



Wicomico County, Maryland

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Internal Auditor

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Internal Auditor's Report

The County Council and County Executive of Wicomico County, Maryland:

Pursuant to Section 305(D) of the Wicomico County Code and Council Resolution No. 78-2009, the Office of the Internal Auditor (IA) has conducted an Audit of the Wicomico County Fuel Inventory System. A report is submitted herewith. The purpose of the audit was to determine the adequacy of procedures and controls along with the level of compliance with those procedures and controls for the process of accounting for fuel usage in Wicomico County through the established Fuel Inventory System.

IA conducted the audit with due professional care, and IA planned and performed the audit to obtain reasonable assurance about whether the current Fuel Inventory System practices are in compliance with applicable policies and procedures and whether those policies and procedures are adequate to obtain an acceptable level of control.

The audit revealed an electronic fuel system with some checks and balances in place implemented by the administrators of the Fuel Inventory System along with an adequate level of compliance with the rules. Adequate compliance indicates that a number of findings, some of which are significant, have been made. IA identifies several findings in subsequent sections of this report that bear discussion.

IA extends appreciation to Management and Staff in all Departments tested for their timely assistance, cooperation, and candid assessment of the Fuel Inventory System.

Respectfully submitted,

J. Stephen Roser, CPA
Internal Auditor

Contents

Internal Auditor’s Report	1
Contents	2
Audit Report.....	3
Background	3
Wicomico County Fuel System Inventory Program	3
Audit Objective	3
Scope of the Audit.....	3
General Statistics and Highlights	4
Conclusion.....	6
Schedule of Findings and Recommendations/Management Response	6
Auditor’s Closing Remark.....	9
Appendix I – Billing Analysis for March 2011.....	10
Appendix II – Inventory Analysis.....	11
Appendix III – Management Response	12

Audit Report

Background

Wicomico County Fuel System Inventory Program

Wicomico County utilizes an automated diesel fuel and unleaded gasoline dispensing system manufactured by Syn-Tech Systems, Inc. called Fuelmaster Plus¹ to account for fuel use. The system consists of two parts. The first is an electronic pumping device. A second electronic device installed directly on vehicles and equipment is known as the AIM2² unit. The pumping device wirelessly reads the AIM2 unit for each vehicle, or piece of equipment, and provides computer tracking of fuel use and other information from the vehicle's electronic system. Reports generated from computerized tracking are then available to monitor fuel use, perform billing to various users, track fuel inventory, and provide accountability. Alternatively, the County may provide the user with a "prokey" device³. The Fuelmaster electronic pumping system reads the prokey and allows fueling. A prokey is assigned to a vehicle or piece of equipment, but is not physically attached to any particular vehicle or piece of equipment.

Audit Objective

The objectives of the audit are to:

1. Determine that proper internal controls are in place to prevent abuse
2. Ensure that all issues and receipts are recorded and authorized by responsible management⁴
3. Validate that fuel is being properly charged to users

Scope of the Audit

The audit period examined, on a test basis, was from March 1, 2011 to March 31, 2011. All Fuelmaster transactions for the period were reviewed. IA conducted observations, interviews, and inquiries with appropriate personnel. IA observed delivery of fuel on 4/26/11 and month-end inventory on 5/2/2011. Record keeping in the departments of the top ten fuel users was examined and discussions were held with those responsible for the records. Additionally, IA examined, on a test basis, various documents and electronic system information pertaining to, but not limited to, the following:

- Fuelmaster Plus User Manual
- Various data reports from Fuelmaster Plus Program
- Internal financial data
- Records maintained by selected Departments
- Inventory records
- Billing records
- Electronic gate usage records at Roads Department
- Security camera images
- Human Resource records

¹ For more information on Fuelmaster Plus see <http://www.syntech-fuelmaster.com/products/fleet/plus.asp>

² The AIM2 units are known locally as "fuel rings". The unit consists of several components one of which is a visible electronic ring installed over the vehicle's fuel intake port

³ A prokey device is a small plastic wand that fits on a key ring and is programmed by the administrator for a particular vehicle, piece of equipment, or storage can (e.g. "gas can for weed whackers"). It is read electronically by the pumping device and usage is applied in the database according to administrator setup

⁴ Issues and receipts functions are processed electronically through the Fuelmaster Plus system

Other than the time period tested, the scope was open ended with concentration on internal control procedures, adherence to those procedures, and examination of the data available for the period. In addition to transaction testing, interviews were held with key personnel in order to understand and evaluate record keeping methods, significant processes, controls, and risks prevalent in the Fuel System Program⁵.

