

MERCURY SWITCH REMOVAL PROGRAM
2008 ANNUAL REPORT

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HAZARDOUS WASTE SECTION

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MERCURY SWITCH REMOVAL PROGRAM

2008 ANNUAL REPORT

This annual report is presented to the Environmental Review Commission pursuant to Article 9, G.S. 130A-310.57. The report covers the activities of the Mercury Switch Removal Program from October 1, 2005 through June 30, 2008.

I. OVERVIEW

Through Session Law 2005-384 [promulgated in House Bill 1136, enacted on September 13, 2005], further amended by Session Law 2007-142 [promulgated in House Bill 1758, enacted on June 29, 2007], the North Carolina Legislature has acted to reduce the amount of mercury entering our state's environment. Under GS 130A-310.51, the purpose of this statute is to reduce the quantity of mercury released into the environment by requiring the removal of mercury switches from "end-of-life" vehicles. Specifically, it is required that prior to crushing, shredding and smelting of "end-of-life" vehicles, all vehicle dismantlers, vehicle recyclers, vehicle crushers and/or vehicle scrap processors must remove, collect, and recover the convenience lighting mercury switches contained in "end-of-life" vehicles prior to any crushing, shredding and smelting operations. In order to ensure compliance with these regulations (GS 130A-310.50 through .57), the Department of Environment & Natural Resources (DENR) has created the Mercury Switch Removal Program (MSR Program). The MSR Program is managed and directed by DENR's Hazardous Waste Section, with coordination through the Section's Compliance Branch.

II. BACKGROUND

Hazards Associated with Mercury

Mercury is a persistent, bioaccumulative toxin (PBT). Mercury toxicity occurs when the body accumulates excessive amounts of the metal. Mercury has no biological function for humans or animals, so the body stores it in the brain, kidneys and liver. Mercury causes permanent disruption of the nervous system and damage to brain functions. This can cause degradation of learning abilities, personality changes, tremors, vision changes, deafness, lack of muscle coordination and memory loss. It can also cause permanent damage to the gastrointestinal tract and kidneys and cause DNA and chromosomal damage leading to birth defects and miscarriages. In infants and children the primary health effect is permanent and irreversible impairment of the brain and neurological development. Mothers can transfer mercury to their unborn children and through breast feeding. There is no toxic threshold for mercury compounds known. The primary hazard from mercury switches in end-of-life vehicles occurs when the vehicle is shredded and smelted for recycling. The mercury cannot be effectively eliminated from the smelters' emissions. This airborne mercury condenses and enters North Carolina waters, where it is transformed to methylmercury. Methylmercury is easily taken up by fish and wildlife and accumulates in their tissues. Humans become exposed to mercury when fish or other contaminated animals are eaten. North Carolina currently has eleven rivers and lakes with consumption advisories for mercury in fish from North Carolina waters.

Responding to the Hazard

In order to implement the provisions of GS 130A-310.50 through .57, and to meet programmatic responsibilities and regulatory provisions, the MSR Program staff: (a) initiated contact with vehicle

manufacturers to communicate our needs for the program and to establish current manufacturer's specifications; (b) applied for membership in the Interstate Mercury Education and Reduction Clearinghouse (IMERC), which provides ongoing technical and programmatic assistance to states on reducing mercury in products and waste; (c) participated in the Environmental Council of the States (ECOS) sponsored technical assistance conference calls with federal and state officials; and (d) convened meetings with the involved stakeholders (auto manufacturers, vehicle dismantlers, vehicle crushers, scrap processors and steel makers).

Through the stakeholders meeting, program implementation problems relating to the safe and uniform removal, storage and recycling/disposal of the mercury switches were discussed. It was agreed to delay implementation of our state mercury switch removal program (originally slated to start July 1, 2006, but through legislation was delayed until July 1, 2007). The reason for the delay was the imminent signing of a Memorandum of Understanding (MOU) to establish the National Vehicle Mercury Switch Recovery Program (NVMSRP). Following the signing of the MOU on August 11, 2006, the department and other North Carolina stakeholders met and formulated the proposed amendments to our existing legislation, thus making the benefits of the MOU available to North Carolina stakeholders.

By their signature of the MOU, North Carolina has demonstrated its support of the National Vehicle Mercury Switch Recovery Program. In accordance with this agreement, the auto manufacturers now provide the following benefits to North Carolina stakeholders and other NVMSRP Participants. [These benefits are provided through End-of-Life Vehicle Solutions (ELVS), a corporation formed by the auto manufacturers.]

