



DEPARTMENT OF TOXIC SUBSTANCES CONTROL  
REVIEW OF THERMOSTAT RECYCLING CORPORATION'S  
2015 ANNUAL REPORT FOR CALIFORNIA

November 2016

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On March 30, 2016, the Department of Toxic Substances Control (DTSC) received Thermostat Recycling Corporation's (TRC) "Thermostat Recycling Corporation California State Annual Report FY 2015" (2015 Annual Report). The following represents DTSC's evaluation of TRC's Mercury Containing Thermostat Collection Program for 2015 and proposed program enhancements for 2016. The evaluation was based on information TRC provided in the 2015 Annual Report

For further details of each TRC program element, please refer to the 2015 Annual Report (<https://www.dtsc.ca.gov/HazardousWaste/upload/2015-CA-TRC-Annual-Report.pdf>)

## **SUMMARY OF TRC'S 2015 ANNUAL REPORT**

### **COLLECTION DATA**

In 2015, TRC recovered 214.84 pounds of mercury from the equivalent of 19,223 mercury thermostats:

- ✓ TRC recovered 16,051 thermostats from HVAC wholesale distributor collection locations, 1,096 from HHW locations, 913 from Contractor locations, and 200 from retail locations (less than 1%).

### **PROGRAM EDUCATION AND OUTREACH**

TRC carried out a number of education and outreach activities, including the following:

#### **DIRECT MAIL**

##### **➤ TRC Collection Locations**

- Mailed reminder postcards to collection locations that had not returned a TRC container within the last 12 months. TRC mailed 266 reminders in March, 192 in July, and 277 in November.
- In June and July, sales letters were sent to wholesale locations without TRC bins. Before the letters were sent, TRC sent a separate letter to the CEOs of these companies informing them of the impending letter to their branches and of their legal requirements regarding mercury thermostat disposal.
- On July 17 TRC mailed a letter to 28 Heating, Air-conditioning & Refrigeration Distributors International (HARDI) member CEOs with headquarters in California. The letter encouraged them to conduct an original equipment manufacturer (OEM) Mercury thermostat cleanout at their branches, and included a sample memo for HARDI CEOs to distribute to their collection locations.
- On October 28 TRC sent sales letters to 21 Winsupply wholesale locations without TRC bins in the state of California. The letter was sent to remind these branches of their lawful obligation to provide a mercury thermostat recycling option to customers and offered free bins to help them meet this obligation.

##### **➤ HVAC Contractors/Technicians**

- TRC purchased all HVAC contractor lists from Hoover's, narrowing the results by SIC codes relating to the HVAC industry.
- TRC created a 4x6 loyalty postcard to create awareness of the "Recycle. Scratch. Earn" program at participating HVAC wholesaler locations. TRC sourced a mailing list of HVAC contracting business contacts with two - eight employees located within 5 miles of a location participating in the loyalty program. A total of 773 postcards were sent in March, 734 were sent in July, and 592 were sent in December.
- In December TRC mailed a full color letter to 616 HVAC contracting business contacts with two to nine employees.



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## ADVERTISING

TRC's two primary advertising targets remain HVAC contractors/technicians and HVAC wholesale distributors. TRC's 2015 advertising campaign continued to focus mostly on "easy and free" and "It's the law" messaging (where applicable, as only a limited number of states ban the disposal of mercury thermostats in solid waste and/or require HVAC contractors to recycle all mercury thermostats removed from service).