General Statistics and Highlights

The following chart shows March fuel usage by user group. The values are from Fuelmaster Data.

<u>Group</u>	<u>Gallons</u>
Wicomico County Solid Waste	17,866
Wicomico County Sheriff's Office	7,547
Wicomico County Roads	5,487
Lower Shore Enterprises ⁶	4,499
Recreation & Parks Service	1,470
Health Department	624
Wicomico County Dept. of Corrections	597
Salisbury-Ocean City: Wicomico Regional	336
Environmental Health	324
Department of Emergency Services	323
Wicomico County Housing Authority	224
Wicomico County Public Works	173
Office of State's Attorney for Wicomico	160
Wicomico County Executive	151
Bookmobile	132
Wicomico Youth & Civic Center	130
Retired Vehicles ⁷	122
Wicomico County General Services	98
Wicomico County Humane Society	85
Wicomico County Planning & Zoning	48
Wicomico County Council	35
Wicomico County Tourism	16
Local Management Board	14
Weed Control	-
IT Department	-
Wicomico County Mosquito Control	-

⁵ Please note that, as provided in the Audit Plan, the scope of the audit was adjusted from its original form to update the parameters with respect to preliminary observations and the nature of the recently installed Fuelmaster System

⁶ User groups in red are billed separately by Roads Department

⁷ Retired vehicles user group is a repository for retired vehicles. At the suggestion of the system manufacturer, retired vehicles are moved to this group to prevent loss of vehicle history.

Data reveals that from the period March 1, 2011 to March 31, 2011 Wicomico County used 40,461 gallons of unleaded gasoline and diesel fuel at a cost of \$128,840. Fuel billing analysis⁸ for March 2011 showed a positive variance of \$423.41. Month-end inventory analysis⁹ for April revealed a gasoline variance of -17 gallons (immaterial) and a diesel fuel variance of -145 gallons (3%).

Extensive observation and review both in the field and through data mining comprised a major part of this audit. IA offers comments on many of the procedures in a subsequent section of this report. IA performed the following tests and observations with satisfactory¹⁰ results:

- Vehicle fuel usage for reasonableness
- Field work - recordkeeping
- Delivery observation
- Month-end inventory observation
- Fueling process
- Security camera testing
- After hours gate code log
- Usage by Department
- High-end users testing for reasonableness
- Electronic backup of data

IA performed the following tests and observations with adequate¹¹ results:

- Internal Control systems and procedures
- AIM2 unit installation compliance

⁸ See appendix I for details of billing analysis

⁹ See appendix II for details of inventory analysis

¹⁰ For the purposes of this audit, IA uses a three-tier grading system recommended by the International Professional Practices Framework (IPPF) as expressed by the IPPF Practice Guide issued March 2009. The three tiers are Inadequate System of Internal Control, Adequate System of Internal Control, and Satisfactory System of Internal Control. Satisfactory findings indicate that overall controls are satisfactory, although some enhancements may be recommended. It is the highest rating on the scale.

¹¹ According to IPPF Practice Guide issued March 2009: "Adequate system of internal control means that findings are subject to reservations. A number of findings, some of which are significant, have been raised. Where action is in progress to address these findings and other issues known to management, these actions may be at too early a stage to allow a satisfactory audit opinion to be given."

Conclusion

Based on the considerable information gathered in this process:

1. The administrative oversight procedures in place are at an adequate level of internal control for the stated purposes.
2. The Fuelmaster System controls issues and receipts electronically in a satisfactory manner. Compliance with the installation of the AIM2 systems is ongoing and currently at an adequate level of internal control.
3. The process of charging fuel to departments and users is at a satisfactory level of internal control.

IA recommends a review of internal control for the fuel system with an eye toward the creation of a procedures manual for handling and accounting for the fuel distribution to the County. IA (with Council's permission) stands ready to review and assist in the process. Roads Department, Solid Waste, and the Sheriff's Office are in the process of installing the AIM2 units on vehicles and it is recommended that the process continue as started. IA also recommends that all departments review compliance with AIM2 unit installation in an effort to make sure all eligible vehicles and equipment have units installed. IA further recommends monitoring and follow-up on compliance and internal control issues within a reasonable period. Another Fuel System Inventory Audit should be scheduled six to nine months after compliance and internal control issues are addressed.

