CITY OF SAN ANTONIO

P. O. BOX 839966
SAN ANTONIO TEXAS 78283-3966

September 29, 2009

Mayor and Council Members:

SUBJECT: Fleet Maintenance and Operations Department, Fuel Inventory Controls Audit Report

We are pleased to send you the audit report of the Fleet Maintenance and Operations Department. This audit began in May 2008 and concluded in August 2009. Management's verbatim response is included in Appendix F of the report. The Fleet Maintenance and Operations Department should be commended for its cooperation and assistance during this audit.

The Office of the City Auditor is available to discuss this report with you individually at your convenience.

Respectfully submitted,

Barry Lipton, CPA, DABFA
Deputy City Auditor
City of San Antonio

Distribution:

Sheryl L. Sculley, City Manager
Sharon De La Garza, Assistant City Manager
Florencio Pena, Director, Fleet Maintenance and Operations Department
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CITY OF SAN ANTONIO

OFFICE OF THE CITY AUDITOR

Audit of the Fleet Maintenance and Operations Department

Fuel Inventory Controls

Project No. AU08-006

September 29, 2009

Executive Summary

As part of our approved annual Audit Plan, and at the request of the Fleet Maintenance and Operations Department (FMO), we conducted an audit of FMO Fuel Inventory Controls. The audit objective, conclusions, and recommendations follow:

> **Are City of San Antonio (COSA) fuel purchases, inventory, and usage appropriately controlled and accounted for throughout the fuel process life cycle?**

Internal controls over fuel purchases, inventory, and usage are not sufficient to appropriately control and account for COSA fuel. Record keeping procedures for COSA's fuel inventory are not adequate. The current fuel management system does not ensure the dispensing of fuel is restricted to authorized vehicles. Surveillance equipment is non-existent at most fueling sites. In addition, FMO did not bill approximately $150,000, of the $20 million of fuel sale transactions, to various COSA departments and Bexar County during fiscal year 2008.

We recommend that FMO:

- Generate and maintain accurate perpetual inventory records and monthly inventory reports for all fuel storage tanks.
- Investigate and correct the cause of variances between recorded and actual fuel inventories. Also, investigate and correct the cause of large variances between calculated tank volume measurements and Veeder-Root gauge measurements.
- Identify and use the correct tank conversion charts for all City fuel tanks when performing physical inventories and report fuel for all City storage tanks for year-end reporting purposes.
- Use the proper inventory valuation method when reporting year-end inventories for financial accounting purposes.
- Implement the new E.J. Ward, Inc. system with the goal of reducing the number of fuel cards in use and related user input at the dispenser.
- Reconcile data between the three fuel information systems (Inform, WinC6 and FASTER) to the SAP accounting system to ensure customer billing.
- Bill customers for all fuel provided.
- Install surveillance equipment at all fueling sites.

Other Matters

In 2008, the management of the Olmos Basin Golf Course was transferred to Municipal Golf Association-San Antonio (MGA-SA). During the transition FMO charged COSA's Golf Department for fuel deliveries; however, the Golf Department did not bill MGA-SA for four shipments of fuel totaling $7,856. We brought this issue to the attention of the Golf Department who then corrected the error and billed MGA-SA for the fuel.

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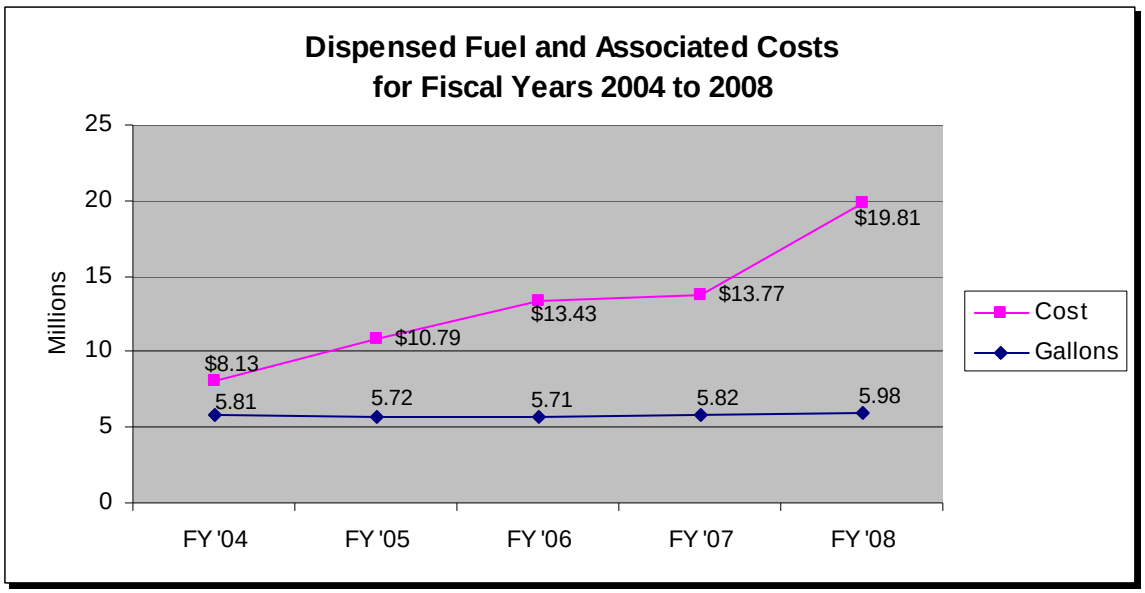
Background

The Fleet Maintenance and Operations Department (FMO) provides fuel for 4,877[1] City of San Antonio (COSA) vehicles. FMO also provides fuel on a reimbursable basis to other local government entities such as Bexar County and Lackland ISD.

FMO procures unleaded gasoline, diesel, and propane fuel for 11 COSA fueling sites throughout San Antonio. Fueling at these sites is restricted to authorized COSA vehicles and vehicles of other government entities with which COSA has an agreement. FMO also provides fuel for fuel storage tanks of other departments including Fire Station 36, four fuel tanks located at the Olmos Basin and Mission Del Lago Golf Courses, and five diesel generators.

