



Michigan Department of Agriculture

Laboratory Division

Consumer Protection Section Annual Report 2006

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Consumer Protection Section Mission Statement

Prevent economic fraud and deception concerning weights and measures, motor fuels quality, labeling and advertising of all commodities.

Be responsible for environmental issues as they relate to the distribution of gasoline products.

Provide National Institute of Standards and Technology traceability on the state's standards and measures.

Provide regulatory resource expertise to the public, industry, and government.

**Michigan Department of Agriculture
 Laboratory Division • Consumer Protection Section
 2006 Annual Report**

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Metrology Laboratory

The E.C. Heffron Metrology Laboratory calibrated more than 10,500 standards during fiscal year 2006. This included internal standards for the State of Michigan, official standards for field investigations, and the overall monitoring of commerce including approximately 150 industry customers. External customers utilizing this “fee-for-service-support” included other state metrology laboratories, registered service agencies, automotive industry, pharmaceutical manufacturers, and a variety of other companies. The Lab also participated in nine “round-robin” inter-laboratory comparisons where all test data is reviewed and compared against official data gathered from other states throughout the Midwest. These comparisons assist the Lab in monitoring its uncertainty controls to ensure traceability to official U.S. standards of length, mass, and volume.



The E. C. Heffron Metrology Laboratory is nationally accredited and provides the most precise calibration services to industry and laboratories across the country.

The Lab received continued recognition of traceability from the Weights and Measures Division (WMD) at the National Institute of Standards and Technology (NIST). As part of its program to encourage a high degree of technical and professional competence, the NIST/WMD developed performance standards and formalized procedures for recognition of state legal metrology laboratories on a voluntary basis. Certificates of Measurement Traceability are issued upon evaluation of the Lab’s ability to make reliable metrological measurements (principally mass, volume, length, and temperature).

The Lab also maintained its National Voluntary Laboratory Accreditation Program (NVLAP) accreditation. NVLAP provides third-party accreditation to testing and calibration laboratories. NVLAP’s accreditation programs are established in response to Congressional mandates or administrative actions by the federal government or from requests by private-sector organizations. NVLAP is in full conformance with the standards of the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC), including ISO/IEC 17025 and Guide 58. Michigan’s scope of accreditation can be found online at <http://ts.nist.gov/ts/htdocs/210/214/scopes/2004080.pdf>.

Benefits of the Lab include: ensuring accuracy and stability in the commercial measurement system; technical support of other state agencies; the facilitation of high tech and precision manufacturing; protecting Michigan’s roads from overweight vehicles through the use of portable wheel load scales; and the promotion of safety.

Laboratory Activities

Mass Standards Testing Results

Mass standards are test weights used by industry, service companies, and enforcement programs to determine the accuracy of weighing devices. They vary in size from 6,000 pounds to one micropound and from 500 kilograms down to one milligram.

	<u>Approved</u>	<u>Adjusted</u>	<u>Condemned</u>
TOTAL	9,304	888	39

Metrology –
“the science of measurement” – provides the uniform standards
upon which all other measurements utilized in commerce are based.

Michigan's standards are traceable to the U.S. Standards maintained at the National Institute of Standards and Technology in Gaithersburg, Maryland.



An MDA laboratory metrologist verifies the accuracy of a five gallon test measure used to inspect gasoline pumps across the state.

Volumetric Standards Testing Results

Volumetric standards are provers used in the testing of liquid measuring devices such as gas pumps, fuel oil, and liquefied petroleum gas (LPG) measuring meters.

	<u>Approved</u>	<u>Adjusted</u>	<u>Condemned</u>
TOTAL	206	153	1

In addition, the Laboratory calibrated several internal standards totaling: 151 mass, seven volume, and nine thermometers. The Laboratory also calibrated two linear standards, eight thermometers, and 598 wheel load weighers used in primary and secondary road load enforcement for state and local jurisdictions.

Weights and Measures Program

MDA's Weights and Measures Program is the sole entity providing both technical assistance and enforcement to all Michigan businesses and consumers. All products bought and sold by weight, measure, or count, falls under the jurisdiction of MDA, as well as commercial weighing and measuring devices. Consumer packages are tested for accuracy, and compliance with labeling and advertising requirements. Internet transactions are also within this program's responsibilities.

Whether you are buying gasoline to get to work or drive the children to school, diesel to transport products across the state or the country, or supplies for your home, farm or recreational needs, Michigan's Weights and Measures program is ensuring equity and fair competition in the marketplace.



