

MERCURY SWITCH REMOVAL PROGRAM

2011 ANNUAL REPORT

Presented to

The Environmental Review Commission

October 1, 2011



Division of Waste Management
Hazardous Waste Section
Mercury Switch Removal Program

North Carolina Department of Environment and Natural Resources

Beverly E. Perdue
Governor

Dee A. Freeman
Secretary
Department of Environment and Natural Resources

Dexter R. Matthews
Director
Division of Waste Management

Elizabeth Cannon
Chief
Hazardous Waste Section

1646 Mail Service Center
Raleigh, North Carolina 27699-1646
(919) 508-8400*

* Our main telephone number will change to (919)707-8200 effective Monday, October 24, 2011.

Mercury Switch Removal Program

Michael Brailsford

Program Supervisor
(919) 508-8419 or (704) 947-9512

<http://portal.ncdenr.org/web/wm/hw/programs/mecuryswitch>

TABLE OF CONTENTS

<i>I. EXECUTIVE SUMMARY</i>	1
<i>II. OVERVIEW</i>	1
<i>III. PROGRAM STAFFING</i>	1
<i>IV. NORTH CAROLINA'S MERCURY SWITCH REMOVAL PROGRAM</i>	2
<i>V. SUBJECT FACILITIES</i>	3
<i>VI. FACILITY ASSESSMENTS</i>	3
<i>VII. ENFORCEMENT & COMPLIANCE</i>	4
<i>VIII. FUNDING & EXPENSES</i>	4
<i>IX. SUMMARY</i>	4

LIST OF ATTACHMENTS

1. Organizational Chart	6
2. State-by-State Comparison of Program Effectiveness	7

MERCURY SWITCH REMOVAL PROGRAM

2011 ANNUAL REPORT

This annual report is presented to the Environmental Review Commission and the Senate and House of Representatives Natural and Economic Resources Appropriations Subcommittees pursuant to G.S. 130A-310.57. The report covers the activities of the Mercury Switch Removal Program from July 1, 2010 through June 30, 2011 (FY 2010-11).

I. EXECUTIVE SUMMARY

The Mercury Switch Removal Program has been operating for six years in the North Carolina Department of Environment and Natural Resources' (DENR) Division of Waste Management. The program continues to inspect the end-of-life vehicle dismantling, crushing and shredding facilities throughout the state. For FY 2010-11, the Mercury Switch Removal Program operates with a staff equivalent to three and one-half positions supplied by the Hazardous Waste Section's Compliance Branch through the part-time participation of nine field inspectors, four supervisors and an administrative assistant. The program's operating budget is funded by fees collected as a portion of the N. C. Department of Transportation (DOT) application for certificate of vehicle title fee. The program's total operating costs were \$448,000, which includes switch reimbursements (\$5.00 per mercury switch removed and recycled/disposed as Resource Conservation and Recovery Act (RCRA) "Universal Waste") totaling \$140,000 to the dismantlers, crushers and shredders. Program staff conducted 390 inspections at 338 covered facilities for compliance with state and federal RCRA regulations; one Warning Letter and one verbal warning was issued.

II. OVERVIEW

Through S.L. 2005-384, further amended by S.L. 2007-142, the General Assembly acted to reduce the amount of mercury entering the state's environment. As stated in G.S. 130A-310.51, the purpose of the program is to reduce the quantity of mercury released into the environment by removing mercury switches from "end-of-life" vehicles and by creating a removal, collection, and recovery program for those switches. Specifically, the law requires all vehicle dismantlers, vehicle recyclers, vehicle crushers and/or vehicle scrap processors to remove, collect, and recover mercury switches contained in "end-of-life" vehicles prior to crushing, shredding or smelting the vehicles.¹

To ensure compliance with requirements set out in G.S. 130A-310.50 through 310.57, DENR's Division of Waste Management's Hazardous Waste Section, created the Mercury Switch Removal Program (MSR Program). The MSR Program is coordinated through the Hazardous Waste Section's Compliance Branch.

III. PROGRAM STAFFING

The MSR Program has obligated resources to implement a statewide compliance and technical assistance program, and has provided resources for the administration of the reimbursement program.

¹ The mercury switches control convenience lighting in the trunk and under the hood.