Based on records in its FASTER[2] system, FMO dispensed approximately 6 million gallons[3] of fuel in fiscal year (FY) 2008, an increase of 3% over FY 2004. Due to price increases, fuel costs increased 143% over this same five-year period, from $8.13 million in FY 2004 to $19.81 million in FY 2008 as shown in the chart below.



[1] COSA Annual Budget FY 2008-2009, page 429.
[2] FMO uses the FASTER system to track vehicles, maintenance and repairs, parts inventories, and fuel usage.
[3] This excludes 432,377 gallons of diesel and 27,485 gallons of unleaded fuel purchased by the San Antonio Fire Department with Valero and Fuelman gas cards. Total cost of these gas card purchases for FY '08 was $1,579,562 according to the Fire Department.

Audit Scope and Methodology

The audit scope was from October 1, 2007 to September 30, 2008. However, in the Background section of this report we included data from FY 2004 to 2007 to show trends in usage and the cost of fuel.

We interviewed FMO and Fire Department personnel and reviewed written policies and procedures. We observed and created flowcharts of relevant processes to gain an understanding of the flow of information between FMO systems and COSA's SAP accounting system. We compared internal documentation of fuel storage tanks to the online records maintained by the Texas Commission on Environmental Quality (TCEQ). We performed a physical inventory at each COSA fuel site and compared it to the Veeder-Root system inventory. While at each fuel site, we determined whether surveillance equipment existed. In addition, we observed fuel delivery procedures at several COSA fueling sites.

We relied on the computer-processed data extracted from FMO's WinC6[4], Inform[5], and FASTER systems to validate fuel purchases, inventory, and usage (see Appendix A). Using data analysis software, we tested completeness of data by comparing 399,732 fuel sales transactions from FMO's WinC6 system to records in the FASTER system and ultimately to COSA's SAP accounting system. We tested WinC6 transactions for improbable odometer data. In addition, we tested the use of fuel cards assigned to vehicles reported as retired and observed associated video surveillance footage relating to these transactions.

We reviewed the allocation of fuel sales to internal customers (COSA departments) and all monthly fuel invoices to COSA's two external fuel customers, Bexar County and Lackland Independent School District, for FY 2008.

We reviewed all 831 fuel purchase orders (from third-party vendors) in SAP for FY 2008 and compared quantities and dates to fuel delivery events recorded in the Inform inventory system. We calculated the ending inventory using the beginning physical fuel inventory (from FMO's Inventory Report) plus purchases (from SAP) less sales (from WinC6 and FASTER) and compared it to FMO's actual ending physical inventory (from FMO's Inventory Report).

The basis for our tests includes criteria established in the Environmental Protection Agency (EPA) publication "Doing Inventory Control Right", FMO policies and procedures, contractual agreements, and fuel pricing based on the Oil Price Information Service (OPIS). We also relied on criteria of the Texas Administrative Code (TAC), specifically Title 30 Environmental Quality, Part I TCEQ, Chapter 334

[4] WinC6™ is a fuel management system used to collect fuel sales transactions from the dispenser and validate user information from a central location.
[5] Inform is a Veeder-Root system designed to automate fuel tank data collection (e.g. current levels, deliveries, sales) at a central point for purposes of providing accurate inventory information and reports.

Underground and Aboveground Storage Tanks, Rule 334.50 Release Detection, d(1)B(ii) which states:

> Reconciliation of detailed inventory control records shall be conducted at least once each month, and shall be sufficiently accurate to detect a release as small as the sum of 1.0% of the total substance flow-through for the month plus 130 gallons.

The scope of our audit included diesel and unleaded fueling processes controlled by FMO. FMO does not control the following fueling activities:

- Fire Department's use of Valero and Fuelman fuel cards to purchase fuel from third-party retail vendors
- Fuel dispensed from the Fire Station No. 36 fuel tank
- Fuel dispensed from tanks located at COSA's Olmos Basin and Mission Del Lago golf courses
- Fuel dispensed from COSA's tanker trucks to equipment/vehicles at remote sites

We conducted this audit from May 2008 to June 2009 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our audit results and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our audit results and conclusions based on our audit objectives. Our audit included tests of management controls that we considered necessary under the circumstances.

Audit Results and Recommendations

A. Perpetual Inventory Procedures

FMO does not have adequate perpetual inventory controls to account for COSA's fuel inventory.

Perpetual inventory controls should provide for consistently accurate and timely information pertaining to fuel inventory levels, deliveries, and sales. A lack of procedures and mechanisms to account for fuel inventory may result in undetected problems such as tank equipment malfunctions, accounting and/or recording errors, fuel leakage, and shrinkage. The Veeder-Root and Inform systems are the primary components of FMO's perpetual inventory control system.

FMO uses Veeder-Root automatic tank gauging, sensing, and monitoring equipment. This equipment generates data on fuel and water depths (i.e. height in inches) for beginning and ending inventory levels, fuel quantities delivered (from the vendor), fuel quantities dispensed (metered sales) and the temperature compensated (TC) volume[6]. It also computes variances between the book (calculated) and actual (Veeder-Root system) inventory and transfers the resulting data to the Inform perpetual inventory system. TCEQ requires retail business entities to conduct reconciliations that are sufficiently accurate as to detect variances of 130 gallons plus 1% of monthly outflow (i.e. monthly sales). A variance that exceeds this limit is significant enough to warrant investigation and possible TCEQ reporting. This type of reconciliation is a standard business practice for identifying possible problems such as fuel leaks, thefts, and faulty gauges.

The Inform system has the capability of producing daily and monthly Business Inventory Reconciliation (BIR) reports based on the Veeder-Root information. BIR reports include data showing beginning inventory, deliveries, sales, ending inventory, and the variance between book and actual reported inventories. These reports should be a primary internal control for monitoring inventory and variances in order to properly control and account for fuel.

BIR Fuel Inventory Variances

FMO is not generating monthly fuel inventory (BIR) reports for any of its fuel tanks although this is a standard business practice for identifying fuel variances between calculated and actual fuel volumes.

[6] Temperature compensated (TC) volume is adjusted to take into account the expansion and contraction of fuel inventory attributed to changes in temperatures.