### ➤ **Print Advertising**

TRC continued print-based advertisements in the following national/regional HVAC trade publications:

- HVAC Insider Goldenwest, which has 6,960 subscribers in California and is published quarterly. The advertisement was a 2-color 1/2pg and ran in all issues for the year.
- Indoor Comfort News is published by the Institute of Heating Air Conditioning Industries Inc. (IHACI). IHACI is California's largest HVAC trade group and its monthly magazine has approximately 17,000 subscribers in California. TRC ran a 2-color 1/8pg ad in the February – April and October – December issues to highlight the HVAC technician loyalty program. The ad also included logos of all distributors participating in the program.
- Johnstone Supply Flyer, a printed version of their online catalogue that is mailed to more than 300,000 HVAC contractors nationwide. The flyer featured a full page TRC advertisement in their August issue to promote the TRC TV giveaway promotion. Johnstone Supply has 37 locations in California. Johnstone Supply provided this insertion at no-cost to TRC.
- Distribution Center Magazine, the exclusive publication of HARDI, with more than 11,000 bi-monthly subscribers. TRC ran a full-color 1/4 page advertisement in May and December promoting the Big Man on Planet competition.
- HVACR Business Magazine, a national publication with approximately 34,000 qualified subscribers, of which approximately 3,270 are in California. TRC ran a full color 1/4 page advertisement in January, March, and July.

### ➤ **Digital Advertising**

TRC continued the use of rotating banner advertisements in 2015, with changes in scheduling and scope and the addition of new outlets.

TRC follows the national trend of analyzing advertisement success by measuring each advertisement's impression and click-through rate. An impression is a measure of the number of times an ad is displayed, and a click-through rate (CTR) is the number of times a click is made on the advertisement divided by the total impressions.

TRC's new advertising in 2015 included:

- ACHR News' AHR Wrap Up Enewsletter, sent to 12,000 opt-in subscribers. This is an annual email sent in January at the conclusion of the Air-Conditioning, Heating, Refrigerating (AHR) Exposition, the largest HVAC industry trade show. TRC ran a Medium Rectangle ad within the email that received a 0.72% CTR.
- Distribution Center's Enewsletter, sent to 4,000 weekly opt-in subscribers. TRC ran a Medium Rectangle ad in February, March, and June receiving an average CTR of 2.5%.
- NATE Enewsletter, sent bi-monthly to 31,900 opt-in subscribers. TRC ran a text ad that received a 0.14% CTR.



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TRC also continued digital advertisements on the following HVAC industry websites below:

- HVACR Business “Ahead of the Curve” Enewsletter, a monthly newsletter that reaches approximately 9,000 opt-in readers each month. TRC ran a banner ad in July, August, November, and December. The average CTR was 3.0%.
- HVACRBusiness.com, an HVAC publication website with 14,000 monthly visitors. TRC ran a banner ad in February and July that resulted in 92,848 impressions and an average CTR of 0.9%.
- Contracting Business Magazine’s dedicated Email Blast, which was sent twice with different messaging to opt-in subscribers in states with disposal bans, including California. The January mailing was sent to 5,980 subscribers and received a 25% open rate and a 0.5% CTR, while the June mailing was sent to 8,970 subscribers and received a 13% open rate and a 0.5% CTR.
- ACHRNews.com, a website that assists the decision-makers from all branches of the HVAC industry including contractors, manufacturers, distributors, parts and supply wholesalers, and service companies. More than 241,852 HVACR professionals visit the website every month, totaling more than 308,911 monthly website visits. TRC ran a Topic Sponsorship ad in January, February, and September that resulted in an average 0.14% CTR.
- ACHR Newsletter, a weekly email blast with more than 10,000 subscribers. TRC ran a banner ad for four issues in April and four issues in October with an average CTR of 4.7%.
- HVAC-Talk.com, an online forum that averages more than 300,000 monthly visitors. TRC ran a rotating banner ad in February, March, and July, which resulted in 291,706 total impressions and an average CTR of .03%.

➤ **Google AdWords**

Since 2011, TRC has deployed a Google AdWords campaign that geo-targets contractors/technicians and consumers (homeowners) in states with mercury thermostat disposal bans, including California. Advertisements appear on Google search results pages after an individual searches terms related to TRC’s mission (e.g. thermostat replacement, contracting recycling regulations, mercury thermostat recycling, programmable thermostats, etc.).

TRC continued this campaign in 2015, running it the duration of the calendar year. This is TRC’s preferred option to reach consumers because of the campaign’s extensive and targeted reach. The California campaign yielded 3.2 million impressions with an average CTR of 0.5%.