- The MSR Program has implemented technical assistance and monitoring visits to 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, local government outreach and the Division of Waste Management’s website.
- The MSR Program has developed Site Safety Plans for MSR Program employees to ensure their safety.

For FY 2010-11, the program was implemented by field staff inspectors, an administrative assistant and a program supervisor. The program provides funding for three and one-half full-time equivalent positions. For greater coverage and efficiency, program duties are actually spread among nine field inspectors, four supervisors and an administrative assistant; MSR funding pays for the portion of each person’s time spent implementing the program. The MSR Program resides solely within the Hazardous Waste Section’s Compliance Branch. (See Attachment 1 for the Organizational Chart)

IV. NORTH CAROLINA’S MERCURY SWITCH REMOVAL (MSR) PROGRAM

As noted above, the focus of North Carolina’s MSR Program is safe and environmentally responsible removal, collection, storage and recycling of all convenience lighting mercury switches from end-of-life vehicles. North Carolina’s efforts receive support from a corporation formed by the major automobile manufacturers called End-of-Life Vehicle Solutions (ELVS). ELVS provides the following support to vehicle dismantlers/recyclers, vehicle crushers, and scrap processing facilities:

- 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.
- 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.
- 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 Resource Conservation and Recovery Act (RCRA) permits for management of the various shipments of mercury switches collected through the program.
- 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.
- Indemnification from liability for participating vehicle dismantlers, scrap processing facilities, vehicle crushers and others removing switches through this program once mercury switches are collected by the ELVS contractor. The manufacturers’ assumption of liability will not occur if

the a program participant fails to package the switches and/or assemblies in accordance with state law and ELVS requirements.

In conjunction with information supplied through ELVS, North Carolina's MSR Program staff gathered and 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 website (<http://www.wastenotnc.org>) under the MSR Program link and include, in part, the following:

- 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)
- mercury spill cleanup procedures,
- ELVS enrollment information,
- forms for the required recordkeeping and reporting,
- procedures for payment of the switch "bounty" (\$5 / switch),
- vehicle marking instructions, and
- the disposal procedure for recycling the mercury switches as Universal Waste.

To facilitate compliance, vehicle recyclers/dismantlers have the option of filing reports either electronically through the Internet or by standard mail. The uniform design of the ELVS-provided services for switch collection, transportation and recycling simplifies the mercury switch removal process and recycler reimbursement.

While the MSR Program statute only regulates convenience mercury lighting switches (hood and trunk lighting), the MSR Program does encourage the vehicle recyclers to remove the Anti-Lock Braking System (ABS) g-force (gravity detection) mercury switches found in a limited number of automobiles.

V. SUBJECT FACILITIES

All vehicle dismantlers/recyclers, vehicle crushers, or scrap processing facilities that process six or more vehicles in a calendar year 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 the MSR Program's reimbursement process, vehicle dismantlers/recyclers, vehicle crushers, or scrap processing facilities must register with ELVS and with North Carolina's MSR Program office. Currently there are 434 facilities registered as part of the MSR Program.

VI. FACILITY ASSESSMENTS

During FY 2010-11, MSR Program inspectors conducted a total of 390 inspections, visiting more than 338 facilities throughout North Carolina's 100 counties. The site visits were intended to evaluate whether the facility was subject to the 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 regulated requirements.

VII. ENFORCEMENT & COMPLIANCE

The vehicle dismantlers/recyclers, vehicle crushers, or scrap processing facilities are cooperative and have rapidly responded with corrective action in most cases when recommendations were made or minor deficiencies were cited. If minor deficiencies are not corrected in a timely and uniform response resulting in a return to compliance, a more advanced enforcement action can be taken, such as a Notice of Violation (NOV) or a Compliance Order (CO) with administrative penalty. One Warning Letter and one verbal warning were issued during the period between during FY 2010-11. No Compliance Orders or Notices of Violations were issued during this period.

VIII. FUNDING & EXPENSES

The MSR Program is funded by fees collected as part of the DOT application for certificate of vehicle title fee. One dollar of each \$40-per-vehicle title fee is placed in the Mercury Switch Removal Account in DENR. Fiscal Year (FY) 2010-11 revenues were approximately \$1,997,343. [Reimbursement paid to the vehicle dismantlers/recyclers, vehicle crushers, or scrap processing facilities, for removal of the mercury switches with proper recovery and disposal (\$5.00 per switch).] Program costs for FY 2010-11 totaled \$448,076.

