



# IceCOLD®

CASE STUDY



# IceCOLD® Performance Test Results

Prepared for: **STMA Board of Directors**

June 16, 2009

Proposal number: STMA – 001



## Executive Summary

### Objective

The study's objective is to substantiate the performance claims made by **IceCOLD® Green Technology** regarding energy savings derived from the installation of the product in A/C and refrigeration systems. In over 1200 installations spanning an 8 year period, the average **IceCOLD®** related energy savings has been 23%. Numerous factors impact the energy savings realized - these include the age and working condition of the systems as well as the unique physical demands of the operating environment.

### Methodolgy

The unit selected for the test was located at the Riverwalk Market and Deli. The market's location is 126 E. Houston St, San Antonio, Texas. The unit tested was a 4.5-ton Carrier unit in good working condition. As previously discussed with the Board, **IceCOLD®** utilizes the industry standard **AC and refrigeration OEM protocols for all pilot tests**. The methodology highlights include:

- Installation of a HOBO data logger - the device registered the unit's amperage, incoming and outgoing vent air at 90 second intervals;

- The data logger was attached and allowed to run for a 7 day period to establish a pre-installation performance baseline;

- IceCOLD®** was installed and allowed to interact with the system for 7 days - the data logger was inoperative during this period;

- The data logger was re-engaged and allowed to run for a 3rd week - the time-frame being identical to week one;

- The post installation performance data was captured last Friday, June 12th, and the data logger was removed...

### Results

The data was analyzed personally by David Pickett, inventor of **IceCOLD®**. Specific aspects of the performance test data include:

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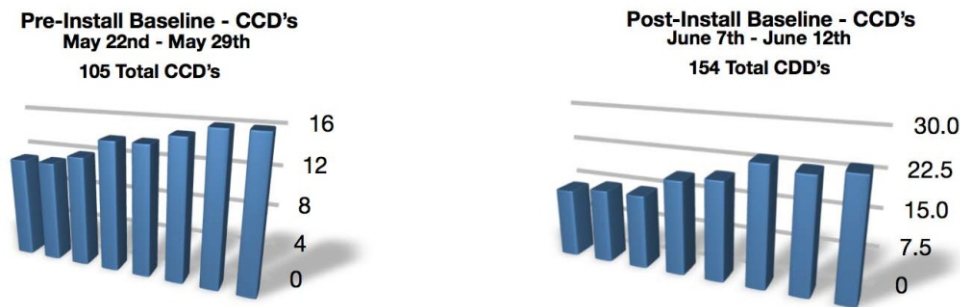
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- I. The pre and post installation performance data indicates the system used 0.1% less

electricity after the IceCOLD® treatment;

- II. The CCD's [cooling degree days] were 41.3% hotter in the post-install week as opposed to the pre- install week;



- III. The total improvement in system efficiency and electricity cost savings is 41.4%
- IV. These superior results are directly impacted by STMA's rigorous operating environment:

Front door is constantly being opened in a market climate with an average annual RH of 76.5% and annual temperatures with the following monthly averages:

Average Temperature by Month (°F)												
Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
50.4	53.9	60.6	68.3	74.5	80.4	82.6	82.3	78.2	69.6	61.0	53.5	

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heat generation from indoor fluorescent lighting, refrigeration units, coolers, Icee® machines, microwaves, coffee makers etc.

IceCOLD® excels in improving heat exchange

## Financial Assumptions

A general planning number for HVAC operations is \$50.00 per ton per month. Assuming the average STMA location has 20 tons of A/C capacity, this would equate to a monthly A/C electricity bill of \$1000. A 41.4% savings would subsequently deliver approximately \$400.00 per month in energy savings.

The MSRP for the IceCOLD® investment is \$80.00 per ton. For a typical 20-ton installation, this would equate to a \$1600.00 investment per retail location. A \$400.00 per month savings would deliver a 4-month payback and an annualized ROI of 300%. In addition, since IceCOLD's® savings mechanism is derived from reduced runtimes, there are additional "soft cost savings" from deferred MTBM [mean time between maintenance] and system replacement costs.

In addition, the catalyst's are dynamic in nature - this means the savings are perpetual since units do not have to be retreated for the duration of the unit's performance life. The only exceptions are 1) if the coils are replaced or 2) the compressor oil is lost due to malfunction or a breach in structural integrity.

Even if we assume the average historical savings average of 23%, IceCOLD® would still deliver an annual energy savings of \$5, 520,000 to STMA!!!

## Installation Plan and Considerations

We understand the STMA network includes 2000 retail establishments with the following location densities: 1) Houston 1200 locations, 2) San Antonio 500 locations and 3) Austin 300 locations. We have (2) installation options:

### Option 1: STMA Installation:

- STMA store owners contract with their own local HVAC technician for install

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- IceCOLD® delivers product to designated STMA locations for distribution;
- IceCOLD® will provide local on-site training by geographic region - installation kits will be

distributed at time of training to licensed HVAC technicians;

## Option 2: IceCOLD® Installation:

- IceCOLD® will provide overall project management and installation services for \$447.00 per location - 25 ton maximum



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