Schedule of Findings and Recommendations/Management Response

This extensive review of the Fuel Inventory System for Wicomico County revealed the makings of a good system of internal control and accountability. Some work remains to bring the system into compliance with control standards and the tools are available to do so. IA would also like to acknowledge the positive attitude and concern shown in all departments interviewed related to accountability and inventory control. The findings listed below represent some key issues that warrant discussion.

1. Internal Control

The Fuelmaster System contains an imbedded structure for a satisfactory system of internal control. IA recommends creation of a user guide to standardize procedures and controls to form a useful roadmap that provides users and management with the tools to maintain a satisfactory level internal control. The user guide should focus on separation of duties and other processes to facilitate internal control standards for the operation of the Wicomico County fuel system. Once a guide is completed, it becomes easier to implement an internal control program on an incremental basis. IA noted, and would like to emphasize, that many of the procedures followed by users and management, in conjunction with the Fuelmaster program and its benefits, already provide the framework for satisfactory internal control.

Management Response

(Please refer to Appendix III)

2. Fuelmaster Reports

The Fuelmaster System provides various reports to assist monitoring of usage, billing, and other functions. Some managers within user departments expressed a desire to review reports on a real-time basis. IA recommends that Wicomico County IT look at the system with an eye toward sharing the program with decision makers. Allowing multiple users will also assist in the enhancement of internal control.

Management Response

(Please refer to Appendix III)

3. Billing

For individual Wicomico County Departments, Roads Division sends a detailed report and a monthly breakout of fuel use, shop billing, and Maryland diesel fuel tax to each Department. Roads Division also sends a report to Finance; the Finance Department charges each department through a system of journal entries and sends a check to Roads Division for the aggregate total amount. Other agencies purchase fuel from the County and are billed and collected separately. Billing is currently performed manually. An automated system of billing for Roads Division would serve to improve efficiency and provide better control for interagency and interdepartmental transactions.

Management Response

(Please refer to Appendix III)

4. Vehicle Designations

Fuelmaster System designates vehicles and equipment in two ways; vehicle ID and vehicle description. Vehicle ID is permanent and codes the vehicle by customer (department or agency) through a series of letters and numbers. Vehicle ID is associated with the vehicle history. Vehicle description can be a brief depiction of the unit (e.g. 2003 Dodge Ram). Many of the vehicle descriptions contain the operator's name. Some Departments in field interviews expressed a desire to have operator names associated with the vehicles and equipment, and others do not. A problem arises when a new operator is assigned to a vehicle and the prior operator's name remains associated with that vehicle. IA recommends that system controllers update user names in vehicle descriptions when reassigned for Departments that use such designations for control and accountability, and drop the user name designations when no such control or accountability is useful (e.g. multiple users for heavy equipment). Vehicle descriptions may be changed without affecting vehicle history.

Management Response

(Please refer to Appendix III)

5. Monthly Inventory

Monthly inventory process observed was satisfactory. IA recommends that someone from the Roads Department take manual tank readings (i.e. "stick the tanks") each month during inventory as part of the process to enhance control. Thermal expansion creates a problem with measuring diesel fuel. IA recommends monitoring of variances each month to assure that aggregate variances are within normal parameters of thermal expansion for diesel fuel.

Management Response

(Please refer to Appendix III)

6. AIM2 Unit Installation

Some equipment does not lend itself to the installation of an AIM2 unit. Examples are fuel cans, specialized equipment of various types, and remote equipment that use gasoline.¹² Most County Departments have fewer than five vehicles that do not have AIM2 units installed. Roads Department, Solid Waste, and the Sheriff's Office are in the process of installing the units in all eligible vehicles. Additionally seven vehicles in the Mosquito Control group are not equipped with AIM2 units. The Airport Operations/Maintenance Supervisor indicated that the AIM2 unit caused damage to the electrical system on at least one of its vehicles. Others expressed concern that the wireless connection between the fuel pump and the vehicle does not work well in inclement weather. IA

¹² Unlike diesel fuel, gasoline is not transported in bulk by Wicomico County

recommends follow-up within a reasonable period to reevaluate the progress of AIM2 unit installation programs and that all Departments monitor their fleet for AIM2 unit needs. Additionally, IA recommends that departments with concerns as to the operation of the units address those concerns with the system provider.

Management Response

(Please refer to Appendix III)

7. Landfill Fuel Usage

Data research revealed a sharp rise in Solid Waste fuel usage for the month of March. The increase over prior months' average was satisfactorily traced to the additional equipment in use for the Wicomico River dredge site preparation. Fuel usage at Solid Waste should return to normal levels once the project is completed.