IX. SUMMARY

In FY 2010-11, the fourth year of the MSR program, North Carolina continues to exceed the performance goal established by the General Assembly. North Carolina participants in the MSR Program removed, collected and shipped for recycling/disposal 45,607 switches. The number of switches estimated to be available statewide was 92,500, resulting in a collection efficiency rate of 49.30%.² For the same time period, the national program collected 666,562 switches from an estimated total available nationally of 3,437,000, resulting in a national collection rate of 19.39%.³ North Carolina thus achieved a collection efficiency rate that is 254% of the national rate, well exceeding the established state goal of 90% of the national rate established by the General Assembly in NCGS 130A-310.57 (2).

North Carolina ranked third in the nation with respect to mercury switch collection rate during FY 2010-11 and fifth in the nation with respect to the number of participating salvage facilities. Since the start of the program, more than 616 pounds of mercury (from more than 280,350 switches) have been prevented from being released to the environment.

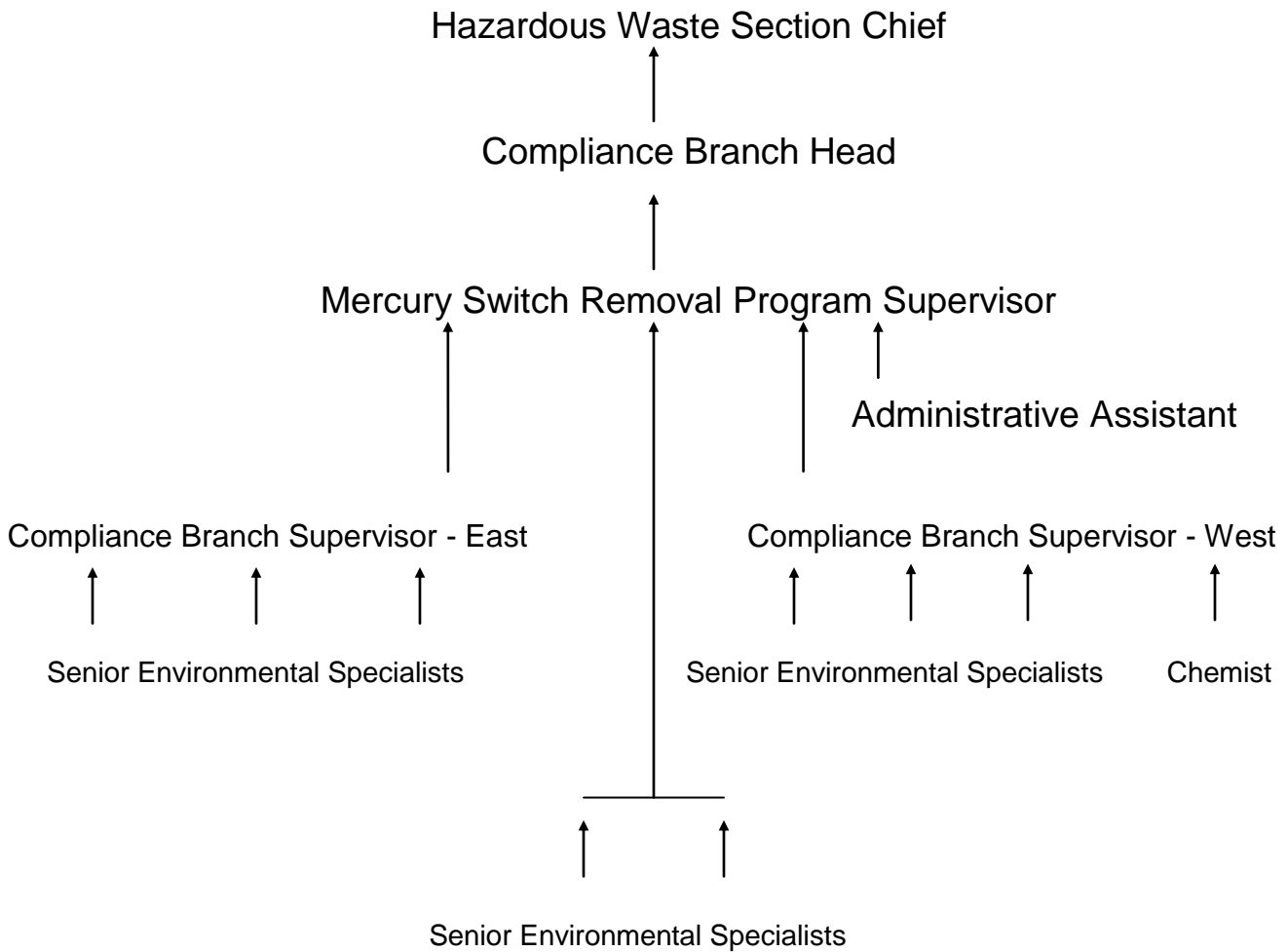
² Number of switches removed (45,607) divided by the number of switches available (92,500) times 100 equals the North Carolina switch removal efficiency rate (49.30%).