**EARNED MEDIA**

TRC issued many media releases that were published, generating additional exposure for the program such as:

- Indoor Comfort News (25,000 circulation)
- The Air Conditioning and Refrigeration (ACHR) News (370,378 reach), including a front page editorial article
- Distribution Center (11,000 circulation)
- Contracting Business (40,000 circulation)
- Wholesale distributor’s on-hold phone messaging, including Johnstone Supply and Standard Supply
- Johnstone Supply’s printed flyer (300,000 circulation)
- HVAC-Talk.com (408,769 monthly unique browsers)



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## **TRC WEBSITE**

TRC's website data is calculated through Google Analytics, and website traffic continued to increase in 2015. TRC increased its total annual visitors by 71% compared to 2014. There was a 98% increase of visitors from California. The state ranked 1st among the country in terms of its share of visitors to TRC's website (21% of all website visitors were from California). The increase in traffic reflects the impact of paid trade channel advertising, the Google AdWords campaign, and search engine optimization efforts.

The TRC Twitter account saw a 42% increase in number of followers in 2015, and its Facebook page enjoyed an 83% increase of page "Likes."

## **TRADE SHOWS, CONFERENCES, AND PRESENTATIONS**

- Honeywell International Webinar (NEW!)
- HHWIE Forum Presentation (NEW!)
- Air-Conditioning, Heating, Refrigerating Exposition Chicago, IL
- Association of Energy Service Professionals (AESP) Trade Show Orlando, FL
- Product Stewardship Institute Webinar (NEW!)
- AESP Brown Bag Webinar (NEW!)
- Johnstone Supply Member Meeting San Diego, CA
- ACCA and the IE3: Indoor Environment & Energy Expo Dallas, TX
- March 27th: YouTube Video Presentation (NEW!)
- ACCA Town Hall Webinar (NEW!)
- Used Oil/HHW Training Event (NEW!) Universal City, CA
- HARDI FOCUS Marketing & Sales Conference (NEW!) Charleston, SC
- ACCA Webinar with Dynatemp (NEW!)
- NAHMMMA National Conference Austin, TX
- EEBA Excellence in Building Conference & Expo (NEW!) Denver, CO
- IFMA World Workplace Conference & Expo Denver, CO
- Institute of Heating and Air Conditioning Industries (IHACI) Trade Show Pasadena, CA
- HARDI National Conference Orlando, FL

## **SUMMARY OF ADDITIONAL EDUCATION AND OUTREACH BY CHANNEL**

### **HVAC WHOLESALE DISTRIBUTOR OUTREACH**

#### ➤ **Ferguson Enterprises Onboarding**

Ferguson Enterprises is the number one wholesaler in the country, owning more than 200 HVAC locations nationwide. Ferguson's corporate made a business decision to engage in both HVAC and blended Ferguson stores regardless of state mandatory programs. Ferguson sent an email in July to 15,910 subscribers announcing its partnership with TRC and highlighting the program.

#### ➤ **Technician Loyalty Program**

In 2014 TRC developed, "Recycle. Scratch. Earn," an HVAC technician loyalty program. The program was implemented at select wholesale distributor locations and is accessible in all major markets in California and continued to run throughout 2015.



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➤ **Johnstone Supply National TV Giveaway Promotion**

In September, Johnstone Supply launched a 40 inch TV giveaway at 383 of their stores nationwide, including 37 in California. Each mercury thermostat recycled earned entry into the giveaway.

➤ **Big Man on Planet Competition**

TRC partnered with HARDI for the fourth annual Big Man on Planet (BMOP) competition. The competition was restructured to allow for four distributor winners (as opposed to three in 2014) and included a \$500-\$1,000 employee incentive to the top four branch locations within each tier. The restructuring was implemented to provide a more fair tiered system, putting distributors with a similar number of branch locations in competition with one another. In April TRC mailed an invitation to the executives of 357 HARDI member principle contacts encouraging their participation in the program. The competition ran May 1st – October 31st and participating locations shipped a total of 432lbs of mercury during the competition.

