AUDIT REPORT

CITY OF NEW YORK
OFFICE OF THE COMPTROLLER
BUREAU OF MANAGEMENT AUDIT
WILLIAM C. THOMPSON, JR., COMPTROLLER

Follow-up Audit Report on the Inventory Controls and Purchasing Practices of the Department of Environmental Protection's Bureau of Water and Sewer Operations

MJ04-087F

June 28, 2004

THE CITY OF NEW YORK
OFFICE OF THE COMPTROLLER
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NEW YORK, N.Y. 10007-2341
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WILLIAM C. THOMPSON, JR.
COMPTROLLER

To the Citizens of the City of New York

Ladies and Gentlemen:

In accordance with the Comptroller's responsibilities contained in Chapter 5, § 93, of the New York City Charter, my office has audited the Bureau of Water and Sewer Operations (Bureau) of the Department of Environmental Protection (DEP) to determine whether the Bureau has implemented the three recommendations made in a previous audit of its controls over inventory. DEP is responsible for managing the City's water supply and wastewater treatment systems. The Bureau is primarily responsible for the operation, maintenance, and protection of the City's drinking water and wastewater collection systems.

Our audit resulted in the findings and recommendations that are presented in this report. The findings and recommendations were discussed with City officials; their comments were considered in the preparation of this report.

Audits such as this provide a means of ensuring that City resources are used effectively, efficiently, and in the best interest of the public.

I trust that this report contains information that is of interest to you. If you have any questions concerning this report, please e-mail my audit bureau at audit@comptroller.nyc.gov or telephone my office at 212-669-3747.

Very truly yours,

William C. Thompson

William C. Thompson, Jr.
WCT/fh

Report: MJ04-087F
Filed: June 28, 2004

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The City of New York
Office of the Comptroller
Bureau of Management Audit

Follow-up Audit Report on the Inventory Controls and Purchasing Practices of the Department of Environmental Protection's Bureau of Water and Sewer Operations

MJ04-087F

AUDIT REPORT IN BRIEF

This is a follow-up audit to determine whether the Bureau of Water and Sewer Operations (Bureau) of the New York City Department of Environmental Protection (DEP) has implemented the three recommendations made in a previous audit of the Bureau's controls over inventory. DEP is responsible for managing the City's water supply and wastewater treatment systems. The Bureau is primarily responsible for the operation, maintenance, and protection of the City's drinking water and wastewater collection (sewer) systems. The Bureau currently maintains two storehouses, one primarily for capital items in Queens, and one primarily for expense items in Brooklyn. In Fiscal Year 2003, the Bureau had a year-end inventory balance of $11,652,195. There were $7,845,123 worth of items stored in the Queens pipeyard and $3,807,072 worth of items stored in the Brooklyn general storehouse.

Audit Findings and Conclusions

Of the three recommendations we made in the previous audit, DEP partially implemented the recommendation to create an inventory project team and re-engineer the Bureau's inventory system. Since DEP decided to create its own project team, the recommendation to seek funding to hire an outside consultant was no longer applicable. The remaining recommendation to achieve inventory reductions totaling $1.07 million by improving capital commodity inventory turnover rates was not implemented.

In this follow-up audit, we found that DEP has made some improvements in the Bureau's oversight of inventory. The agency relinquished more than $5 million worth of inventory and is better managing its inventory of capital commodities (excluding accessories). However, some weaknesses remain. We supervised a count of 225 randomly selected items—94 at the Bureau's Queens pipeyard and 131 at the Brooklyn storehouse. The count revealed that 101 items had discrepancies between the reported amount and the amount on hand. Most of these items (90) were from the Brooklyn storehouse. Inventory transactions at the Brooklyn storehouse were not entered in a timely manner, if at all, largely contributing to the discrepancies found. We also

found inventory balances that were affected by incorrect unit value and significant inventory adjustments that were not adequately explained in the inventory records. We found that the Bureau does not count accessories stored at the Queens pipeyard, although it has assigned them a value equal to more than 20 percent of the inventory stored at that location. The agency does not track minimum or maximum stock levels or inventory turnover rates. As a result of timing errors in recording inventory transactions and numerous errors in the Bureau's year-end inventory valuation, we can place only limited reliance on the year-end inventory figures reported by the Bureau.

