



Fall 2019 Mobile HHW Analysis Season Report



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Overview

Since the program's inception in 1993, the Tennessee Department of Environment and Conservation (TDEC) continues to provide the Tennessee Household Hazardous Waste Mobile Collection Event services to counties to aid in the management of household hazardous wastes (HHW). Regulations for HHW are found in Tennessee Code Annotated [Title 68 chapter 211](#). To date, there have been over 1,400 one-day collection events with over 361,500 Tennessee families safely disposing over 23 million pounds of HHW.

HHW is any unwanted, spent, used household product that can catch fire easily (flammable); eat away at or irritate living tissue (corrosive, both acid and base); react violently with water or other chemicals (reactive); or is poisonous to humans or animals (toxic). Usable household products may exhibit hazardous properties but until they become a waste they are not appropriate for the HHW program.

The Mobile Collection Service is open to any Tennessee resident and is limited to households. Businesses, institutions, schools, and agri-business operations may not use this service, but can participate as a Conditionally Exempt Small Quantity Generator (CESQG) which can assist with reduced mobilization fees for proper business waste disposal. Persons or businesses interested in participating in the business waste should refer to the following web site: <https://www.tn.gov/environment/hhw/cesqg>.

Counties request mobile HHW events using a tiered priority listing provided by TDEC. Interested parties can find the tiered guidelines on the Department's website in the [Mobile HHW Collection Service Guide](#). As the county requests are submitted, the schedule is set trying to maximize access of the majority of the citizens. Higher populated counties generally have greater participation and may have more than one event per year.

Season Participation Analysis

The 2019 Fall HHW (September 7th – November 2nd) event season ended with 24 counties hosting 3,498 households showing an 18.24% increase from the previous year (see table 3) evaluated using same county participation.

Batteries, Oil, Paint, Electronics and Antifreeze (BOPAE) continue to be a focus by the counties through the year. The Department conducted twelve oil based paint and eleven fluorescent lamp milk runs in Fall 2019. The frequency and convenience of BOPAE collections provides added service for the citizens and spreads the work load for the collection sites. TDEC provided laminated paint job aids that assisted counties to identify and segregate oil paint that needed to be collected. These tips for identifying latex and water based paint were useful to help solidify and manage latex paint in the solid waste stream. The Department further shared additional methods for managing discarded fire extinguishers with counties to assist with year round management of these materials and to reduce the cost associated with disposal while also reducing hazards to the solid waste staff.

In an effort to increase year-round access for HHW disposal, the Department has strategically placed six temporary HHW containers across the state (Chester, Giles, Blount, McMinn, Loudon, Grainger Counties) that are available to all citizens of Tennessee. In the second half of 2019, the containers have served 839 households and collected 5,634 lbs. of HHW via three milk runs.

The season concluded with a total of 169,705 pounds of discarded household hazardous waste that was collected in the combined 50 events (26 milk runs of oil based paint, bulbs, and other HHW for a total of 73,593 pounds, other mobile HHW events included in tables 1-3). The Department collected through mobile events and milk runs: oil based paint, fluorescent bulbs, and other HHW at county facilities throughout the year and then picked up these materials by a contractor for proper disposal that resulted in a total cost of \$251,991.97 (milk runs, \$27,739.26 other included in tables 1-3).

Summary of mobile HHW materials collected (Additional Data in Tables 1-3)

- Corrosives acids (Sulfuric acid, phosphoric acid, CLR cleaner, muriatic acid, battery acid); 3,029 pounds
- Corrosive Bases (Drano, sodium hydroxide); 4,656 pounds
- Pesticides, herbicides, rat poisons, insecticides, animal medications; 28,333 pounds
- Flammables, gasoline, charcoal lighter, kerosene, paint thinners; 16,642 pounds
- Aerosols, paint, health & beauty aids, insecticides, lubricants, cleaners; 7,346 pounds
- Mercury; 68 pounds
- Oxidizers, bleach, chlorine, pool sanitizers; spa and hot tub sanitizers; 484 pounds