A senior Weights and Measures inspector makes a video record of the interior of a commercial measuring device. Inspections are key to determining if devices are of proper design and adequately maintained.

In recent years, this program has prosecuted businesses deliberately cheating their customers, while providing the technical expertise to industry members to facilitate the use of the latest technological advances and promoting Michigan's economy.

The Weights and Measures Program has worked closely with other state and federal agencies when Michigan consumers were being taken advantage of and, worked with local consumer and industry associations to promote and protect the state's economic interests.

Weights and Measures staff investigated more than 2,400* consumer complaints related to devices and products used, bought, and sold in 2006. It is through these investigative efforts, special projects, and general inspections that the Weights and Measures Program protects the economic interests of both the consumer and business.

Weights and Measures Information and Statistics **Weights and Measures Undercover Activities**

Consumer Protection Section employees are equipped with unmarked vehicles holding calibrated false tanks used to conduct unannounced dispenser accuracy checks. Following are the results of these unannounced purchases during Fiscal Year (FY) 2006 :

Number of Purchases	380
Number of Shortages \geq 1.0%	12
Percentage of Purchases \geq 1.0% Short Measure	3.2%



A field metrologist verifies the accuracy of a counter scale at a market deli. Ensuring fairness in food purchases benefits all Michigan consumers.

Weights and Measures Complaints Investigated

Item Pricing and Accuracy	354
Retail Motor Fuels Dispensers	*1,976
Short Weight/Measure	31
All Other Complaints	61
TOTAL	2,422

* Gas complaints were jointly investigated with MDA's Motor Fuels Quality Program.

Weights and Measures Information and Statistics **Disposition of P. A. 283 Violations**

Compliance Meetings	8
Warning Letters	67
Consent Agreements	24
Prosecutions	1
Seizures (Short Weight/Measure)	14
Seizures (Amount/lbs)	515,876
Seizures (Value)	\$243,547
Fine Amounts	\$135,785

Certificates Issued

Livestock Weighmasters	9
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Section staff work with industry leaders and individual businesses to ensure good manufacturing practices are followed preventing short measure or short weight products from entering the marketplace.

State Officials' Inspections

Net Content Inspections

Field	<u>Surveys</u>	<u>Packages Approved</u>	<u>Packages Rejected</u>	<u>Compliant</u>	<u>Lots Approved</u>	<u>Lots Rejected</u>	<u>Compliant</u>
	350	3,506	760	78.32%	61	243	25.10%

<u>Commercial Device Type</u>	<u>Approved</u>	<u>for Repair</u>	<u>for Use</u>	<u>Compliant (%)</u>
Agri Chemical Meter	0	0	0	N/A
Animal/Livestock Scale	6	0	2	75
Belt Conveyor Scale	3	0	0	100
Counter Scale	742	48	6	93.22
Crane Scale	8	0	0	100
Fuel Truck Meter	237	20	50	77.20
Hopper Scale	4	0	0	100
LPG Meter (25 GPM or less)	0	0	0	N/A
LPG Meter (over 25 GPM)	131	6	25	80.86
Mass Flow Meter	1	0	0	100
Monorail	1	0	0	100
Multiple Grade Gasoline Dispenser	8,622	370	1,213	84.49
Person Weighing Scale	16	0	0	100
Platform Scale (1,500 lbs or less)	25	2	1	89.29
Platform Scale (over 1,500 lbs)	20	2	0	90.91
Railroad Track Scale	0	0	0	N/A
Single Grade Gasoline Dispenser	12,865	759	1,103	87.36
Single Product Meter (over 25 GPM)	413	22	56	84.11
Terminal Meter	15	0	1	93.75
Vehicle Scale (2 section)	47	1	1	95.92
Vehicle Scale (5+ section)	77	12	16	73.33
TOTAL	23,233	1,242	2,474	86.21

<u>Miscellaneous Devices/Standards</u>	<u>Approved</u>	<u>Condemned for Repair</u>	<u>Condemned for Use</u>	<u>Compliant (%)</u>
Weights (Field Tested)	14	0	0	100

Registered Serviceperson Activities

Registration Activities

Agencies Registered**	129
Technicians Registered**	461
Service Tests Administered	270



Staff members conduct net content verification testing of packages at a manufacturing facility in order to ensure accurate net weight.