➤ **Location Calls**

TRC staff made 87 phone calls to collection locations in California that hadn't returned a bin in more than 12 months. Calls reminded locations of the need to stay in compliance with accumulation time limits. TRC staff also offered to replace lost shipping labels, order FedEx Ground pickups for the bins, or provide free promotional materials

➤ **Site Visits**

A total of 66 California collection locations were visited by TRC staff in several key markets. The majority of locations visited were those that had not returned a bin within the past 12 months. Visits were conducted to ensure location staff was knowledgeable about the program, prepare the bin and schedule a shipment if applicable, and supply any other necessary materials.

➤ **Merchandise Displays for TRC Bins**

Throughout the year, TRC distributed branded cardboard displays to HVAC wholesale distributor collection locations to showcase the TRC container.

## **HVAC CONTRACTOR OUTREACH**

➤ **Contractor Environmental Policy**

TRC staff helped develop a draft model HVAC contractor environmental policy and shared it with the trade group, ACCA. TRC's goal is to work with ACCA and other trade groups to provide this template as a service for contractor's employee handbooks.

➤ **Loyalty Program Participants**

On 5/29 TRC sent an email to the 179 participants registered with the HVAC technician loyalty program. The email was a reminder about the loyalty program and highlighted the prizes people had been redeeming, including an Amazon Kindle Fire. The purpose was to showcase how recycling efforts can pay off in receiving high-value prizes through the program.

➤ **PHCC of CA**

In February of 2015 TRC staff had a call with the California Plumbing-Heating-Cooling Contractors Association (PHCC) to discuss collaboration opportunities. Both TRC and PHCC discussed that a membership was not the best path forward but instead agreed to review upcoming trade shows as potential for brand awareness.

## **HOUSEHOLD HAZARDOUS WASTE FACILITY OUTREACH**

In September, TRC developed a tri-fold brochure specifically for household hazardous waste (HHW) facilities in California to target their customers. It included information on how to locate HHW facilities using TRC's website and information on how to properly dispose of mercury thermostats. The brochure



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PDF is now available on TRC’s website as a promotional toolkit download, and hard copies are available by request. TRC also provided 500 brochures to the County of Siskiyou General Services, Yreka to use at an event they were hosting.

Additionally, TRC provided the California Product Stewardship Council a PDF of the brochure to include in an email blast. This resulted in making contact with the City of Oakland Public Works Department. TRC sent them 200 HHW brochures to share with property owners of multi-family properties in Oakland. The department also included a digital version on their property manager’s toolkit online.

**UTILITY PROGRAM/IMPLEMENTER OUTREACH**

- TRC engaged with the industry leading company, Cadmus to produce a report to identify demand response projects.
- TRC wrote model utility implementer RFP requirement language to share with utility companies. The focus of the model is to help utilities expand environmental compliance requirements for their implementers. TRC also began engagement with two non-TRC members interested in the recycling mercury issue, ecobee and NEST, by submitting to them MOU’s.
- In April, TRC signed up the largest solar installer in the state, SolarCity, to be part of the program.
- TRC engaged utility implementers who are members of the Association of Energy Service Professionals (AESP).

**HVAC TECHNICIAN SURVEY**

TRC hired a third-party to create a contractor behavior survey to collect first-hand accounts about recycling practices and compliance patterns of technicians as well as company level acceptance/resistance to compliance. The technician survey was conducted in-person by TRC staff and administered via touch screen devices at several HVAC trade shows nationwide, including the IHACI show in California. The surveys were initiated by asking contractors to take a brief five-minute survey regarding recycling behavior for a chance to win a Bosch Tool. If a technician indicated interest in participating they were handed the survey in the form of a touch-screen tablet which had the survey questions already displayed for convenience. Survey participation was incentivized by entry into a prize raffle for a Bosch tool give-away. The survey had 46 respondents, and while it included contractors from several states, generally contractor behavior tends to be similar nationwide.