National Memorandum of Understanding Benefits to:

Vehicle dismantlers/recyclers, vehicle crushers, or scrap processing facilities

- Upon written request (enrollment with ELVS), ELVS will provide the program participants with educational materials regarding mercury switch removal, guidance on which vehicles contain mercury switches (including the make, year and model of these vehicles), instructions on how to locate, identify and remove Mercury Switches and any information unique to the particular state in which the Mercury Switch removal is taking place, including applicable state and federal regulatory requirements.
- Provide program participants with appropriate storage/shipping containers, including applicable labeling and shipping documents necessary under state and federal regulations for the safe collection and shipment of the mercury switches.
- Arrange and pay for transportation of the mercury switches in a timely fashion from the vehicle dismantlers, scrap processing facilities or vehicle crushers to a qualified mercury retort facility that has the appropriate RCRA permits for management of the various shipments of mercury switches collected through the program.
- Arrange and pay for the proper recycling of the mercury switches by a qualified mercury retort facility or, when recycling is not feasible, for the proper disposal of the mercury switches at a permitted disposal facility.
- Assume liability for the mercury collected and provide for appropriate indemnification, holding harmless participating vehicle dismantlers, scrap processing facilities, vehicle crushers and others removing switches through this program once mercury switches are collected by the ELVS contractor. Such assumption of liability shall not occur in the event that the vehicle dismantlers, scrap processing facilities, vehicle crushers or any participant fails to package the switches and/or assemblies in accordance with state law and ELVS requirements.

Steel manufacturers

- Provide steel manufacturers with a listing of scrap steel suppliers who are program participants; provide reporting on the program effectiveness at both federal and state levels.

Government agencies

- Provide/Maintain an information database of participants and others. Data includes:
 - Clear contact information/identification of vehicle dismantlers/recyclers, vehicle crushers, or scrap processing facilities, including business name(s), principal contacts, physical and email addresses, telephone and fax number(s), location and other relevant information such as website addresses;
 - Documentation showing when the participant joined the program (or started submitting mercury switches);
 - Records of all submissions by the participant including date, number of mercury switches (and number of vehicles processed as voluntarily reported by the participants); and
 - Confirmation that the participant has submitted mercury switches as expected, reflecting the operations of the participant
- Report to all involved parties on overall program implementation progress results, including, but not limited to, vehicle dismantler or others' participation. Annual reporting shall include:
 - Total number of dismantlers or other potential participants identified, compared with estimates of total number;
 - Total number of dismantlers or others contacted;
 - Total number of dismantlers or others participating;
 - Number of vehicles processed by yard as voluntarily provided by participants or parties to this agreement. [Where actual numbers are unavailable, estimates or ranges are preferable to no data.]
 - Total mercury (in pounds) and number of mercury switches recovered nationwide;
 - Total pounds of mercury, number of mercury switches, and national capture rate, with information organized by state, compared with the expected range of mercury switch retirement rates for each state; and
 - Total number and identity of dismantlers or others dropped due to inactivity (15 months of inactivity) or withdrawn from program (upon verification that the participant is no longer in business and removed switches have been recovered or there is an inability to contact or repeated no response)

The Mercury Switch Removal Legislation was amended to align with the National Vehicle Mercury Switch Recovery Program on June 29, 2007 and the North Carolina Mercury Switch Removal Program requirements were implemented on July 1, 2007.

III. MSR Program Activities

In order to meet the initial mandates of General Statute "§ 130A-310.52, (this portion later repealed by the amended legislation) the MSR Program staff developed a plan to direct/instruct all end-of-life vehicle recyclers to safely, and in an environmentally responsible manner, remove, collect, store and recycle as "Universal Waste" all convenience mercury lighting switches contained in the end-of-life vehicles prior to any crushing, shredding and smelting operations.