Advertising

The Materials Management Program requires advertising and information sharing. The Program created informational handouts to supplement standard stakeholder advertising requirements. Participants received information as a take away that directs them to contact information on the TDEC website. The Department shared as an outreach to the counties, recommendations for advertising and promoting the events to help maximize communication opportunities in the serviced areas. Program staff researched [Green Cleaning Products](#) and developed a handout to provide additional resources to participants. TDEC made available additional copies for distribution to participants. Handout materials summarized methods to manage used oil and the counties distributed to participants as consistent reminders of protecting and preserving our environment with particular emphasis on valued drinking water source. The Program encouraged counties and participating organizations to reach out to public utilities, business employee newsletters, social media, and other forms of information sharing. TDEC central office was very proactive with sharing schedules by using MyEmma as a platform for sending emails to interested citizens who have shared email addresses. As a result of this outreach, TVA staff shared the mobile HHW events through their newsletter to their distribution list which reached 10,000 staff and contractors in the state. Partnerships with Tennessee Poison Control, Vanderbilt Hospital Burn Center, UT Institute of Agriculture Family and Consumer Sciences, various electrical utilities shared the HHW information. Robert Sharp & Associates, the marketing specialist for Waste Connections shared the mobile HHW events in three of their Tennessee districts to include Memphis, Knoxville, and Clarksville. The information was extracted from the web site which gave additional outreach.

Department drug take back programs coordinated by some counties increased the take back of products and increased awareness of the hazards of pharmaceuticals in households. Additional events associated with

HHW collection events at some counties included beneficial item collection with local non-profits and electronics collections.

Safety

TDEC Materials Management Program considers safety the highest priority for state, county, volunteer staff, and participants. The TDEC event staff prioritized safety by wearing high visibility safety vests, making first aid kits available and providing additional event resource materials that encourage site safety. Many event staff workers have received CPR and AED training with a goal for all staff to be prepared for unexpected situations that may occur at mobile events. Clean Harbors, the event contractor, provides an onsite chemist and additional technical staffing who assists with the proper segregation of chemicals and Department of Transportation (DOT) requirements for safe packaging and transportation.

As industries develop household materials that may cause problems for proper disposal or impacts safe management, TDEC searches for consumer based solutions. Disposal option challenges for sharps, needles, lancets, and auto inject pens caused the Program to expand this option to HHW mobile events. As participants remove these materials from the solid waste stream, the safety of solid waste staff, haulers, landfill staff and maintenance staff is greatly increased. HHW participants appreciate this added option and benefit from this expansion.

The future for HHW events looks bright as the program reaches out to the public schools across the state for identification and proper management of materials and chemicals generated from science, chemistry, biology and engineering labs, maintenance and janitorial areas, automotive, wood, metal, agricultural and cosmetology trade education areas. The HHW Cleanout Program leverages school programs in distressed areas to provide increased services and benefits where geography or other factors may play the role of limiting convenient access. As materials are removed from schools, green technology and micro chemistry techniques are encouraged to minimize the hazards associated with more harmful chemicals.

The Program urges counties to submit their recommended dates by December 1, 2020 so that staff may schedule the upcoming year's events by mid-January 2021. The Department will post the mobile event schedule at <http://tn.gov/environment/hhw/schedule> for public review.

Individual Counties-Participation-Table 1 of 3						
Event Date	County	Participator	Cost	Cost/HH	Cost/lb	lbs/HH
9/7/2019	Montgomery	330	\$21,372.58	\$64.77	\$2.25	28.82
9/7/2019	Overton	33	\$1,269.72	\$38.48	\$2.16	17.79
9/9/2019	Hickman	33	\$4,005.42	\$121.38	\$1.35	90.09
9/14/2019	Marshall	64	\$6,306.22	\$98.53	\$2.93	33.67
9/14/2019	Dickson	170	\$7,254.77	\$42.68	\$2.21	19.29
9/14/2019	Anderson	322	\$22,233.57	\$69.05	\$2.71	25.51
9/14/2019	Coffee	135	\$7,437.73	\$55.09	\$3.00	18.36
9/21/2019	Trousdale	38	\$4,118.33	\$108.38	\$1.55	70.00
9/21/2019	Maury	144	\$10,755.27	\$74.69	\$2.41	30.94
9/28/2019	Wilson	271	\$19,147.83	\$70.66	\$2.10	33.70
9/28/2019	Greene	95	\$6,177.98	\$65.03	\$2.59	25.14
9/28/2019	Warren	82	\$7,725.15	\$94.21	\$3.21	29.39
9/28/2019	Monroe	64	\$2,730.41	\$42.66	\$2.78	15.36
10/5/2019	Weakley	65	\$3,328.00	\$51.20	\$2.13	24.03
10/5/2019	Sullivan	163	\$13,398.38	\$82.20	\$2.45	33.59
10/5/2019	Cumberland	464	\$22,494.97	\$48.48	\$2.43	19.92
10/12/2019	Carter	39	\$3,342.31	\$85.70	\$2.16	39.59
10/12/2019	Jefferson	78	\$6,193.18	\$79.40	\$3.09	25.71
10/12/2019	Sumner	227	\$17,341.76	\$76.40	\$2.15	35.48
10/19/2019	Unicoi	63	\$2,546.93	\$40.43	\$2.20	18.38
10/19/2019	Marion	24	\$1,899.98	\$79.17	\$1.36	58.29
10/19/2019	Lawrence	20	\$1,787.18	\$89.36	\$2.01	44.40
10/26/2019	Madison	228	\$8,284.76	\$36.34	\$2.72	13.36
11/2/2019	Rutherford	346	\$23,100.28	\$66.76	\$2.20	30.37
	Season Totals	3,498	\$224,252.71	Average \$70.04	Average \$2.34	Average 32.55