Management Response

(Please refer to Appendix III)

8. Department Record Keeping

IA visited the heaviest users of the Fuelmaster program to observe record keeping and discuss the process with responsible personnel. A great many good ideas are present in the various ways the top users account for fuel usage. Parks & Recreation, Sheriff's Office, the Airport, Corrections, Youth and Civic Center, Emergency Services, Solid Waste, Roads Department, and others have various systems in place to track fuel usage. IA recommends sharing of information by tapping the best ideas from all users in any effort to standardize practices.

Management Response

(Please refer to Appendix III)

9. Fuel Transport and Storage

Metered storage and pumping facilities are as follows:

- Roads Division – Main Terminal (gasoline and diesel fuel)
- Wicomico Regional Airport (diesel fuel)
- Roads Division tank truck (diesel fuel)
- Solid Waste tank truck (diesel fuel)

Several unmetered diesel storage tanks are in use for various purposes ranging from special events to the ferry system. Some departments expressed concern over the fact that, due to regulatory requirements, transport of gasoline in a metered tank is not possible in Wicomico County. Many of the machines used throughout the county for maintenance (i.e. mowers and similar equipment) use gasoline. The process of filling small gasoline cans to service these machines is a source of risk. It is not possible, however, for these machines to visit Roads Division main terminal each time they need gasoline. IA makes no recommendation except to suggest that management verify that any cost-benefit analysis regarding bulk transportation of gasoline is negative.

Management Response

(Please refer to Appendix III)

10. User Authorization

Several agencies that are not County Departments use the County Fuelmaster system. A user to County payroll comparison revealed that 26% of users assigned to the fuelmaster system are not County employees. Users are assigned a four-digit number of their choosing and enter it when using the County fuel system. Additionally, some

of the chosen numbers appear to be unsecure (e.g. four numbers all the same or in sequence). IA and Fuelmaster recommend using random number assignments (such as the last four digits of the user's social security number). Additionally, IA recommends that all user groups periodically monitor users for validity. Managers may want to consider standardization of the requirements for issuance of a user number.

Management Response

(Please refer to Appendix III)

Auditor's Closing Remark

The Wicomico County Office of the Internal Auditor would like to thank management and staff from the various departments for their timely cooperation and assistance during the audit.

Appendix I – Billing Analysis for March 2011

Group	Total Fuel	Tax	Shop	Total	Billing	Difference ¹³
Solid Waste	\$58,274.99	\$878.34		\$59,547.72	\$59,153.33	\$394.39
Sheriff	23,473.60			23,473.60	23,473.60	-
Lower Shore Enterpr	14,177.17	386.79		14,563.96	14,563.96	-
Rec & Parks	4,593.20	37.83		4,631.03	4,631.03	-
Health Dept	1,943.65	38.32		1,981.97	1,981.97	-
DOC	1,850.15			1,850.15	1,850.15	-
Emergency Mgmt	1,006.69		342.55	1,349.24	1,349.24	-
Airport	1,066.59	18.67	65.80	1,151.06	1,151.06	-
Environmental Health	1,003.77			1,003.77	1,003.77	-
Housing Auth	690.57			690.57	690.57	-
Public Works	541.45			541.45	541.45	-
States Atty	488.28			488.28	488.28	-
Executive	469.70			469.70	469.70	-
Bookmobile	423.32	32.01		455.33	455.33	-
Civic Center	399.53			399.53	399.53	-
Bldg Maint	305.09			305.09	305.09	-
Humane Soc	265.89			265.89	265.89	-
Plan & Zoning	148.37			148.37	148.37	-
Council	107.69			107.69	107.69	-
Tourism	48.08			48.08	48.08	-
Local Mgmt	43.62			43.62	43.62	-

Total 111,715.79*

Total Transactions per Fuelmaster \$ 177,578.25

AIROTANK¹⁴ (1,047.21)

FUELO010 (5,914.37)

WCSWFUEL (41,776.60)

This amount represents actual end-user fuel usage per Fuelmaster

Total transactions less storage/transport tanks 128,840.07

Less total fuel per billing breakout* (111,715.79)

Difference 17,124.28

Less Roads fuel per inventory sheet (17,547.69)