That plan focused on the development of a comprehensive guidance document which instructs the end-of-life vehicle recyclers as to the safe and proper methods for removing, storing and recycling of mercury switches/devices. From data gathered, program staff prepared guidance documents, detailing the removal and recycling/disposal of the mercury switches utilized for convenience lighting. These documents are available on

the Division of Waste Management's web site (<http://www.wastenotnc.org>) under the Mercury Switch Program link and include, in part, the following:

- a one-page fact sheet to provide information to the general public and the regulated universe on the program elements and requirements, including MSR Program contacts
- a comprehensive and current compilation of vehicles (make, model, year, etc.) which contain mercury switches/devices
- manufacturers' instructions for locating and safely removing mercury switches/devices
- instructions to vehicle recyclers for identifying the content (mercury or steel ball) of switches whose contents may be unknown (when in doubt, the switch is assumed to contain mercury)
- a safe and environmentally responsible method for storage and final recycling/disposal of the mercury switches/devices (including certain function switches presumed to contain mercury), and mercury spill cleanup procedures
- ELVS enrollment forms
- forms for the required record-keeping and reporting
- procedures for payment of the switch "bounty" (\$5 / switch)
- vehicle marking instructions
- the disposal procedure for recycling the mercury switches as "Universal Waste"

To determine our program's effectiveness, as measured by having a capture rate of at least 90% of the "national capture rate", reports are gathered through ELVS and tabulated by MSR Program staff to evaluate North Carolina's switch capture rate.

IV. PROGRAM STAFFING

The MSR Program, as part of the Hazardous Waste Compliance Branch, has obligated resources to implement a statewide compliance and technical assistance program. Additionally, the MSR Program has obligated resources for the administration of the reimbursement program.

- The MSR Program compliance program has implemented technical assistance and monitoring visits to initially introduce the program to those affected. MSR Program staff perform compliance monitoring to confirm inventory control, record-keeping and proper management of mercury switches under the provisions of "Universal Waste".
- The MSR Program has developed educational activities to disseminate program information statewide through on-site visits and consultations, presentations at vehicle processor association meetings, through local government outreach and through the Division of Waste Management's web site.
- The MSR Program has developed Site Safety Plans for MSR Program employees to ensure their safety.
- The MSR Program staff will participate in any subsequent program legislation as needed.

For this and previous fiscal years, the program was comprised of field staff inspectors (assigned to home duty stations), an administrative assistant, and a program supervisor. For greater coverage and efficiency, the three and one-half positions are, on a part-time basis, spread among nine field inspectors, four supervisors and an administrative assistant assigned to the Hazardous Waste Section. As previously stated, the Mercury Switch Removal Program resides solely within the Hazardous Waste Section's Compliance Branch. (See Attachment 1 for the Organizational Chart)

V. SUBJECT FACILITIES

All vehicle dismantlers/recyclers, vehicle crushers, or scrap processing facilities who process six or more vehicles for the purpose of salvage must remove the mercury-containing convenience lighting switches prior to

crushing, shredding or smelting of those vehicles. To participate in North Carolina's Mercury Switch Removal Program's reimbursement process, vehicle dismantlers/recyclers, vehicle crushers, or scrap-processing facilities must register with ELVS and with the NC MSRP office. This is accomplished by sending a completed post card to ELVS and a completed tax ID registration form to the NC MSRP office. Currently, there are 271 facilities registered, through ELVS, with the North Carolina Mercury Switch Removal Program. An additional 326 have been identified as potential program participants.

VI. FACILITY ASSESSMENTS

During 2005(October through December), 2006, 2007, and the first half of 2008, MSRP inspectors conducted a total of 1,263 inspections (5, 715, 290, and 253 inspections, respectively) while visiting 962 facilities located throughout North Carolina's 100 counties. The site visits were intended to evaluate whether the facility was subject to the new law and to acquaint those facility operators who are subject to the law with the legislated requirements. Additional compliance assistance was given by the inspectors as needed regarding other RCRA and Clean Water Act (CWA) regulated requirements.

VII. ENFORCEMENT & COMPLIANCE

During the compliance assistance inspections, when an egregious/significant act of non-compliance was observed/noted, a Notice of Violation (NOV) was issued. For less egregious acts of non-compliance, a Warning Letter is issued with an expectation that eminent corrective will achieve compliance with the regulations. In general, the vehicle dismantlers/recyclers, vehicle crushers, or scrap processing facilities are cooperative and have rapidly responded with corrective action when minor deficiencies or violations were cited or recommendations made. When these minor deficiencies are not corrected in a timely and uniform response resulting in a return to compliance, a more severe enforcement action such as a Notice of Violation (NOV) or a Compliance Order (CO) with administrative penalty is issued.