FMO staff generates daily BIR reports and may call a vendor to investigate if they suspect that a variance is caused by equipment malfunction. However, after physically correcting the cause of the variance, FMO does not make a manual adjustment in the Inform system to correct the variance. Thus, the perpetual inventory records remain in error making the identification of the nature/cause of subsequent fuel variances more difficult.

Using daily records generated for each tank in the Inform system for FY 2008, we generated month-end inventory summaries, i.e. what would be the equivalent of monthly BIR reports. Our month-end summaries showed that 14 of the 26 tanks connected to the Inform system had variances between calculated and actual fuel volumes that exceeded their monthly thresholds of 1% of monthly sales plus 130 gallons. Overall, 40% of the time these 26 tanks showed variances that exceeded their monthly thresholds as shown in Appendix B.

Fuel Tanks Not Linked to Inform

FMO had not connected eight fuel tanks to the Inform system (see table below) even though six of the tanks are equipped with Veeder-Root automatic gauges; thus no inventory (BIR) reports were being generated or reviewed for these tanks.

Tanks Not Linked to Inform

No.	Facility	Product	Veeder-Root Gauges?	Tank Capacity
1	Airport Cargo Terminal – Generator Tank	Diesel	No	2,500
2	Fire Station 36	Diesel	Yes	1,000
3	Henry B. Gonzalez Convention Center - Generator Tank	Diesel	No	600
4	Mission Del Lago Golf Course*	Diesel	Yes	550
5	Mission Del Lago Golf Course*	Unleaded	Yes	550
6	Olmos Basin Golf Course*	Diesel	Yes	1,000
7	Olmos Basin Golf Course*	Unleaded	Yes	1,000
8	Public Safety Technology Center - Generator Tank	Diesel	Yes	1,000
*Municipal Golf Association-SA, a third party operator, currently purchases fuel for these tanks.				

Variances between Veeder-Root System and Calculated Fuel Tank Volumes

We identified variances that exceeded 130 gallons[7] between the Veeder-Root system reported volumes and the physical measurement of tank volumes for 12 of FMO's 34 tanks (35%) equipped with Veeder-Root gauges (see Appendix C).[8] The variances amounted to 4,780 gallons of a total of 87,043 gallons and ranged from

[7]We used 130 gallons as a reference point for investigating variances. FMO had no trigger point for investigating variances during the scope period.
[8] FMO provided Veeder-Root tapes concurrent with the dipstick measurements.

135 to 1,163 gallons. Variances could indicate gauge malfunctions or tank calibration-chart inaccuracies and could result in inaccurate inventory records.

New Fuel Management System

FMO has contracted with E.J. Ward, Inc. to provide an Automated Fuel Management System to replace the existing WinC6 and Inform systems by September 1, 2009. The AFMS has the capability to interface with Veeder-Root gauges to collect tank data, create inventory records, and produce daily, monthly, and annual BIR reports. The AFMS also has the capability to interface with COSA's SAP accounting system.

Recommendations: FMO management should implement proper internal controls over COSA's fuel inventories as follows:

A-1 Use the Veeder-Root and Inform (or AFMS) systems to generate and maintain accurate perpetual inventory records.

A-2 Generate monthly BIR reports for all tanks including those not currently connected to the Inform system. Based on these monthly reports, investigate and correct the cause of variances between recorded and actual inventories that exceed 1% of sales plus 130 gallons as recommended by TCEQ[9] as an inventory control method. Also, create manual entries (supported by sufficient documentation) in the Inform (or AFMS) system to correct variances as appropriate.

A-3 Connect all tanks to the Inform (or AFMS) system where economically feasible and ensure the correctness of generated inventory records/reports. Generate manual perpetual inventory records for all tanks that cannot be economically connected to the Inform (or AFMS) system.

A-4 Perform periodic physical inventories (i.e. manually dipstick the fuel tanks) and compare results to Veeder-Root system generated fuel volume data. Establish a reasonably acceptable variance threshold between the physical measurement and Veeder-Root data and investigate the cause of all variances that exceed the threshold. Also, address equipment problems such as faulty gauge calibrations on a timely basis.

[9] TAC, Title 30, Part 1, Chapter 334, Subchapter C, Rule §334.50 (d)(1)(B)(ii) says, "Reconciliation of detailed inventory control records shall be conducted at least once each month, and shall be sufficiently accurate to detect a release as small as the sum of 1.0% of the total substance flow-though for the month plus 130 gallons."

B. Accounting for Year-End Fuel Inventories

FMO did not accurately report fuel inventories in the SAP accounting system for fiscal year-ends 2007 and 2008.

Every fiscal year-end, FMO performs a physical inventory of fuel in its tanks using a manual dipstick method. FMO records the fuel level shown on the dipstick and then uses a tank conversion chart to calculate the actual number of gallons in the tank. FMO multiplies the number of gallons in all tanks by the OPIS price (i.e. market price) for the last week in September for each fuel type to determine the value of the ending inventory to report in the City's SAP accounting system at fiscal year-end.

Use of Incorrect Tank Conversion Charts

FMO provided the audit team with several iterations of tank charts during the course of the audit. Using the latest set of charts provided by FMO, we determined that for the FY 2007 ending inventory, FMO used the incorrect tank conversion chart for 13 of the 26 tanks reported, resulting in a variance of 1,375 gallons (see Appendix D). Similarly, for FY 2008, FMO used the incorrect tank conversion chart for 12 of 26 tanks resulting in a difference of 1,771 gallons.

Tanks Excluded from Inventory Reporting

Although FMO reported the fuel inventory in SAP for the 26 tanks at its 11 fueling sites for 2007 and 2008, it did not report the fuel inventory for 11 tanks with a capacity of 23,200 gallons as shown in the table below. Since FMO did not track inventory for these tanks, we do not know actual year-end fuel volumes or valuations. FMO coordinates the delivery of fuel to these tanks and is in the best position to monitor fuel levels and identify potential tank problems.