Individual Counties-Participation-Table 2A of 3 (Weight in Pounds)							
County	Flammable Liquids	Non Flam Liquid	Poisonous Material	Acid	Caustics	Oxidizers	Reactives
Montgomery	1,028	2,336	2,315	375	489	7	5
Overton	103		173		23		0
Hickman	1,998	290	476	52	54		0
Marshall	294	326	1,066	121	63	23	6
Dickson	378	1,452	704	121	38	21	0
Anderson	1,611	1,060	2,640	330	705	22	0
Coffee	309	280	1,352	104	188		0
Trousdale	204	319	540	22	23		0
Mauy	820	865	1,462	136	239		0
Wilson	1,020	1,815	2,596	174	337	16	0
Greene	721		920	92	120	26	0
Warren	223	789	770	102	132	6	0
Monroe	356		403	54	69	1	0
Weakley	100	309	453	45	40	36	0
Sullivan	806	986	1,545	217	224	96	0
Cumberland	1,041	2,537	2,797	253	563	39	7
Carter	396		382	53	52	11	1
Jefferson	378	287	735	159	193	6	6
Sumner	1,206	2,072	2,340	171	325	62	3
Unicoi	218		361	15	41	20	0
Marion	489	559	97	30	32	29	0
Lawrence	268	177	201	14	36		0
Madison	592	477	989	70	187	35	0
Rutherford	2,083	2,211	3,016	319	483	28	0
Season Totals	16,642	19,147	28,333	3,029	4,656	484	28

Individual Counties-Participation-Table 2B of 3 (Weight in Pounds)							
County	Oil Paint	Aerosols	Oil	Mercury	Fluorescent Lamps	Sharps	Total
Montgomery	1,973	784		1	152	46	9,511
Overton	191	59		0	3	35	587
Hickman		91		1	9	2	2,973
Marshall		204		0	5	47	2,155
Dickson	186	224		3	107	46	3,280
Anderson	853	675		3	233	82	8,214
Coffee	89	132		1		23	2,478
Trousdale	1,477	70		1	3	1	2,660
Maury	503	380		9	19	22	4,455
Wilson		709	2,005	1	398	63	9,134
Greene	151	177		0	139	42	2,388
Warren	57	202	-	33	61	35	2,410
Monroe		91		0		9	983
Weakley	474	38		0	62	5	1,562
Sullivan	657	364		1	560	19	5,475
Cumberland	618	967	232	4	147	39	9,244
Carter	435	165		0	41	8	1,544
Jefferson	60	130		3	9	39	2,005
Sumner	732	503	438	1	120	81	8,054
Unicoi	358	55		0	76	14	1,158
Marion	115	41		0	3	4	1,399
Lawrence	81	59		2	35	15	888
Madison		430		0	220	46	3,046
Rutherford	1,187	796		4	294	88	10,509
Season Totals	10,197	7,346	2,675	68	2,696	811	96,112

HHW County Participation Comparison Table 3 of 3			
County	Fall 19	Fall 18	Fall 19/18
Montgomery	330	363	-9.09%
Overton	33	19	73.68%
Hickman	33	14	135.71%
Marshall	64	77	-16.88%
Dickson	170	228	-25.44%
Anderson	322	208	54.81%
Coffee	135	94	43.62%
Trousdale	38	n/a	n/a
Maury	144	172	-16.28%
Wilson	271	362	-25.14%
Greene	95	78	21.79%
Warren	82	n/a	n/a
Monroe	64	110	-41.82%
Weakley	65	n/a	n/a
Sullivan	163	n/a	n/a
Cumberland	464	274	69.34%
Carter	39	n/a	n/a
Jefferson	78	64	21.88%
Sumner	227	225	0.89%
Unicoi	63	49	28.57%
Marion	24	24	0.00%
Lawrence	20	15	33.33%
Madison	228	261	-12.64%
Rutherford	346	314	10.19%
Households	3,498	2,951	18.24%

The 2019 Fall HHW event season ended with 24 counties hosting 3,498 households showing an 18.24% increase from the previous year evaluated using same county participation. Five counties did not have a comparable time frame for household analysis.



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