During the period between October 1, 2005 and June 30, 2008, MSRP inspectors issued one Notice of Violation for a violation of the RCRA "Used Oil" regulations and twenty-eight Warning Letters, of which four were related to MSRP violations, three were related to RCRA "generator" violations and twenty-one were related to RCRA "Used Oil" regulations.

VIII. FUNDING & EXPENSES

The Mercury Switch Removal Program is funded by fees collected as part of the NC DOT application for certificate of vehicle title fees. One dollar of the \$40-per-vehicle fee is placed in the Mercury Switch Removal Account in the Department of Environment and Natural Resources. For FY 2005-2006, the budget was estimated at \$223,000 with \$89,500 allotted by the legislature to cover the initial cost (position funding, equipment, supplies, etc.) of setting up the program. [For FY 2006-2007 and FY 2007-2008, an additional \$29,000/year was allocated for this purpose.] For FY 2006-2007, the budget of approximately \$291,000 was developed, utilizing anticipated personnel, services and day-to-day operating costs. With the legislated effective date of July 1, 2007, the FY 2007-2008 projected budget was approximately \$381,000, which includes a reimbursement budget of \$85,750 (17,150 switches). Reimbursement paid to the vehicle dismantlers/recyclers, vehicle crushers, or scrap processing facilities, for removal of the mercury switches with proper recovery and disposal, is \$5.00 per switch. Program costs for FY 2005-2006 totaled \$167,000, and for FY 2006-2007, costs totaled \$257,000. The FY 2007-2008, total operating costs were \$372,000, which includes switch reimbursements totaling \$91,000. (See Attachment 4)

IX. SUMMARY

Through the efforts of the MSR Program staff, North Carolina currently ranks eighth in the nation with respect to the number of participating facilities removing and disposing of mercury switches as part of the national ELVS' Program. (See Attachment 5)

Attachment 2 lists the availability and recovery of the mercury-containing automotive convenience light switches for the period January 1, 2007 through December 31, 2007. As the North Carolina MSR Program participation with the National ELVS' Program began on July 1, 2007, the total listed from the ELVS' data for North Carolina, while accurate, is not representative when compared with most of the other states who participated for the full year. The calculations shown in Attachment 6 demonstrate that North Carolina did, in fact, achieve its goal of 90% of the national ratio for the first half-year of MSR Program participation. North Carolina's ratio is 104% of the National MSR Program ratio for this time period (7/1/07-12/31/07).

For the period January 1, 2008 through June 30, 2008, the data displaying the availability and recovery of the mercury-containing automotive convenience light switches is listed in Attachment 3. The data for the top listed state, Rhode Island, is somewhat skewed in that more switches were removed and collected than were available. The probable reason for this phenomenon is that many vehicles processed in that state were not registered in Rhode Island, but originated from the nearby New York City area. North Carolina's ratio is 192% of the National MSR Program ratio for this time period (1/1/08- 6/30/08).