Audit Recommendation

To address the issues that still exist, we repeat the recommendation that we made in the previous report but was not fully implemented. DEP should:

- Create an inventory project team, reporting to the Commissioner or a high-level deputy commissioner, whose function would be to overhaul and redesign the Bureau's inventory system. In re-engineering the system, this team should incorporate the inventory standards encompassed in the Department of Investigation's "Standards for Inventory Control and Management" and in Comptroller's Directive #1. The ultimate goal of this project would be an inventory control system that: (1) is accurate (i.e., records match on-hand balances); (2) is timely (i.e., records are adjusted to immediately reflect disbursements and receipts); (3) is useful (i.e., reorder points are defined and are realistic); (4) is encompassing (i.e., the system tracks items that are supposed to be tracked); and (5) allows for the calculation of inventory turnover rates in order to achieve cost reductions through increased turnover. If DEP does not have the management capacity necessary for an in-house inventory re-engineering project, it should seek funding to engage a consultant to address these problems.

INTRODUCTION

Background

The Department of Environmental Protection (DEP) is responsible for managing the City's water supply and wastewater treatment systems. DEP's other responsibilities include handling hazardous-materials emergencies and toxic-site remediation, overseeing asbestos removal, managing citywide water conservation programs, and collecting water and sewer fees.

The Bureau of Water and Sewer Operations (Bureau) is primarily responsible for the operation, maintenance, and protection of the city's drinking water and wastewater collection (sewer) systems; the protection of adjacent waterways; and the development and protection of the DEP Capital Water and Sewer Design Program. The Bureau is also responsible for maintaining and updating all water and sewer information records for the City.

In 1999, our office issued an audit report on Bureau inventory operations that disclosed several control weaknesses. While the Bureau had written procedures describing methods for maintaining accurate inventory records and storing inventory, its inventory operations were not in compliance with those procedures. The audit found inaccurate inventory records, excessive amounts of stock on hand, and haphazard storage conditions at the pipe yards and general storehouse. The 1999 audit revealed a gross discrepancy of 27 percent between the amount on hand and the amounts reported in the records. The audit found that the Bureau could achieve one-time inventory cost savings of $1.07 million if it improved the efficiency of its inventory management by increasing the turnover rate for its working inventory of commodities purchased on expense account. The audit made three recommendations to DEP management.

The Bureau currently maintains two storehouses, one primarily for capital items in Queens, and one primarily for expense items in Brooklyn. In Fiscal Year 2003, the Bureau had a year-end inventory balance of $11,652,195. There were $7,845,123 worth of items stored in the Queens pipeyard and $3,807,072 worth of items stored in the Brooklyn general storehouse.

Objective

The objective of this audit was to determine whether the Bureau has implemented the three recommendations made in an earlier report, "Audit Report on the Department of Environmental Protection's Bureau of Water and Sewer Operations' Inventory Controls and Purchasing Practices" (MJ99-117A, issued May 25, 1999).

Scope and Methodology

The scope for this audit is Fiscal Years 2002 and 2003.

We requested the following materials from DEP officials:

- List of all inventory storage facilities
- Organizational chart of Bureau's inventory operations

- Written policies and procedures regarding inventory operations: "Central Services Division Inventory Control" and "Inventory Principles Warehouse Operations"
- Inventory list of all items as of June 30, 2002, and June 30, 2003
- Memoranda or other plans submitted to the City Office of Management and Budget regarding savings resulting from Bureau inventory reductions

We reviewed the New York City Department of Investigation's *Standards for Inventory Control and Management* and obtained a general understanding of the standards.