Tanks Excluded from Inventory

No.	Facility	Product	Capacity
1	Airport Cargo Terminal	Diesel	2,500
2	Alamodome	Diesel	10,000
3	Emergency Command Center	Diesel	4,000
4	Fire Station 36	Diesel	1,000
5	Information Services	Diesel	1,000
6	Mission Del Lago Golf Course	Diesel	550
7	Mission Del Lago Golf Course	Unleaded	550
8	Olmos Basin Golf Course*	Diesel	1,000
9	Olmos Basin Golf Course*	Unleaded	1,000
10	Public Safety Technology Center	Diesel	1,000
11	Henry B. Gonzalez Convention Center	Diesel	600
Total Capacity			**23,200**

*The Municipal Golf Association-San Antonio (MGA-SA) assumed responsibility for managing the Olmos Basin Golf Course and became contractually responsible for fuel costs prior to fiscal year-end 2008. Thus, year-end fuel inventory reporting would not have been required for these two Olmos Basin tanks for FY 2008.

Incorrect Inventory Valuation Method Used

FMO did not use the correct valuation method to price the FY 2008 ending fuel inventory.

The City follows Governmental Accounting Standard Board (GASB) accounting standards. Accordingly, fuel inventory is supposed to be valued at cost, based on first-in first-out (FIFO), or *lower of average cost or market*.[10] FMO priced FY 2008 ending inventory at market; i.e. OPIS market price for the last week in September 2008. However, *average cost* for both unleaded and diesel fuel for FY 2008 was lower than *market* and should have been used for valuation purposes. Based on the use of the *market* valuation method, FMO overstated FY 2008 ending inventory by approximately $26,000 as shown in the table below:

FY 2008 Ending Inventory Overstatement

Component	Unleaded	Diesel	Total
FY 2008 Ending Inventory Gallons per FMO	114,765	61,938	
Market Price per Gallon per FMO	$3.12	$3.50	
FY 2008 Ending Inventory Value per FMO	$358,067	$216,783	$574,850
FY 2008 Ending Inventory Gallons per Auditor (Adjusted for Temperature*)	112,623	61,244	
Average Cost (purchase price*) per Gallon	$2.99	$3.46	
FY 2008 Ending Inventory Value per Auditor	$336,743	$211,904	$548,647
Estimated Ending Inventory Overstatement	$21,324	$4,879	**$26,203**

*COSA purchases fuel based on the fuel's volume at 60° Fahrenheit. However, fuel expands as the temperature increases. We adjusted volumes (a.k.a. temperature compensated volumes) to an average fuel temperature of 88° as reported by the Veeder-Root equipment for the 11 fueling-site tanks at the time inventory was taken on 9/30/08.

Using incorrect tank conversion charts, excluding certain fuel tank inventories, and using the incorrect inventory valuation method for year-end physical inventory results in inaccurate financial reporting.

Recommendation: FMO management should create formal policies and implement proper internal controls over physical inventory procedures including the following:

[10] Page 42 of the City of San Antonio Comprehensive Annual Financial Report (CAFR) September 30, 2008 states: "Materials and supplies consist principally of expendable items held for consumption and are stated at cost, based on first-in first-out and lower of average cost or market methods."

B-1 Identify and use the correct tank conversion charts for all City fuel tanks when performing physical inventories.

B-2 Report fuel inventories for all City storage tanks (excluding the MGA-SA managed golf courses) for year-end purposes.

B-3 Use the proper inventory valuation method (e.g. FIFO, lower of average cost or market) when reporting year-end inventories in the City's SAP accounting system.

C. Fuel Dispensing System

The fuel card system utilized by FMO is outdated and the WinC6 system does not contain controls necessary to ensure the accurate recording of fuel transaction data at the fuel dispenser and the fueling of only authorized vehicles. Moreover, management did not evaluate available information to ensure the appropriateness of fuel transactions.

FMO uses magnetically coded "swipe" cards and the WinC6 system to manage fuel dispensing at its 11 fueling sites. To obtain fuel, a user must utilize the FMO issued fuel card assigned to an authorized COSA vehicle or external organization vehicle. To activate the fuel dispenser a user must swipe the fuel card through a card reader located near the fuel dispenser and enter the vehicle's odometer reading. The WinC6 system then records the fuel transaction information, including date and time, gallons pumped, type of fuel, and odometer reading. However, users are able to enter inaccurate odometer data, and fuel their vehicles.

We determined that of the 399,732 WinC6 transactions for FY 2008, 16,656 had improbable odometer readings (based on prior odometer readings for the vehicles), and 12,802 showed one-digit odometer readings.

Our 2006 audit report identified control issues with the WinC6 fuel card system that allowed users to transfer fuel cards from vehicle to vehicle, resulting in erroneous data capture. In 2007, FMO began exploring the use of automated fueling systems. In August 2008, the Office of Innovation and Reform validated the control issues we previously identified. In October 2008, FMO implemented new procedures requiring users to enter their SAP employee number in addition to the vehicle's odometer reading after swiping the fuel card.

Effective WinC6 system controls are necessary for analyzing fuel consumption, scheduling vehicle maintenance, and preventing the fueling of unauthorized vehicles such as employee-owned automobiles. The new system provided by E.J. Ward, Inc. will replace the existing WinC6 system with one that will significantly reduce the use of fuel cards and user input at the dispenser. For E.J. Ward equipped vehicles, users will only be required to swipe their COSA employee badges; no fuel cards or data keying will be required.

During the scope of the audit, users pumped a total of 13,302 gallons of fuel using 102 fuel cards from "retired" vehicles. These cards were assigned to vehicles designated as "retired" in the FASTER system, but not the WinC6 system. This issue existed in October 1998 when the FASTER system was installed. During the audit, FMO adopted new procedures whereby it will not record a vehicle as retired in FASTER until after COSA actually disposes the vehicle. We performed a follow-up test for the period August 29, 2008 to December 31, 2008 after FMO had implemented the new procedures and found no further uses of fuel cards related to retired vehicles. Consequently, we make no recommendation for this issue.

Recommendation: FMO should continue the process of implementing the new E.J. Ward, Inc. AFMS system with the goal of significantly reducing the number of fuel cards in use and related user input at the dispenser.

D. Fuel Sales Transactions

FMO did not bill all fuel sales for FY 2008.

Of the 399,732 fuel sales transactions recorded in the WinC6 fuel system for FY 2008, FMO did not transfer 2,264 transactions to the FASTER system; the majority of these transactions occurred on two dates (see table below). These fuel transactions resulted in $149,551 of unbilled/unallocated fuel costs for FY 2008. FMO should have billed $11,823 (3,328 gallons) to Bexar County and allocated the remainder to various COSA departments.