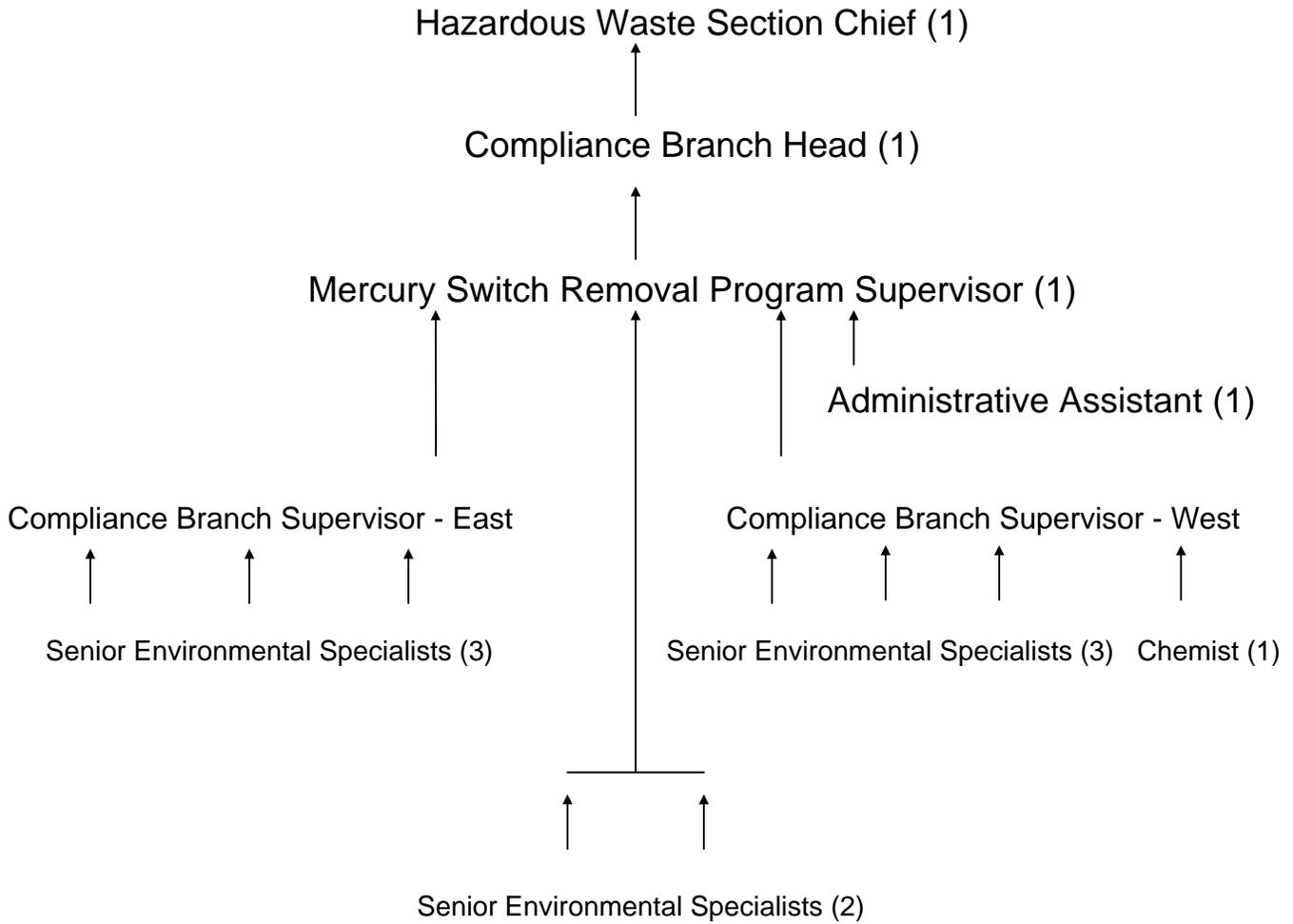
For this past year (July 1, 2007 to June 30, 2008), those participating in North Carolina's MSR Program removed, collected and shipped for recycling/disposal 33,610 automotive convenience lighting mercury switches. In terms of environmental protection, forty pounds of mercury were thus prevented from entering North Carolina's atmosphere. For the same time period, the National MSR Program removed a total of 962,720 mercury switches (which includes North Carolina's 33,610). The number of automotive mercury switches available nationally for FY 2007-2008 is approximately 3,901,000, and for North Carolina the number of automotive mercury switches available is approximately 97,950. Nationally, the ratio of the number of switches removed to the number of switches available is .24717, and that same ratio for North Carolina is .34313. The North Carolina MSR Program goal was to achieve at least 90% of the national ratio. North Carolina has achieved 139% of the national ratio.

For the period July 1, 2007 to June 30, 2008, North Carolina ranks sixth in the nation in the total number of mercury switches removed/collected. For that same period, North Carolina ranks eighth in the nation in effectively removing mercury from automobile steel scrap and preventing its release into our environment.