We conducted a series of interviews with persons who oversee or work in inventory operations and provide support to inventory operations personnel regarding the Hansen computer system's inventory control module. Individuals interviewed included the Chief of Administration, the Superintendent of Central Services Field Operations, and Warehouse Supervisors.

We conducted walkthroughs of the inventory locations to gain an understanding of the operations, and to review controls in place to safeguard inventory and restrict access to authorized personnel.

In conducting this follow-up, our approach was to audit the current conditions to determine whether DEP operations had improved controls over inventory to ensure that: records were accurate; transactions were entered in a timely manner; reorder points and minimum and maximum stock levels were defined and were realistic; and the system tracked items that were supposed to be tracked.

To determine whether the Bureau maintained accurate inventory records, we requested that DEP perform a physical inventory count of randomly selected items, which we supervised. Only those items reported as having a unit cost of $10 or more and a total value of $100 or more were included in our analysis. This brought our test population to 249 items[1] with a reported value of $6,036,405 as of June 30, 2003, for the Queens pipeyard, and 749 items with a reported value of $3,232,029 as of June 30, 2003, for the Brooklyn storehouse. From those populations, we selected a random sample of 225 items to count: 94 from Queens and 131 from Brooklyn. The value of the items in our sample was $2,758,505 at the time of the counts. The results of this sample were statistically projected.

For those items in which we found discrepancies, we reviewed transactions related to those items to determine whether they were entered in the system in a timely manner.

[1] The original test population consisted of 296 items valued at $7,622,622. However, this included 47 items valued at $1,586,217 that DEP categorizes as accessories. According to Bureau officials, accessories consist of items that were received as part of major purchases but were not specifically identified. Although the Bureau records those items in inventory, officials informed us at the time of the count that they are not included in the agency's annual physical inventory count. Accordingly, we did not include them in the count that we supervised. However, they were included in our analysis of the Bureau's overall controls over inventory.

We also interviewed agency personnel who oversee inventory operations to determine whether the Bureau utilized stock reorder points and had established minimum and maximum stock levels to ensure that stock levels were appropriate.

To determine whether the inventory records were complete, we selected a random sample of 36 items from the shelves and reviewed the inventory records to determine whether they were listed in the records. We selected another random sample of 30 items from the records and traced them to the shelves to determine whether those items existed.

* * * * * *

This audit was conducted in accordance with generally accepted government auditing standards (GAGAS) and included tests of the records and other auditing procedures considered necessary. This audit was performed in accordance with the audit responsibilities of the Comptroller, as set forth in Chapter 5, §93, of the New York City Charter.

Discussion of Audit Results

The matters covered in this report were discussed with DEP officials during and at the conclusion of this audit. A preliminary draft report was sent to DEP officials and was discussed at an exit conference on May 12, 2004. On May 21, 2004, we submitted a draft report to DEP officials with a request for comments. We received a written response from DEP officials on June 14, 2004, in which DEP generally agreed with the audit's recommendation. The full text of the DEP response is included as an addendum to this report.

RESULTS OF FOLLOW-UP AUDIT

Previous Finding: "Inventory Management Problems"

The previous audit found several control weaknesses that hindered the Bureau's ability to adequately manage its inventory. Although the Bureau had written procedures describing methods for maintaining accurate inventory records and storing inventory, its inventory operations were not in compliance with these procedures.

A count of 259 types of items with a reported value of $2,318,963 revealed a gross discrepancy of $618,218 (27%) between what was counted and what was reported in the Bureau's inventory records. In addition, the Bureau did not ensure that all items were counted as required by DOI Standards. We found that $3.8 million (18%) of the Bureau's total June 1998 inventory valued at $21.3 million represented obsolete inventory. In addition, our examination of the capital and expense inventories revealed low turnover rates[2] of 0.41 and 0.39, respectively, resulting in many items being overstocked. The previous audit also found that the Bureau would not need to carry its current stock levels for expense commodities if it improved the efficiency of its inventory management. The total reported value of the Bureau's expense working inventory was $2,371,493 as of June 1998. For these items, total usage value for Fiscal Year 1998 was $1,294,012. This resulted in a turnover rate for that year of only 0.55 ($1,294,012 ÷ $2,371,493). If the Bureau were to have increased the turnover rate to 2.0, the cost savings would have been $1.719 million.