Devices Placed-In-Service by Registered Agencies

Retail Motor Fuel Dispensers	909
All Other Meters	153
Small Capacity Weighing Devices	1,804
Large Capacity Weighing Devices	259

Audit of Serviceperson Activities

	<u>Number Conducted</u>	<u>Compliance Rate</u>	
Internal	2,254	93.6%	
Field	661	90.6%	

Currently 142 agencies and 483 technicians are successfully registered under the Serviceperson Program.

Motor Fuels Quality Program

Gasoline not produced in Michigan enters the state by barge, transport truck, and pipeline through one of 32 major terminals. In November 2004, MDA's Motor Fuels Quality Program noted numerous endpoint violations that could not be explained at the retail level. High endpoints, above the legal limit of 437°F, can cause engine deposits, crank case dilution, and higher emissions. In 2005, an increase was also noted in vapor liquid ratio temperatures and excessive ethanol content violations leading to poor quality performance and higher emissions. When violative fuel which may have originated at a terminal was found at retail, the product was traced back to the terminal and investigated. A proactive routine terminal inspection program was implemented until FY 2006.

In 2006, the Motor Fuels Quality Program received five additional staff members to monitor the marketplace and was able to initiate a random terminal quality inspection program. The FY 2006 program resulted in a stop sale of 850,000 gallons of regular gas at one terminal and a \$5,000 fine at a second terminal for endpoint violations. Fines were also issued for excessive alcohol content due to repeated problems with loading equipment.

Products flow through the pipelines as a continuous stream 24 hours a day. Diesel, with an endpoint temperature as high as 650°F, has a point in the pipeline at which it interconnects with gasoline. This interface between gasoline and diesel is removed from the product stream and referred to as "Transmix."



A field metrologist samples a terminal storage tank for quality assurance in order to prevent the introduction of substandard gasoline into the marketplace.

Transmix does not meet the specification for either product. Many terminals blend 0.25 percent of Transmix back into the regular gasoline because it is more economical than shipping it out to be reprocessed. The 0.25 percent has been approved by the United States Environmental Protection Agency (EPA) as being non-harmful to the environment. The EPA tolerance is not a variance or waiver from quality standards and the product must meet all standards for gasoline.

Motor Fuels Quality staff worked in conjunction with the lab to discover that as little as 0.25 percent diesel can raise the endpoint temperature by 2° F and the addition of 0.5 percent will raise the endpoint 9°F. Since the Transmix is never tested, it is unknown how much diesel fuel is actually in the mixture. Adding this to a gasoline product, already at 437°F for endpoint will throw the product off specification.

Violations found in FY 2006 occurred when 0.25 percent Transmix was injected into a gasoline tank that had already had previous injections yielding 0.5 percent or 0.75 percent Transmix which caused an endpoint temperature violation. In one case, the operators did not test the Transmix, but felt the Transmix did not contain “that much” diesel so more than 0.25 percent could be put into the tank.

Fiscal Year 2006 terminal visits also found variations in the ethanol blending with some using manual sequential method that can lead to uncertain blend ratios. Some terminals also added butane to gasoline during seasonal changes when the vapor pressure was allowed to be higher. All of these procedures, if performed properly can produce quality fuel but can also be sources of quality problems if strict procedures are not followed.

The program expansion to the terminal level has led to increased quality awareness among operators with many implementing a change in procedures to ensure the product meets Michigan standards. This expansion not only protects the consumers who purchase this product, but the retailer who unknowingly accepted receipt of substandard product.

Motor Fuel Quality Information and Statistics

Establishments Licensed

Gasoline Retail Outlets	4,928
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Stop Sale Information

Excess Water in Underground Storage Tank	69
Failure to Meet Quality Standards	39

Complaint and Motor Fuels Quality Hotline Information

Complaints Received through 1-800-MDA-FUEL	2,772 *
Gasoline Quality Complaints Investigated	302

Disposition of P.A. 44 Violations

Compliance Meetings	70
Warning Letters	605
Administrative Fines	311
Prosecutions	1
Fine Amounts	\$140,380