³ Number of switches removed (666,562) divided by the number of switches available (3,437,000) times 100 equals the national switch removal efficiency rate (19.39%).

ATTACHMENTS

ATTACHMENT 1

ORGANIZATIONAL CHART



ATTACHMENT 2
State-by-State Comparison of Program Effectiveness

STATE	Number of Participants	Total lbs. Mercury Recovered	Estimated Number of Switches Available	Total Switches Recovered	Percent of Switches Removed
FY 2010-11 US Total	9,240	1,465.32	3, 416,500	664,690	19.46
Alabama	91	4.64	83,000	2,108	2.54
Alaska	14	0	9,500	0	0.00
Arizona	78	15.31	56,500	6,959	12.32
Arkansas	236	16.70	36,000	7,593	21.09
California	562	272.39	339,000	123,812	36.52
Colorado	81	53.37	50,000	24,257	48.51
Connecticut	58	10.67	43,500	4,851	11.15
Delaware	29	1.35	9,000	615	6.83
Florida	344	58.65	156,000	26,660	17.09
Georgia	158	7.37	96,500	3,352	3.47
Hawaii	20	0	8,500	0	0.00
Idaho	60	7.83	23,000	3,559	15.47
Illinois	411	82.68	121,000	37,581	31.06
Indiana	459	65.95	56,500	29,975	53.05
Iowa	362	32.22	61,500	14,645	23.81
Kansas	83	8.14	44,500	3,698	8.31
Kentucky	111	16.04	65,500	7,291	11.13
Louisiana	322	2.05	58,000	931	1.61
Maryland	120	15.62	49,500	7,100	14.34
Massachusetts	193	36.55	63,000	16,612	26.37
Michigan	288	68.71	179,000	31,230	17.45
Minnesota	264	106.71	67,000	48,506	72.40
Mississippi	79	3.16	33,000	1,435	4.35
Missouri	201	15.29	82,500	6,948	8.42
Montana	75	5.40	19,000	2,456	12.93
Nebraska	39	3.74	31,000	1,699	5.48
Nevada	31	2.49	19,500	1,131	5.80
New Hampshire	67	4.83	19,000	2,196	11.56
New Jersey	199	21.68	109,500	9,856	9.00
New Mexico	55	6.50	27,000	2,956	10.95
New York	550	47.72	198,000	21,692	10.96
North Carolina	434	100.34	92,500	45,607	49.30
North Dakota	30	2.05	16,000	930	5.81
Ohio	341	39.51	179,000	17,960	10.03

Oklahoma	93	4.51	57,500	2,052	3.57
Oregon	105	15.47	53,000	7,034	13.27
Pennsylvania	333	15.77	158,500	7,166	4.52
Rhode Island	76	7.79	10,000	3,542	35.42
South Carolina	123	8.31	48,000	3,778	7.87
South Dakota	34	6.24	17,000	2,838	16.69
Tennessee	129	16.90	80,500	7,680	9.54
Texas	811	74.99	194,500	34,086	17.52
Utah	127	22.08	25,000	10,038	40.15
Vermont	68	0.80	7,000	362	5.17
Virginia	282	33.70	79,000	15,317	19.39
Washington	243	61.35	69,500	27,885	40.12
West Virginia	48	2.24	28,000	1,016	3.63
Wisconsin	295	55.99	77,500	25,451	32.84
Wyoming	27	0.54	9,500	244	2.57