Unbilled/Unallocated Fuel Sales Transactions

Date	No.	Explanation
7/8/08	1,406	FMO did not transfer this day's fuel sales transactions to FASTER.
2/11/08	820	FMO transferred only a portion of this day's fuel transactions to FASTER.
Various	38	No explanation provided.
Total	2,264	

FMO currently uses three fuel information systems (Inform, WinC6, and FASTER) and COSA's SAP accounting system that do not have automated data transfer interfaces. Consequently, they require daily manual intervention, which increases the possibility of errors. The errors listed above remained undetected because of inadequate reconciliation procedures.

Recommendation: FMO should develop procedures to ensure that all WinC6 (or AFMS) fuel sales transactions transfer properly to FASTER and ultimately to SAP. These procedures should include daily and monthly reconciliations of WinC6 (or AFMS) data to FASTER and monthly reconciliations of FASTER data to SAP. Additionally, FMO should fully automate the transfer of data between systems.

E. Surveillance Equipment

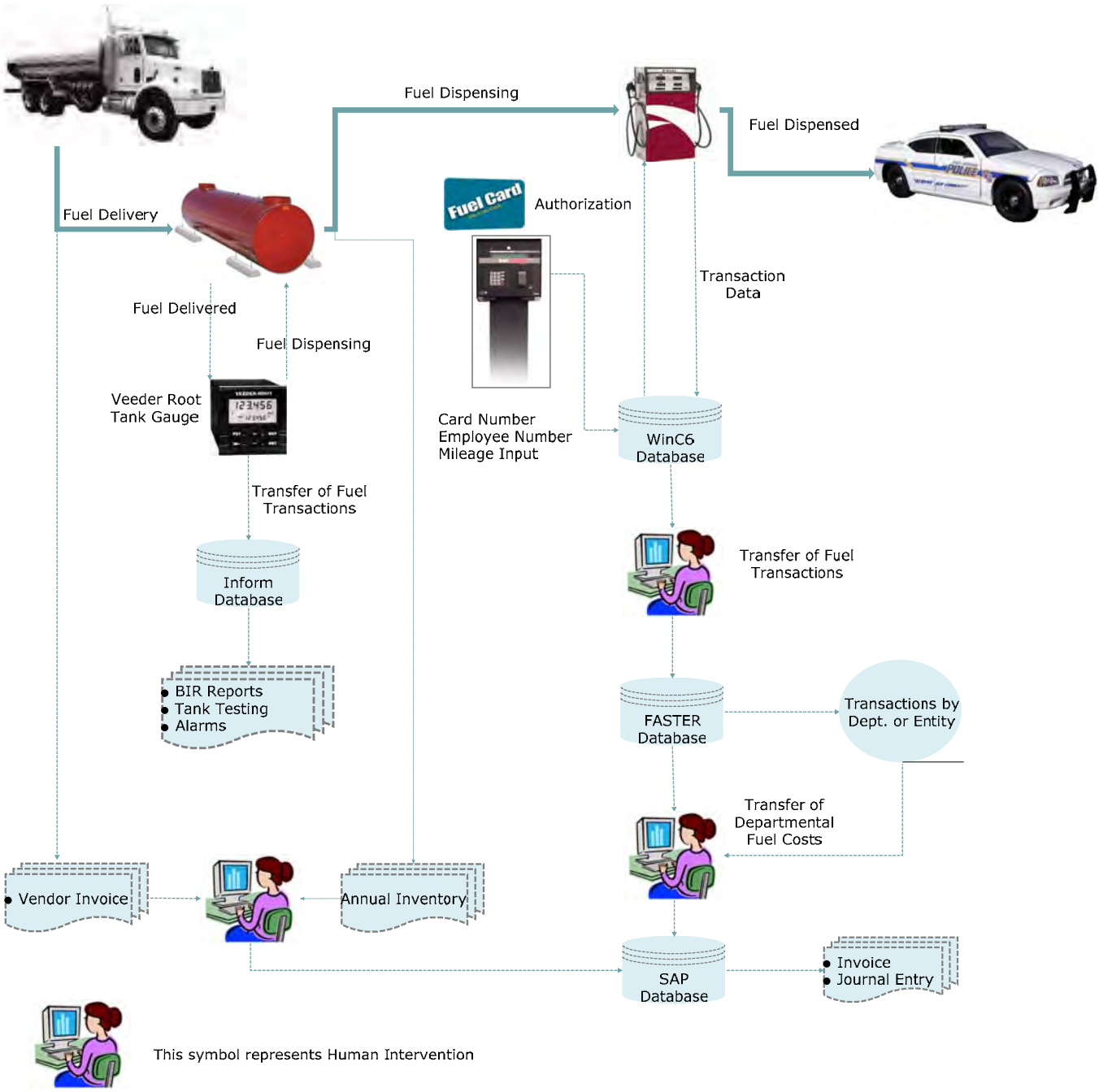
FMO does not have adequate surveillance equipment to monitor all COSA fueling sites. Only two of COSA's 11 fueling sites have working surveillance cameras. For these two sites, surveillance media was limited to two months.

FMO management indicated that budget restraints prevented them from purchasing surveillance equipment recommended in the audit report we issued in 2006.

The surveillance and monitoring of fueling activities can be an effective control for deterring and detecting unauthorized use of COSA fuel. Because of the absence of adequate surveillance footage, it was not possible to verify whether the vehicles being fueled were authorized when we tested fuel transactions of retired vehicles (see Observation C). Additionally, adequate surveillance footage is necessary to detect criminal activity.

Recommendation: FMO should procure and install surveillance equipment at all fueling sites for which it is responsible. FMO should position surveillance cameras to capture sufficient detail including license plate numbers. In addition, retain surveillance media for at least six months.

Appendix A – Fuel System Information Flow



This flowchart shows the flow of unleaded/diesel fuel data from the underground tank to the Inform and WinC6 systems, to the FASTER system, and ultimately to the SAP accounting system.