Variance¹⁵ \$ (423.41) 0.33%

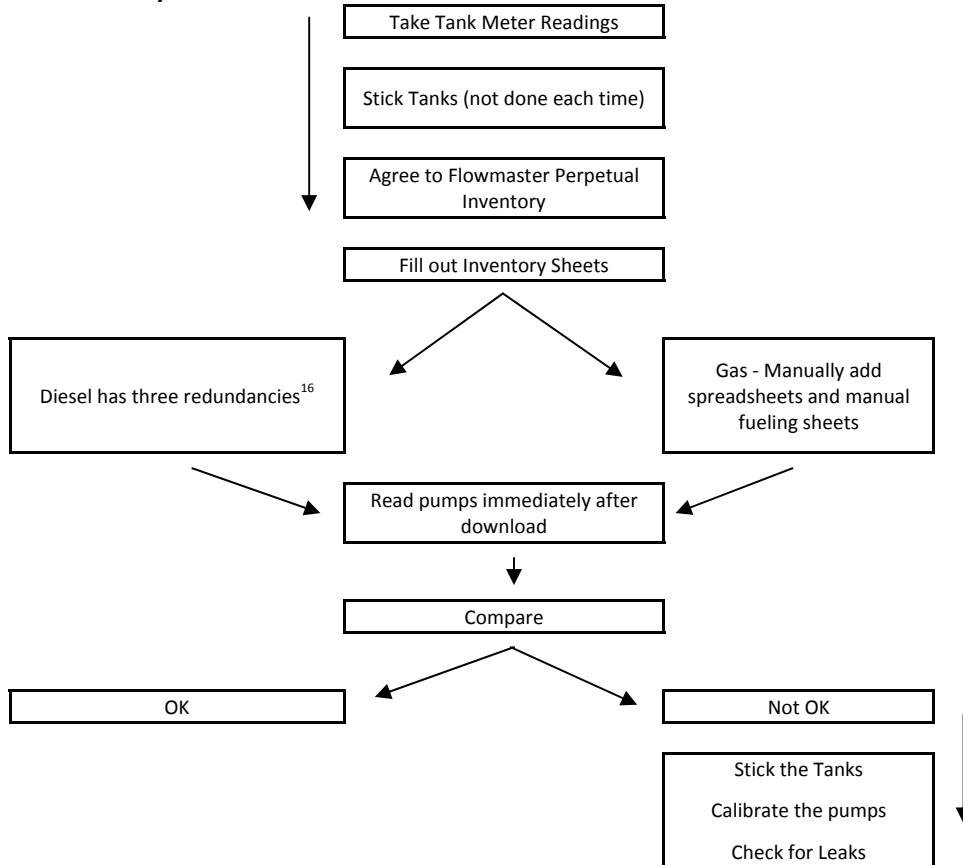
¹³ Difference caused by reclassification of Caterpillar 953-C taken off lease and assigned to retired vehicle account. Last fueling was March 21, 2011

¹⁴ Metered storage tanks are subsequently billed to users as pumped from the storage tanks. These amounts are backed out here to prevent double counting fuel for this analysis

¹⁵ The variance represents an overage. More fuel dollars were billed (per billing records) than used (per Fuelmaster). The difference may be caused by rising prices and is immaterial to the total

Appendix II – Inventory Analysis

Month-End Inventory Process



Inventory observed 5/2/2011

	<i>Storage Tank Meter</i>	<i>Stick Reading</i>	<i>Inventory per Fuelmaster</i>	<i>Variance Stick/Inventory Gallons</i>
Gasoline	48in	49in		
Gasoline		6176gal	6193gal	-17
Diesel	39.5in	40in		
Diesel		4668gal	4813gal	-145 ¹⁷

¹⁶ Maryland Special Fuel Use Report, Special Fuel User Worksheet, and central controller’s printouts

¹⁷ Diesel fuel varies considerably volumetrically with temperature; difference is within IA calculated thermal expansion parameters

Appendix III – Management Response

Below is a copy of a communication to IA from the Executive's Office:

From: Sharon Morris
Sent: Thursday, June 09, 2011 5:06 PM
To: Steve Roser; Theodore Shea

Steve,

The Executive's Office has received the Fuel Inventory System report submitted by the Office of the Internal Auditor. As noted, the audit discovered an electronic fuel system with checks and balances. The report refers to the system as adequately compliant, though there were a number of findings. While complimentary of the county's level of service to fuel distribution activity, you recommend reasonable enhancements to further the success of the system.

I'm appreciative of the cooperativeness you realized while working with county department heads and staff, and am satisfied with the report and your findings. Therefore, the Executive's Office will not request further discussion or review and no meeting is requested.

Thank you for presenting a document that responds to query over usage and the county's process.

Sharon Morris