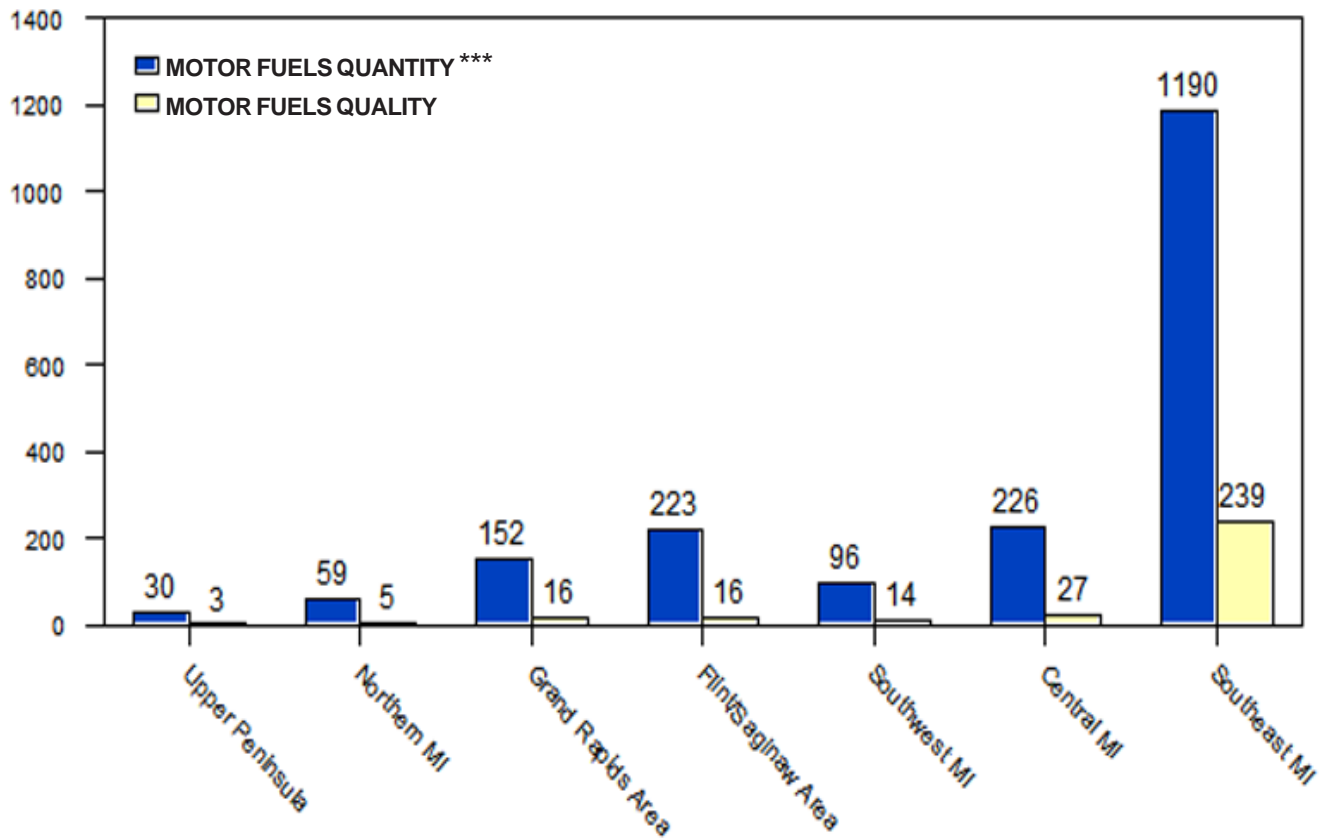


A field metrologist checks a station's gasoline storage tank for water. Station operators must ensure that consumers do not purchase fuel contaminated with water.

**Note: Complaints outside of the program's responsibility, received via the MFQ hotline, were forwarded to the appropriate agency. All gasoline quality complaints were investigated.*