Appendix B – Monthly Variances Exceeding Threshold

For the 26 tanks at FMO's 11 fueling sites, the table below shows the total number of months and associated percentage during FY 2008 when the month-end inventory summary reflected a variance that exceeded the tank's monthly threshold of 1% of sales plus 130 gallons. The 40% overall rate shown at the bottom is computed as 125 ÷ (26 tanks x 12 months) = 40%.

No.	Fueling Site	Tank	FY 2008 No. Months Tank Variance Exceeded Threshold	%
1	Patrol North Substation	Unleaded 1	0	0%
2	Patrol North Substation	Unleaded 2	9	75%
3	Northwest Service Center	Diesel 1	12	100%
4	Northwest Service Center	Diesel 2	12	100%
5	Northwest Service Center	Unleaded 1	12	100%
6	Northwest Service Center	Unleaded 2	11	92%
7	Patrol East Substation	Unleaded 1	12	100%
8	Patrol East Substation	Unleaded 2	12	100%
9	Patrol East Substation	Diesel	0	0%
10	Aviation Maintenance	Unleaded	12	100%
11	Aviation Maintenance	Diesel	0	0%
12	Zarzamora Service Center	Unleaded	0	0%
13	Zarzamora Service Center	Diesel 1	0	0%
14	Zarzamora Service Center	Diesel 2	12	100%
15	Downtown Police Department	Unleaded 1	8	67%
16	Downtown Police Department	Unleaded 2	8	67%
17	Downtown Police Department	Diesel	1	8%
18	Police Training Academy	Unleaded	0	0%
19	Patrol Northwest Substation	Unleaded North Tank	0	0%
20	Patrol Northwest Substation	Unleaded South Tank	0	0%
21	Patrol South Substation	Unleaded 1	0	0%
22	Patrol South Substation	Unleaded 2	0	0%
23	Southeast Service Center	Diesel	2	17%
24	Southeast Service Center	Unleaded	0	0%
25	Northeast Service Center	Unleaded	0	0%
26	Northeast Service Center	Diesel	2	17%
	Total		**125**	**40%**

Appendix C – Tank Volume Variances

Variances Between Veeder-Root and Physical Inventory Volumes[1]

No.	Fueling Site - Tank	Tank Capacity[2] (Gallons)	Physical Depth per Dipstick[3] (Inches)	Depth per Veeder-Root[4] (Inches)	Volume per Tank Calibration Chart[5] (Gallons)	Volume per Veeder-Root[4] (Inches)	Auditor Calculated Absolute Variance[6] (Gallons)	% Variance from Tank Calibration Chart Volume
1	Northwest Service Center, Unleaded 1	11,897	61.5	61.25	8,517	7,354	1,163	13.66%
2	Northwest Service Center, Unleaded 2	11,897	65.5	65.41	9,136	8,923	213	2.33%
3	Emergency Command Center, Diesel	4,131	60.75	60.44	3784	3547	237	6.26%
4	Patrol South, Unleaded 1	11,595	72.5	72.45	9,898	9,028	870	8.79%
5	Patrol South, Unleaded 2	11,595	73.5	72.86	10,026	9,170	856	8.54%
6	Downtown Police, Unleaded 2	12,098	57.75	56.96	7,669	7,478	191	2.49%
7	Northeast Service Center, Diesel	19,974	55.75	56.54	9,088	9,371	283	3.11%
8	Police Academy, Unleaded	11,627	46	45.54	5,814	6,096	282	4.85%
9	Southeast Service Center, Unleaded	11,594	48.5	48.48	6,259	6,097	162	2.59%
10	Patrol Northwest, Unleaded 2	11,682	48.5	49.43	6,358	6,586	228	3.59%
11	Patrol Northwest, Unleaded 1	11,682	58.25	58.56	7,957	8,117	160	2.01%
12	Zarzamora Service Center, Unleaded[7]	11,594	25	24.11	2,537	2,402	135	5.32%
	Total				**87,043**		**4,780**	

[1]This chart includes only tanks showing a variance larger than 130 gallons, which we use as a reference point. FMO had no trigger point for investigating variances during the scope period.

[2]Source: *Tier II UST AST Sites,* provided by FMO, contains a list of COSA's in-use, underground/aboveground storage tanks and the related facility, product, and max capacity for each tank.

[3]FMO staff, in the presence of auditors, took physical dipstick measurements on various dates between August 20 and August 25, 2008.

[4]Source: FMO provided Veeder-Root tapes concurrent with the dipstick measurements. Veeder-Root tapes provide a real-time set of measurements including depth and volume. These measurements are based on data from the Veeder-Root tank gauges.

[5]Source: FMO provided the tank calibration charts. Auditors used the physical depth as measured by a dipstick to identify the corresponding volume on the tank calibration charts.

[6] This represents the difference between the Veeder-Root volume and the volume per the calibration chart. The absolute value displays all amounts as positive numbers.

[7] FMO did not have the information needed to determine whether the tank charts for this site are accurate.

Appendix D – Ending Inventory Volume Variances

The tables below show the variance between FMO's original volumes based on incorrect charts and auditor-calculated volumes using tank charts most recently provided by FMO.

2007					
No.	**Fueling Site**	**Fuel Tank**	**Gallons per FMO**	**Gallons per Auditor**	**Variance in Gallons**
1	Northwest Service Center	Diesel 1	8,493	8,674	181
2	Northwest Service Center	Diesel 2	4,316	4,453	137
3	Northwest Service Center	Unleaded 1	7,433	7,486	53
4	Northwest Service Center	Unleaded 2	7,148	7,299	151
5	Zarzamora Service Center	Diesel 1	7,404	7,712	308
6	Zarzamora Service Center	Diesel 2	5,279	5,397	118
7	Zarzamora Service Center	Unleaded	6,713	6,871	158
8	Patrol South Substation	Unleaded 1	8,069	8,064	5
9	Patrol South Substation	Unleaded 2	9,403	9,394	9
10	Southeast Service Center	Diesel	4,767	4,826	59
11	Southeast Service Center	Unleaded	5,983	6,013	30
12	Patrol East Substation	Unleaded 1	7,912	7,825	87
13	Patrol East Substation	Unleaded 2	7,433	7,354	79
Total 2007 Inventory Variance					**1,375**