**NATIONAL PROGRAM EXPENSES**

**2015 PROGRAM ADMINISTRATIVE EXPENSES**

<b>Program Component</b>	<b>2014</b>	<b>2015</b>	<b>% Change</b>
TRC Staff and Administration	\$ 593,631	\$ 625,205	5%
Recycling Costs	\$ 356,043	\$ 347,555	-2%
Incentive/Promotional Payments	\$ 47,712	\$ 42,224	-12%
New Collection Containers	\$ 15,108	\$ 10,960	-27%
Travel	\$ 70,120	\$ 81,152	16%
Legal	\$ 40,373	\$ 21,228	-47%
Direct Expense for Marketing & Outreach	\$ 289,347	\$ 277,995	-4%
<b>Total (expenses)</b>	<b>\$ 1,412,333</b>	<b>\$ 1,406,319</b>	<b>0%</b>



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**2015 PROGRAM EXPENSES WITH CALIFORNIA SPECIFIC COSTS**

<b>Program Component</b>	<b>Total Expenses</b>	<b>CA</b>
TRC Staff and Administration	\$ 625,204.88	\$ 44,137.29
Recycling Costs	\$ 347,555.25	\$ 31,955.00
Incentive/Promotional Payments	\$ 42,224.42	\$ 12,597.69
New Collection Containers	\$ 10,960.00	\$ -
Travel	\$ 81,152.16	\$ 10,655.88
Legal	\$ 21,228.28	\$ 1,252.77
Direct Expense for Marketing & Outreach	\$ 277,994.50	\$ 16,618.46
<b>Total (expenses)</b>	<b>\$ 1,406,319.49</b>	<b>\$ 117,217.08</b>

**LISTING OF 2015 CHANGES & EVALUATION**

**PROGRAM PERFORMANCE OVER TIME**

On average, the program has collected 127.6 pounds of mercury and 9,553 thermostats per year since 2001. In 2015 the program collected 214.84 pounds of mercury from 18,260 thermostats, a decrease from the previous year of 19.5% in pounds of mercury and 9.5% in thermostats.

The total pounds of mercury collected per 10,000 residents was 0.55 in 2015. This is lowest figure for pounds of mercury per 10,000 residents since 2010. The record high for the state of CA of 0.69 pounds of mercury collected per 10,000 residents was set in 2013. While the 2015 figure is a 20% decrease below the 0.69 pounds per 10,000 residents collected in 2014, it is two and a half times greater the 0.22 pounds per 10,000 residents collected a decade ago. There was a major increase in pounds per resident collected from 2009 to 2011, and since 2011 the pounds collected per 10,000 residents has remained above .50.

**CHANNEL PARTNER ANALYSIS**

The majority of thermostats collected in state were through wholesalers (89%) with the remaining thermostats collected by household hazardous waste facilities (6%), contractors (5%) and retailers (0.01%).

**COMPARISONS TO NATIONAL AND OTHER STATE'S DATA**

To compare how the state collection partners performed in 2015, the national averages for the number of bins returned per total locations since 2012 was calculated and compared to the state average over the same time period. The average numbers of bins includes locations that did not return any bins in a given year. It should be noted that when making comparisons each state has different regulations, housing stock mix, local policies, and incentives that may have a significant impact on returns. Overall, the average number of bin returned per location per year was higher in CA than the US average.

In 2015, 38.3% of the locations in CA returned a bin compared to a national average of 37.1%. The state with the highest percentage of locations returning a bin in 2015 was MN (54.5%).



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## **PROGRAM MODIFICATIONS**

### **2016 DTSC SETTLEMENT FOR SUMMARIES OF VIOLATIONS (2013 & 2014)**

TRC's collections in California since 2008 have reduced the amount of remaining mercury thermostats still in use, which is reflected in declining collections. This is consistent with national trends. TRC collects more mercury thermostats in California than in any other state.

The manufacturers did not meet the collection goals set by the DTSC for 2013 and 2014. On February 10th 2016, twenty-five manufacturing members of the TRC entered into a consent order to improve collection methods and test programs to increase awareness and participation.