Motor Fuel Quality Information and Statistics

Complaints Investigated by Region



*** Jointly investigated with the Weights and Measures Program.

Samples Procured

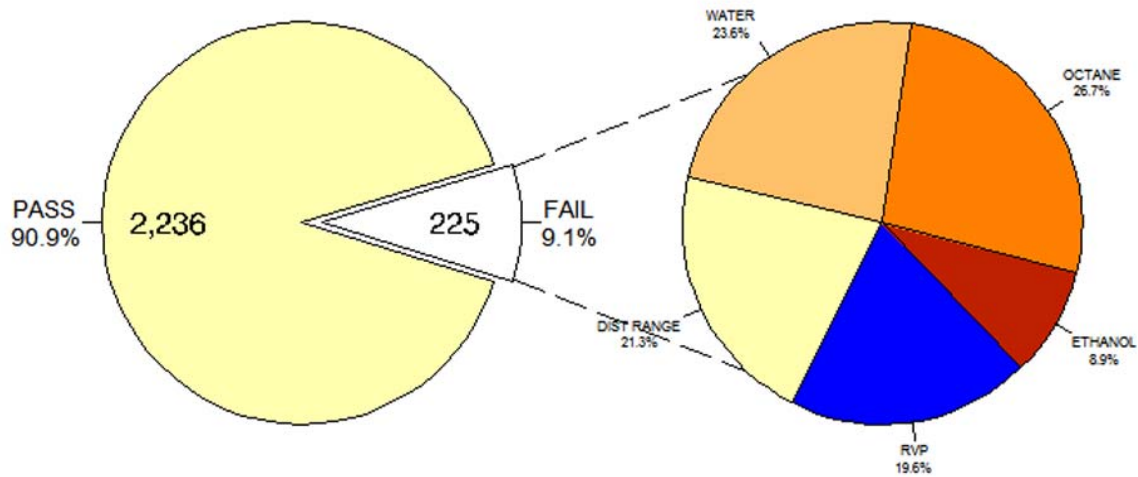
In addition to licensing, inspection, and complaint investigation responsibilities, Motor Fuels Quality Program staff regularly procures gasoline samples for quality testing. Following are the results for FY06:

<u>Results</u>	<u>Number</u>
Approved	2,236
Warning Letters	205
Non-actionable	2
Administrative Fines	3
Investigations In Progress	29
Total	2,475



A field metrologist ensures gasoline sold in the Upper Peninsula meets performance standards.

Violation Rate and Breakdown



Samples were procured for the following reasons: a monthly random/stratified program, on-going investigations, consumer complaints, and to assure establishment compliance when there has been a previous violation.

Sample Results by Sampling Method

<u>Sampling Reason</u>	<u>Number of Samples</u>	<u>Number of Violations</u>	<u>Compliant (%)</u>
Routine	771	53	93.1
Complaint	314	62	80.3
Re-sample	169	27	84
Investigation	53	11	79.2
Confidential/Undercover	172	12	93
Other	734	61	91.7
Delinquent License	126	6	95.3
Quality Risk Assessment	136	7	94.9
TOTAL	2,475	239	90.3

A senior field metrologist monitors gasoline octane in the field. Field octane screening detects substandard fuel and a "stop sale" may be ordered until the discrepancy is corrected.



Sample Results by Octane ((R+M)/2)

<u>Octane (AKI)</u>	<u>Number of Samples</u>	<u>Number of Violations</u>	<u>Compliant (%)</u>
86	11	0	100
87	1,295	82	93.7
88	5	0	100
89	459	38	91.7
90	2	1	50
91	6	1	83.3
92	124	14	88.7
93	503	85	83.1
94	68	16	76.5
Other	2	1	50
TOTAL	2,475	239	90.3

Sample Results by Region

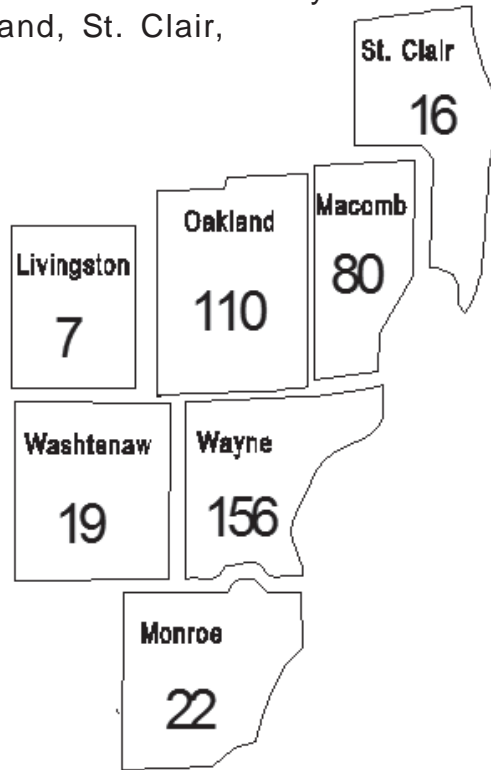
<u>Region</u>	<u>Number of Samples</u>	<u>Number of Violations</u>	<u>Compliant (%)</u>
Upper Peninsula	309	22	92.9
Northern Michigan	199	12	94
Grand Rapids Area	173	16	92.5
Flint/Saginaw Area	314	24	92.4
Southwest Michigan	125	13	89.6
Central Michigan	288	18	93.8
Southeast Michigan	1,062	131	87.7
TOTAL	2,475	239	90.3