2008					
No.	**Fueling Site**	**Fuel Tank**	**Gallons per FMO**	**Gallons per Auditor**	**Variance in Gallons**
1	Northwest Service Center	Diesel 1	8,765	8,478	287
2	Northwest Service Center	Diesel 2	6,612	6,757	145
3	Northwest Service Center	Unleaded 1	9,263	9,471	208
4	Northwest Service Center	Unleaded 2	9,906	10,138	232
5	Patrol South Substation	Unleaded 1	8,417	8,410	7
6	Patrol South Substation	Unleaded 2	8,030	8,025	5
7	Downtown Police Dept.	Unleaded 1	3,794	3,752	42
8	Downtown Police Dept.	Unleaded 2	8,925	8,706	219
9	Downtown Police Dept.	Diesel	7,433	7,236	197
10	Patrol East Substation	Unleaded 1	7,105	6,918	187
11	Patrol East Substation	Unleaded 2	9,074	8,855	219
12	Patrol East Substation	Diesel	3,340	3,317	23
Total 2008 Inventory Variance					**1,771**

Appendix E – Staff Acknowledgement

Mark Bigler, CPA-Utah, CISA, CFE, Audit Manager
Arlena Sones, CPA, CIA, CGAP, Auditor-In-Charge
Alejandro Valadez, CISA, Auditor
Gabe Trevino, CISA, Auditor
Rebecca Moulder, CIA, Auditor

Appendix F – Management Responses

CITY OF SAN ANTONIO

FLEET MAINTENANCE & OPERATIONS DEPARTMENT
INTERDEPARTMENTAL CORRESPONDENCE

TO: Barry Lipton, CPA, DABFA, Deputy City Auditor

FROM: Florencio Peña, Director, Fleet Maintenance & Operations

COPIES: Sharon De La Garza, Assistant City Manager
Hugh Miller, Director, Information Technology Services Department

SUBJECT: Management's Corrective Action Plan for the Fleet Maintenance & Operations Department, Fuel Inventory Controls Audit

DATE: September 18, 2009

The Fleet Maintenance and Operations (FMO) Department has completed its review of the audit report of the Fuel Inventory Controls, Project Number AU08-006, and has developed the Corrective Action Plans below corresponding to the report recommendations outlined in the audit.

At the request of the FMO Department, the Office of the City Auditor performed a Fuel Inventory Controls audit for FY 2008. FMO's goal to document, map, and validate its current practices in addition to identifying both process and procedural gaps in the fuel inventory system through the audit process has greatly assisted in the implementation of the new AFMS. The recommendations brought forward through the fuel inventory audit process has improved business practices and assisted the department in its efforts to streamline auditing and controls. However, it is important to note that despite some gaps in internal controls, the variance between the booked and actual ending inventory for FY 2007-2008 fell within the 1% industry acceptable threshold. Variances are commonly attributed to things such as temperature fluctuations, equipment calibration, fuel gauge malfunctions, and human error.

Recommendation					
#	Description	Audit Report Page	Accept, Partially Accept, Decline	Responsible Person's Name/Title	Completion Date
A	**Perpetual Inventory Procedures**	4			
A-1	Use the Veeder-Root and Inform (or AFMS) systems to generate and maintain accurate perpetual inventory records.	6	Accept	Florencio Peña, Fleet & Maintenance Operations Director	
	Action plan: Veeder-Root and Inform was used daily to track fuel inventory; however, it was not utilized in the manner recommended by the Office of the City Auditor. • Run daily report utilizing Veeder-Root data to identify, investigate, and document variances between book and actual fuel volumes. • Schedule service calls as indicated by variances and document all in-house trouble-shooting and vendor repair services. • Work with software inventory control vendor to document validated adjustments in fuel inventory software system.				Completed Completed 12/2009

Recommendation					
#	Description	Audit Report Page	Accept, Partially Accept, Decline	Responsible Person's Name/Title	Completion Date
A-2	Generate monthly BIR reports for all tanks including those not currently connected to the Inform system. Based on these monthly reports, investigate and correct the cause of variances between recorded and actual inventories that exceed 1% of sales plus 130 gallons as recommended by TCEQ[1] as an inventory control method. Also, create manual entries (supported by sufficient documentation) in the Inform (or AFMS) system to correct variances as appropriate.	6	Accept	Florencio Peña, Fleet & Maintenance Operations Director	
	Action plan: Daily BIR reports were completed, inspected by TCEQ and variances were investigated to address suspected equipment malfunctions but monthly reports were not submitted. Beginning in April 2009, monthly BIR reports have been completed and forwarded as recommended by the Office of the City Auditor. • Complete monthly BIR and forward reports in accordance with Texas Commission on Environmental Quality (TCEQ) requirements. — Completed • Conduct monthly physical inventories for those tanks not connected to Inform. — 10/2009 • Investigate implementation of making a manual adjustment entry in Inform (or AFMS). — 12/2009				
A-3	Connect all tanks to the Inform (or AFMS) system where economically feasible and ensure the correctness of generated inventory records/reports. Generate manual perpetual inventory records for all tanks that cannot be economically connected to the Inform (or AFMS) system.	6	Accept	Florencio Peña, Fleet & Maintenance Operations Director (in coordination with ITSD, CFES, Aviation, & Fire)	4/2010

[1] TAC, Title 30, Part 1, Chapter 334, Subchapter C, Rule §334.50 (d)(1)(B)(ii) says, "Reconciliation of detailed inventory control records shall be conducted at least once each month, and shall be sufficiently accurate to detect a release as small as the sum of 1.0% of the total substance flow-though for the month plus 130 gallons."