### **2016 ANNUAL GOALS**

TRC again set annual goals for the organization for the calendar year of 2016. The 2016 goals were developed by TRC staff and incorporate each operational area of the organization, including:

- 1) Continue to increase efforts of collecting mercury thermostats by exploring nontraditional avenues
- 2) Steer TRC toward tactical, positive, cohesive messaging while implementing marketing strategies
- 3) Continue fulfilling all members' state specific legal requirements without losing continuity
- 4) Maximize human capital opportunities by utilizing available internal and external resources

### **COLLECTION LOCATION TOUCH CAMPAIGN**

In 2016, TRC will launch a comprehensive location outreach plan that strategically coordinates and schedules outbound phone calls, reminder postcards, and site visits throughout the year. Designed around the year's site visit travel schedule, phone calls have been scheduled to occur within two months of TRC staff physically visiting a state, and postcards have been scheduled to follow up these phone calls within two months. Special attention will be focused on states with mandatory collection programs, including Illinois, which will entail up to 120 phone calls to collection locations that have not returned a bin within the past year. States with non-mandatory collection programs will continue to receive up to 60 collection location phone calls in 2016.

### **BRANDING CAMPAIGN**

In January, TRC placed a full page color ad in ACHR News, one of the industry's leading HVAC publication with a weekly circulation of more than 33,000. The ad appeared during the week of the AHR Expo, which is one of the more popular issues of the magazine. The ad tied TRC's members and affiliates together around the positive call to action of recycling every mercury thermostat, every time. TRC resized this ad to place a half-page size in the February issue of HVACR Business Magazine as well.

Additionally in January, TRC launched a new branding campaign "Recycle every mercury thermostat, every time."

### **PAID ADVERTISING**

Additionally, TRC is currently working to update its Google AdWords campaign to include display ads, which include images versus only text, to enhance the visibility of the ads. TRC also plans to implement Facebook, and potentially YouTube, advertising in the spring and fall during the HVAC industry's shoulder (busier) seasons. Ads will have similar messaging to the Google AdWords campaign and be targeted to states with disposal bans.



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Some additional planned advertising and promotion (subject to change) include:

- 1/2 page spot-color ad in *HVAC Insider Goldenwest* for 4 months
- 1/8 page two-color ad in *Indoor Comfort News* for 6 months
- 1/4 page full-color ad in *Distribution Center Magazine* for 3 months
- Skyscraper banner ad on ACHRNews.com for 2 months
- Website Topic Sponsorship on ACHRNews.com for 3 months
- Top leaderboard ad in *ACHR News* e-newsletter for 2 months
- *ACHR News* digital edition video spotlight
- *ACHR News* digital edition sponsorship
- Feature leaderboard ad in NATE's bi-monthly e-newsletter for 2 months
- Medium rectangle banner ad in *Distribution Center's* weekly e-newsletter for 2 months
- Banner ad in AHRI's weekly newsletter for 13 weeks
- *HVACR Business Magazine's* web package for 2 months, including a video and three different sized ads on their website
- Continue to exhibit at regional and key national industry events
- Continue to efforts to engage larger contractors and HVAC wholesale distributors

### **DTSC's Assessment of TRC's 2015 Program**

DTSC agrees that TRC's program failed to collect the required number of mercury-added thermostats for 2015. TRC's 2015 Annual Report, identified to have collected 18,260 intact thermostats (not including an additional 963 mercury thermostats per loose ampoules conversion factor) of the required 113,850 mercury-added thermostats (see Cal. Code Regs., tit. 22, § 66274.5).

Throughout 2015, TRC members and DTSC were in close communication to negotiate a settlement of the 2013 and 2014 Summary of Violations (SOVs). Those negotiations lead to the February 10, 2016 Consent Order (CO) and the development of additional outreach and data collection elements through pilot studies. Perhaps resulting from the negotiations, TRC showed some signs of implementing activity changes in 2015; nevertheless, many of DTSC's ideas and suggestions were not evident in TRC's reported or Program Modifications. TRC efforts remain largely unchanged by continuing to implement many of the past program elements and by predominantly targeting their traditional program participants (wholesalers/distributors/contractors). For a third year, TRC failed to increase mercury-added thermostat collections. TRC's 2015 Annual Report failed again to demonstrate any correlation between the data obtained to what has or has not work to yield an increase or the decrease in mercury-added thermostat collection for 2015.