Vapor Recovery and Reduction Program

In FY 2006, the Motor Fuels Quality Program monitored gasoline volatility at dispensing facilities located in Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne counties. The vapor pressure of the gasoline dispensed in these counties from June 1 to September 15, 2006 were prohibited from exceeding 7.8 pounds per square inch for conventional gasoline and 8.8 pounds per square inch for gasoline containing 10 percent ethanol. The remainder of the state was restricted to no more than nine pounds per square inch during the summer months. By limiting the evaporative tendencies of the gasoline in southeast Michigan, the state reduced the amount of volatile organic compounds emitted into the atmosphere by 28 tons per day. Not only did these efforts assist southeast Michigan in maintaining the National Ambient Air Quality Standards established by the United States Environmental Protection Agency, but consumers realized a slight fuel savings as more fuel was maintained for use within the vehicle's operating system.

As part of the Vapor Recovery and Reduction Program, staff performed field audits from June 1 through September 15, 2006 on gasoline dispensed in the seven-county ozone attainment area (Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne counties).

Number of Field Audits and Samples Per County



Field Audit and Sample Results*

	<u>Field Audits</u>	<u>Official Samples</u>	<u>TOTAL</u>
Number of Establishments*	412	317	642
Number of Audits Conducted*	473	410	883
• Overall Establishments in Violation:	22		
• Establishment Violation Rate:	3.43%		

* When establishments were found in violation, multiple audits were conducted; and at some establishments multiple samples were collected.

Clean air is important to Michigan's environment and citizens. Monitoring gasoline evaporation restrictions helps reduce the release of 28 tons of smog-causing compounds per day.



Field Audits and Samples without Ethanol (7.8 psi RVP limit)

<u>Octane</u>	<u>RVP Average</u>	<u>Number Collected</u>	<u>Number of Violations</u>
86	-	-	-
87	7.53	139	8
88	-	-	-
89	7.62	21	3
90	8.31	1	1
91	-	-	-
92	-	-	-
93	7.58	20	2
94	-	-	-
TOTAL	7.76	181	14

Increasing fuel prices continue to raise consumer awareness at the pump.

Field Audits and Samples with Ethanol (8.8 psi RVP limit)

<u>Octane</u>	<u>RVP Average</u>	<u>Number Collected</u>	<u>Number of Violations</u>
86	-	-	-
87	8.63	212	1
88	-	-	-
89	8.51	19	0
90	-	-	-
91	-	-	-
92	8.49	2	0
93	8.43	21	0
94	-	-	-
TOTAL	8.52	254	1

Section staff tested more than 24,000 devices in FY 2006.

Inspections are key to determining if devices are of proper design and adequately maintained.

A field metrologist checks a station's pumps to ensure accuracy in measurement.



STATE OF MICHIGAN



Executive
Office

Jennifer M. Granholm
Governor

CERTIFICATE OF PROCLAMATION

On behalf of the citizens of Michigan, I, Governor Jennifer M. Granholm hereby proclaim the week of March 12, 2006, as

Weights and Measures Week

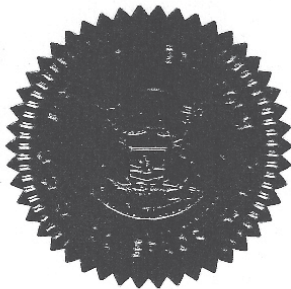
Whereas, The Weights and Measures Program of the Michigan Department of Agriculture Laboratory Division serves to meet the public need of standard weights and measures in the State of Michigan; and,

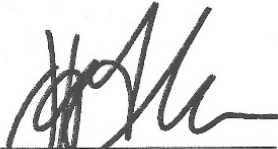
Whereas, The employees of the Weights and Measures Program are responsible for ensuring that all weighing and measuring devices used in commerce are accurate in both their design and operation; and,

Whereas, Weights and measures activities have an estimated economic impact of over \$170 billion in Michigan annually; and,

Whereas, Each year the first week in March is set aside to commemorate the enactment of our nation's first Weights and Measures Law in 1799 and to increase public awareness of the importance of this law; and now therefore be it,

Resolved, That I, Jennifer M. Granholm, Governor of the State of Michigan, do hereby proclaim the week of March 12, 2006, as Weights and Measures Week in Michigan in conjunction with the national celebration of the 207th anniversary of our nation's first Weights and Measures Law.




Jennifer M. Granholm
Governor



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