\circ}$  water

**$8.34 \times 90 = 805$  BTU/gallon  $\times .0000713 = .057\text{¢}$ /gallon for  $150^{\circ}$  water**

$8.34 \times 100 = 834$  BTU/gal  $\times .0000713 = .06\text{¢}$ /gallon for  $160^{\circ}$  water

$8.34 \times 120 = 1000.8$  BTU/gal  $\times .0000713 = .07\text{¢}$ /gallon for  $180^{\circ}$  water

**PUR-O-ZONE color-safe oxygen bleach is added directly to the wash water without draining the machine. This saves the following amounts of water per load:**

Sheets and Whites: 13 gallons (.91¢/load gas, .30 water)

Kitchen Towels: 11 gallons (.77¢/load gas, .25 water)

Mops: 11 gallons (.77¢/load gas, .25 water)

Isolation: 10 gallons (.70¢/load, .23 water)

Bed Pads: 7 gallons (.49¢/load, .16 water)

**Cost difference per load, temperature only:**

Sheets and Whites: .67¢/load

Kitchen Towels: .52¢/load

Mops: .54¢/load

Isolation: .46¢/load

Bed Pads: .53¢/load

**Total Energy cost savings per load and formula compared to a conventional high-temperature system:**

Sheets and Whites: \$1.88 per load

Kitchen Towels: \$1.54 per load

Mops: \$1.54 per load

Isolation: \$1.39 per load

Bed Pads: \$1.18 per load

	<b>F1</b> <i>Personals, Colors</i>	<b>F2</b> <i>Sheets and Whites</i>	<b>F3</b> <i>Pads and Towels</i>	<b>F5</b> <i>Kitchen Towels</i>	<b>F5</b> <i>Isolation</i>	<b>F6</b> <i>Mops</i>
<b>Mo. Avg.</b>	31	59	72	9	25	8
<b>Mo. Savings</b>	--	\$110.92	\$84.96	\$13.86	\$34.75	<b>\$12.32</b>
<b>Yearly Savings</b>	--	\$1,331.04	\$1,019.52	\$166.32	\$417.00	<b>\$147.84</b>
<b>Total Monthly Savings: \$256.81</b>						
<b>Total Yearly Savings: \$3,081.72</b>						

**Notes**

All of the above data refers to gas energy savings on the heating of water.



*PUR-O-ZONE is a manufacturer of cleaning and finishing agents, and a distributor of floor care equipment and chemistry, paper products, facility infection control and cleaning, pool and spa care, laundry and kitchen ware washing, foodservice items, no-touch cleaning, and restroom automation. Located in Lawrence, Kansas, since 1943, we have been committed for six and a half decades to the use of education for maximizing achievement in all areas of facility care. We are committed to increased knowledge and use of cleaning methods and products that protect health and facilities both today, and for a sustainable future.*

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

800-727-7876

**PUR-O-ZONE**

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