### **DTSC's Assessment of TRC's Program Modifications**

Regulations established a performance requirement for 2016 of 131,300 mercury-added thermostats. For each of TRC's program elements implemented, DTSC evaluated the data, information, and effectiveness presented in the 2015 Annual Report. Additionally, DTSC evaluated the proposed program modifications for implementation in 2016. Once again, TRC's program modifications and enhancements do not appear substantial enough to yield the increased collections of mercury added thermostats needed to achieve the 2016 performance requirements. TRC again did not provide the understanding for the proposed modifications of what additional amount of mercury-added thermostats it anticipates recovering, despite DTSC's clearly made note of that omission in both the 2013 and 2014 Annual Report reviews.



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For 2016, the mercury-added thermostat manufacturers are proposing activities that are very similar to the activities that were conducted in previous years. DTSC does not foresee an increase in mercury-added thermostats collections occurring in 2016, if the manufacturers continue to repeat the same methods. Additionally, the manufacturers presented no California specific metrics or other information that could be used to support the proposed modifications to achieve the 2016 performance requirements or will improve collections.

In DTSC's review of TRC's 2013 and 2014 Annual Reports and during the CO negotiations, DTSC has stated, metrics are essential to operate a program and propose program modifications to predict increase collections that would be substantiated by the data collected. The manufacturers must develop metrics that serve to correlate directly between the elements of the program, any proposed program modifications/enhancements, and number of mercury-added thermostats that are collected or anticipated, to increase mercury-added thermostat collections. This logical approach has been discussed with the manufacturers at great lengths, and elements of data collection have been incorporated into the CO. However, in the 2015 Annual Report, TRC presents no development or proposal to include data collection for purposes to appreciably increase the collection rate.

DTSC has noted in previous annual report reviews that the manufacturers must expand their program participant audience in order to create access to the collection program and increase collections. DTSC firmly believes in this concept, which was incorporated into the CO. Manufacturers must address this key issue by presenting a goal to "explore non-traditional avenues" as a blanket statement to expand the program. However, none of the proposed program modifications identifies any of the potential new program participants as outlined in Exhibit A of the CO. Integrating participation by other audiences into the program that has a role in generation or handling waste mercury-added thermostats is essential for the program to capture the mercury-added thermostats that become waste.

DTSC continues to believe that the use of the right incentives may be a viable method to increase mercury-added thermostat collections; another valuable concept incorporated into the CO, and noted in previous annual reports reviews. There are several national mercury-added thermostat collection programs (TRC operates two of these) that offer monetary incentives for the return of a mercury-added thermostat. Previously manufacturers have argued that limited data could not inform their use at that point in time. However in the 2015 Annual Report Figure 3.5 on page 63, mercury-added thermostat returns are calculated based on per capita, in which those states who offer an incentive greatly exceeds California's calculated value of 4.7 mercury-added thermostats per 10,000 residents. From TRC's own data, it can be construed that offering an appropriate incentive to the right group will increase mercury-added thermostat collection compared to no incentive at all.

### **DTSC's Conclusions**

The performance requirement for 2016 is 131,300 mercury-added thermostats. As with the 2013 and 2014 Annual Reports, TRC did not present information or data that demonstrates the proposed program modifications would yield the necessary increase in the collection of mercury-added thermostats to achieve the 2016 performance requirements. For TRC to meet the collection requirement of 131,300 mercury-added thermostats in 2016, TRC must expand its program participation efforts beyond wholesalers to include other generators/handlers of mercury-added thermostats and must gather data and develop meaningful metrics to allow the assessment of its effort in California.

DTSC looks forward to working with TRC in the implementation of the CO as it explores outreach methods and incentive options to increase the collection of mercury-added thermostats and participation in its collection program.