ATTACHMENTS

ATTACHMENT 1
MERCURY SWITCH REMOVAL PROGRAM

ORGANIZATIONAL CHART



ATTACHMENT 2
MERCURY SWITCH REMOVAL PROGRAM

STATE	Number of Participants	Total Mercury Recovered	Total Switches Available	Total Switches Recovered	Ratio Sw-A / Sw-R
2007 US Total	6,324	1,593.47 lbs	4,125,432	724,302	0.175569977
Alabama	17	9.88 lbs	77,624	4,489	0.057830053
Alaska	5	0.00 lbs	10,766	0	0
Arizona	35	9.62 lbs	67,729	4,371	0.064536609
Arkansas	197	7.21 lbs	35,445	3,277	0.092453096
California	434	489.78 lbs	419,651	222,628	0.530507493
Colorado	53	8.59 lbs	80,855	3,903	0.048271597
Connecticut	29	14.73 lbs	44,873	6,696	0.149221135
Delaware	20	0.00 lbs	9,954	0	0
Florida	192	73.70 lbs	249,960	33,501	0.134025444
Georgia	64	30.10 lbs	128,492	13,681	0.106473555
Hawaii	13	0.07 lbs	14,156	31	0.002189884
Idaho	30	0.00 lbs	24,099	0	0
Illinois	362	34.16 lbs	177,537	15,525	0.08744656
Indiana	382	12.16 lbs	122,220	5,527	0.045221731
Iowa	358	26.75 lbs	69,786	12,160	0.174246984
Kansas	25	0.00 lbs	45,008	0	0
Kentucky	38	15.62 lbs	67,448	7,100	0.105266279
Louisiana	292	1.05 lbs	62,341	475	0.007619384
Maine	250	8.22 lbs.	17,641	3,734	0.211666005
Maryland	53	1.89 lbs	65,131	860	0.013204158
Massachusetts	183	4.42 lbs	84,790	2,009	0.023693832
Michigan	98	86.78 lbs	194,868	39,445	0.202419073
Minnesota	203	122.58 lbs	94,421	55,719	0.590112369
Mississippi	41	4.38 lbs	34,762	1,991	0.057275186
Missouri	97	27.29 lbs	86,034	12,405	0.144187182
Montana	46	5.40 lbs	17,658	2,453	0.138917205
Nebraska	20	4.94 lbs	32,383	2,244	0.069295618
Nevada	4	0.00 lbs	22,973	0	0
New Hampshire	39	4.93 lbs	18,114	2,239	0.123606051
New Jersey	167	10.09 lbs	109,631	4,586	0.041831234
New Mexico	3	0.00 lbs	28,902	0	0
New York	481	164.09 lbs	168,829	74,588	0.441796137
North Carolina	161	33.66 lbs	103,586	15,301	0.147713011
North Dakota	13	1.83 lbs	15,054	833	0.05533413
Ohio	141	53.37 lbs	209,789	24,259	0.115635233
Oklahoma	21	0.98 lbs	59,039	445	0.007537391
Oregon	57	4.46 lbs	47,860	2,025	0.042310907
Pennsylvania	122	54.77 lbs	179,978	24,894	0.138316905
Rhode Island	75	23.57 lbs	6,550	10,713	1.635572519
South Carolina	54	0.39 lbs	57,047	178	0.003120234
South Dakota	20	0.46 lbs	17,090	210	0.012287888
Tennessee	32	10.00 lbs	78,782	4,546	0.057703536
Texas	612	39.76 lbs	261,017	18,072	0.06923687
Utah	79	0.00 lbs	31,331	0	0
Vermont	67	2.67 lbs	8,676	1,215	0.140041494
Virginia	224	23.38 lbs	104,896	10,626	0.101300336
Washington	170	61.22 lbs	84,471	27,825	0.32940299
West Virginia	20	0.00 lbs	36,597	0	0
Wisconsin	209	93.33 lbs	92,728	42,421	0.457477784
Wyoming	15	0.00 lbs	12,033	0	0