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Recommendation					
#	Description	Audit Report Page	Accept, Partially Accept, Decline	Responsible Person's Name/Title	Completion Date
	Action plan: • Work with departments to determine feasibility of connecting the following tanks to Inform (or AFMS) or establish an inventory control reporting process: ✓Public Safety Technology Center (ITSD) – 1,000 gallon emergency generator tank (diesel) ✓Henry B. Gonzalez Convention Center – 600 gallon emergency generator tank (diesel) ✓Airport Cargo Terminal – 2,500 gallon emergency generator tank (diesel) ✓Fire Station 36 – 1,000 gallon tank (diesel) • Transfer operating and TCEQ reporting responsibility of the following Golf Course tanks to Municipal Golf Association – SA. ✓Mission Del Lago – 550 gallon tank (diesel) ✓Mission Del Lago – 550 gallon tank (unleaded) ✓Olmos Basin – 1,000 gallon tank (diesel) ✓Olmos Basin – 1,000 gallon tank (unleaded)				
A-4	Perform periodic physical inventories (i.e. manually dipstick the fuel tanks) and compare results to Veeder-Root system generated fuel volume data. Establish a reasonably acceptable variance threshold between the physical measurement and Veeder-Root data and investigate the cause of all variances that exceed the threshold. Also, address equipment problems such as faulty gauge calibrations on a timely basis.	6	Accept	Florencio Peña, Fleet & Maintenance Operations Director	
	Action plan: Physical inventories were conducted at time of storage tank fuel deliveries, bi-annually and annually. A 1% variance threshold between physical measurement and Veeder-Root data was implemented by FMO and at the recommendation of the Office of the City Auditor. • Discrepancies greater than 1% between invoiced and actual received gallons in veeder root tape are investigated, documented and corrective action taken. • Utilize available funds to upgrade fuel equipment to include dispensers, containment sumps, and tank piping systems.				Completed FY 2010
B	**Accounting for Year-End Fuel Inventories**	**7**			
B-1	Identify and use the correct tank conversion charts for all City fuel tanks when performing physical inventories.	9	Accept	Florencio Peña, Fleet & Maintenance Operations Director	Completed
	Action plan: • Utilize updated and verified fuel tank conversion charts provided by third-party vendor.				

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Recommendation					
#	Description	Audit Report Page	Accept, Partially Accept, Decline	Responsible Person's Name/Title	Completion Date
B-2	Report fuel inventories for all City storage tanks (excluding the MGA-SA managed golf courses) for year-end purposes.	9	Accept	Florencio Peña, Fleet & Maintenance Operations Director	10/2009
	Action plan: • Continue to conduct annual inventory for City storage tanks under control of FMO and include these additional tanks: ✓Public Safety Technology Center (ITSD) – 1,000 gallon emergency generator tank (diesel) ✓Henry B. Gonzalez Convention Center – 600 gallon emergency generator tank (diesel) ✓Airport Cargo Terminal – 2,500 gallon emergency generator tank (diesel) ✓Fire Station 36 – 1,000 gallon tank (diesel)				
B-3	Use the proper inventory valuation method (e.g. FIFO, lower of average cost or market) when reporting year-end inventories in the City's SAP accounting system.	9	Accept	Florencio Peña, Fleet & Maintenance Operations Director	10/2009
	Action plan: • Utilize confirmed year-end valuation method to report end-of-year inventory in SAP.				
C	**Fuel Dispensing System** FMO should continue the process of implementing the new E.J. Ward, Inc. AFMS system with the goal of significantly reducing the number of fuel cards in use and related user input at the dispenser.	10	Accept	Florencio Peña, Fleet & Maintenance Operations Director	10/2009 (100% fuel sites completed)
	Action plan: • Complete installation and implementation of the AFMS hardware/software (utilization of radio frequency to allow vehicles pre-programmed by Fleet to fuel at City owned fuel dispensing locations). • Discontinue use of swipe cards effective with full implementation of AFMS.				

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Recommendation					
#	Description	Audit Report Page	Accept, Partially Accept, Decline	Responsible Person's Name/Title	Completion Date
D	**Fuel Sales Transactions** FMO should develop procedures to ensure that all WinC6 (or AFMS) fuel sales transactions transfer properly to FASTER and ultimately to SAP. These procedures should include daily and monthly reconciliations of WinC6 (or AFMS) data to FASTER and monthly reconciliations of FASTER data to SAP. Additionally, FMO should fully automate the transfer of data between systems.	10	Accept	Florencio Peña, Fleet & Maintenance Operations Director Hugh Miller, Information Technology Services Department Director	
	Action plan: • The procurement process to select a new fuel management solution included the requirement for a system that was capable of integrating with the fleet management system (FASTER). Vendors for both the fleet and fuel management systems are currently developing and testing software that will interface and provide "real-time" integration of data. Once completed, the AFMS will automatically transfer "real-time" data to the fleet management system (FASTER). • Continue to verify and ensure that all FASTER billing data is transferred to the SAP accounting system. • FMO will pursue the feasibility of automation of data transfer from FASTER to SAP with the Information Technology Service Department (ITSD).				12/2009 Completed 12/2009
E	**Surveillance Equipment** FMO should procure and install surveillance equipment at all fueling sites for which it is responsible. FMO should position surveillance cameras to capture sufficient detail including license plate numbers. In addition, retain surveillance media for at least six months.	11	Accept	Florencio Peña, Fleet & Maintenance Operations Director	10/2010
	Action plan: • Assess the feasibility and funding impact of installing surveillance equipment with video retention ability at all fueling sites. Current estimate to procure surveillance equipment is $181,000.00.				

A priority for the City Manager in FY 2009 was the goal of identifying funding, procuring and replacing a 10 year old fuel management system in need of updated auditing and security controls. To expedite the procurement process, the City Council considered the proposal submitted by E.J. Ward, Inc. and subsequently approved the utilization of their existing contract with the San Antonio Water System (SAWS). This procurement process allowed the City to take advantage of the favorable terms and pricing of an existing contract with a governmental partner. The E.J. Ward, Inc. Automated Fuel Management System (AFMS) has proven to be cost effective through the

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elimination of fuel cards, automation of fuel transactions, and interface capability with the City's current fleet database management system.

In addition to the recommendations identified by the Office of the City Auditor, the unbilled/unallocated fuel sales transactions attributed to Bexar County (totaling $11,823/3,328 gallons) have been processed and invoices will be disseminated in October 2009. These unbilled charges were traced to inaccurate data transfers and occurred on two (2) dates, February 11 and July 8, 2008. Implementation of an interface between the fuel and fleet management system is scheduled to be completed by December 2009 and will result in the automation of fuel transactions to the billing module.

We are committed to addressing the recommendations in the audit report and the plan of actions presented above.

Sincerely,

Florencio Peña
Director
Fleet Maintenance & Operations Department

Sharon De La Garza
Assistant City Manager
City Manager's Office

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