ATTACHMENT 3
MERCURY SWITCH REMOVAL PROGRAM

STATE	Number of Participants	Total Mercury Recovered	Total Switches Available	Total Switches Recovered	Ratio Sw-A / Sw-R
2008 US Total	6,684	833.91 lbs	3,676,543	379,048	0.103099
Alabama	28	10.60 lbs	69,253	4,816	0.069542
Alaska	5	0.66 lbs	9,571	300	0.031345
Arizona	38	3.11 lbs	60,365	1,412	0.023391
Arkansas	219	5.45 lbs	31,613	2,478	0.078385
California	447	132.85 lbs	373,650	60,385	0.161608
Colorado	54	29.51 lbs	72,040	13,413	0.186188
Connecticut	32	3.83 lbs	39,988	1,741	0.043538
Delaware	20	0.00 lbs	8,867	0	0.000000
Florida	201	34.80 lbs	222,910	15,817	0.070957
Georgia	77	14.20 lbs	114,426	6,455	0.056412
Hawaii	13	0.33 lbs	12,615	152	0.012049
Idaho	32	1.01 lbs	21,472	457	0.021284
Illinois	356	24.03 lbs	158,290	10,922	0.069000
Indiana	398	51.34 lbs	109,129	23,335	0.213830
Iowa	363	8.85 lbs	62,225	4,023	0.064652
Kansas	37	1.03 lbs	40,110	469	0.011693
Kentucky	47	7.06 lbs	60,114	3,207	0.053349
Louisiana	299	1.37 lbs	55,566	623	0.011212
Maine	250	3.31 lbs.	15,716	1,502	0.095571
Maryland	54	4.12 lbs	58,039	1,874	0.032289
Massachusetts	217	11.21 lbs	75,500	5,096	0.067497
Michigan	114	36.18 lbs	173,692	16,447	0.094691
Minnesota	215	68.54 lbs	84,133	31,156	0.370318
Mississippi	61	2.20 lbs	31,005	999	0.032221
Missouri	123	14.99 lbs	76,660	6,812	0.088860
Montana	48	0.76 lbs	15,742	345	0.021916
Nebraska	23	1.33 lbs	28,860	603	0.020894
Nevada	8	2.64 lbs	20,490	1,200	0.058565
New Hampshire	44	5.43 lbs	16,128	2,467	0.152964
New Jersey	167	18.13 lbs	97,614	8,241	0.084424
New Mexico	17	0.00 lbs	25,750	0	0.000000
New York	496	77.53 lbs	150,472	35,241	0.234203
North Carolina	271	40.28 lbs	92,319	18,309	0.198323
North Dakota	13	5.06 lbs	13,424	2,299	0.171260
Ohio	236	22.48 lbs	187,038	10,219	0.054636
Oklahoma	39	0.74 lbs	52,602	337	0.006407
Oregon	65	7.15 lbs	42,586	3,251	0.076340
Pennsylvania	128	15.00 lbs	160,384	6,818	0.042510
Rhode Island	75	7.54 lbs	5,834	3,428	0.587590
South Carolina	68	9.09 lbs	50,849	4,133	0.081280
South Dakota	21	0.00 lbs	15,240	0	0.000000
Tennessee	52	10.05 lbs	70,246	4,569	0.065043
Texas	648	28.16 lbs	232,721	12,799	0.054997
Utah	82	21.91 lbs	27,899	9,959	0.356966
Vermont	67	1.70 lbs	7,724	772	0.099948
Virginia	227	7.96 lbs	93,419	3,616	0.038707
Washington	176	33.33 lbs	75,189	15,149	0.201479
West Virginia	20	0.00 lbs	32,695	0	0.000000
Wisconsin	227	47.08 lbs	82,661	21,402	0.258913
Wyoming	15	0.00 lbs	10,722	0	0.000000

ATTACHMENT 4
MERCURY SWITCH REMOVAL PROGRAM

Funding & Expenses

Fiscal Year	FY 2005-2006	FY 2006-2007	FY2007-2008
<i>Budget</i>	\$ 223,000	\$ 291,000	\$ 381,000
DENR Operating Acct.	\$ 89,500	\$ 29,000	\$ 29,000
Mercury Switch Removal Acct. / DOT	\$ 133,500	\$ 262,000	\$ 352,000
<i>Actual Cost</i>	\$ 167,000	\$ 257,000	\$ 372,000
Operating Cost	\$ 167,000	\$ 257,000	\$ 281,000
Switch Reimbursement	\$ 0	\$ 0	\$ 91,000*

* Reimbursements are not processed until mercury switches are received through ELVS therefore processing of reimbursement is inherently delayed. \$91,000 (= 18,200 mercury switches) was paid prior to June 30, 2008. The remaining (33,610 – 18,200 =) 15,410 mercury switches were paid in FY 2008-2009

ATTACHMENT 5
MERCURY SWITCH REMOVAL PROGRAM

STATE	Number of Participants	Total Switches Available	Ratio Participants to Avail. Switches	State %
US Total	6,684	3,676,543	0.18180122	100.000
Alabama	28	69,253	0.04043146	0.419
Alaska	5	9,571	0.05224115	0.075
Arizona	38	60,365	0.06295039	0.569
Arkansas	219	31,613	0.69275298	3.276
California	447	373,650	0.11963067	6.688
Colorado	54	72,040	0.07495836	0.808
Connecticut	32	39,988	0.08002401	0.479
Delaware	20	8,867	0.22555543	0.299
Florida	201	222,910	0.09017092	3.007
Georgia	77	114,426	0.06729240	1.152
Hawaii	13	12,615	0.10305192	0.194
Idaho	32	21,472	0.14903130	0.479
Illinois	356	158,290	0.22490366	5.326
Indiana	398	109,129	0.36470599	5.955
Iowa	363	62,225	0.58336681	5.431
Kansas	37	40,110	0.09224632	0.554
Kentucky	47	60,114	0.07818478	0.703
Louisiana	299	55,566	0.53809884	4.473
Maine	250	15,716	1.59073556	3.740
Maryland	54	58,039	0.09304089	0.808
Massachusetts	217	75,500	0.28741722	3.247
Michigan	114	173,692	0.06563342	1.706
Minnesota	215	84,133	0.25554776	3.217
Mississippi	61	31,005	0.19674246	0.913
Missouri	123	76,660	0.16044873	1.840
Montana	48	15,742	0.30491678	0.718
Nebraska	23	28,860	0.07969508	0.344
Nevada	8	9,571	0.08358583	0.120
New Hampshire	44	20,490	0.21473890	0.658
New Jersey	167	97,614	0.17108202	2.499
New Mexico	17	25,750	0.06601942	0.254
New York	496	150,472	0.32962943	7.421
North Carolina	271	92,319	0.29354737	4.054
North Dakota	13	13,424	0.09684148	0.194
Ohio	236	187,038	0.12617757	3.531
Oklahoma	39	52,602	0.07414167	0.583
Oregon	65	42,586	0.15263232	0.972
Pennsylvania	128	160,384	0.07980846	1.915
Rhode Island	75	5,834	1.28556736	1.122
South Carolina	68	50,849	0.13372928	1.017
South Dakota	21	15,240	0.13779528	0.314
Tennessee	52	70,246	0.07402557	0.778
Texas	648	232,721	0.27844500	9.695
Utah	82	27,899	0.29391734	1.227
Vermont	67	7,724	0.86742620	1.002
Virginia	227	93,419	0.24299125	3.396
Washington	176	75,189	0.23407679	2.633
West Virginia	20	32,695	0.06117143	0.299
Wisconsin	227	82,661	0.27461560	3.396
Wyoming	15	10,722	0.13989927	0.224

ATTACHMENT 6
MERCURY SWITCH REMOVAL PROGRAM

Program Effectiveness Calculations

National Ratio

Number of Hg Switches
Collected / Available

$$\begin{array}{l}
 7/1/07-12/31/07 \quad 585,174^* / [4,125,432 / 2] \\
 1/1/08-6/30/08 \quad + \underline{379,048} / [\underline{+3,676,543} / 2] \\
 \mathbf{964,222 / 3,900,988 = 0.24717}
 \end{array}$$

North Carolina Ratio

Number of Hg Switches
Collected / Available

$$\begin{array}{l}
 15,301 / [103,586 / 2] \\
 + \underline{18,309} / [\underline{+92,319} / 2] \\
 \mathbf{33,610 / 97,952 = 0.34313}
 \end{array}$$

* National # Switches Collected "1/1/07-12-31-07" minus "1/1/07-6/30/07" - [720,568 - 135,394 = 585,174]

1st half of MSR Program year

$$\begin{array}{l}
 585,174^* / (4,125,432 / 2) = .28369 \quad \& \quad 15,301 / (103,586 / 2) = .29543 \\
 \underline{\times 90\%} \\
 .25532 \quad < \quad .29543 \quad \quad \underline{\text{NC Goal met}}
 \end{array}$$

2nd half of MSR Program year

$$\begin{array}{l}
 379,048 / (\underline{3,676,543} / 2) = .20620 \quad \& \quad \underline{18,309} / (\underline{92,319} / 2) = .39665 \\
 \underline{\times 90\%} \\
 .18557 \quad < \quad .39665 \quad \quad \underline{\text{NC Goal met}}
 \end{array}$$

7/1/07 through 6/30/08

$$\begin{array}{l}
 \mathbf{964,222 / 3,900,988 = 0.24717} \quad \& \quad \mathbf{33,610 / 97,952 = 0.34313} \\
 \underline{\times 90\%} \\
 .22246 \quad < \quad .34313 \quad \quad \underline{\text{NC Goal met}}
 \end{array}$$