> ***Previous Recommendation #1:*** "Create an inventory project team, reporting to the Commissioner or a high-level deputy commissioner, whose function would be to overhaul and redesign the Bureau's inventory system. In re-engineering the system, this team should incorporate the inventory standards encompassed in the Department of Investigation's 'Standards for Inventory Control and Management' and in the Comptroller's Directive #1. The ultimate goal of the project would be an inventory control system that is: (1) accurate (i.e., records match onhand balances); (2) timely (i.e., records are adjusted to immediately reflect disbursements/receipts); (3) useful (i.e., reorder points are defined and are realistic); and (4) encompassing (i.e., the system tracks items that are supposed to be tracked)."
>
> ***Previous DEP Response:*** "DEP agrees with this recommendation, and has already created a team to identify and relinquish obsolete or excess materials as the first task of improving our inventory control. As stated at the exit conference, we have identified substantial quantities of material to be salvaged, and we are working with Department of Citywide Administrative Services to reduce our inventory, free up space for more orderly stocking, and thereby facilitate inventory counting."

[2] Inventory turnover rate is the rate at which the inventory will be depleted and restocked during the year. For example, turnover rates of 0.5 and 2.0 means that the inventory would be turned over every two years and every six months, respectively.

Previous Recommendation #2: "Seek funding to hire an outside consultant to address these problems, using the future savings from its inventory operations to pay for the consultant. This would be an alternative if DEP does not think that it has the management skills necessary for an in-house inventory re-engineering project."

Previous DEP Response: "DEP believes that it possesses the management skills necessary to re-engineer our inventory system and, therefore, we do not agree that we should hire a consultant. We may, however, elect to engage a consultant to verify our inventory counting."

Current Status: PARTIALLY IMPLEMENTED

As DEP stated in its response, it believed that the agency had the skills necessary for an inventory re-engineering project and created an inventory project team, rendering recommendation #2 no longer applicable. We interviewed DEP personnel to determine who made up the inventory project team and what the results of the project were. According to an official, the team was composed of a number of people, including the Director of Field Operations, the Bureau Chief of Administration, and the Deputy Chief of Field Operations. He stated that the team met a number of times, but on a formal basis only four to five times. However, there are no minutes or memos of those meetings, no record of what was discussed, and no report of the team's findings was ever generated.

In April 2000, DEP put its inventory records on the Hansen system. In addition, the agency relinquished obsolete or excess materials from July 1999 through April 2004 with a recorded value of $5,002,068. However, DEP did not ensure that the team did as we recommended, which was to overhaul and redesign the agency's inventory system so that it would be accurate, timely, useful, and all-encompassing. In this audit, we found that DEP's inventory system still has weaknesses. Specifically, the system is not accurate, transactions are not entered in a timely manner, reorder points and minimum/maximum levels are not used, and not all items are tracked. These weaknesses are discussed in the following sections of this report.

Inaccurate Inventory Records

We supervised a count at the Queens pipeyard and the Brooklyn storehouse during the period November 2003 through January 2004 of 225 items—94 at the Queens pipeyard and 131 at the Brooklyn storehouse. The count revealed that 101 items had discrepancies between the reported amount and the amount onhand. However, most of these items were at the Brooklyn storehouse, with 90 items coming from that storehouse and only 11 from the Queens pipeyard. Applying the count results to the test population of 998 items at the Brooklyn and Queens locations, we project that 545 (54.6%) had a discrepancy between the amount on hand and the amount recorded in the agency records.[3] The results of the count, segregated by storage location, are shown in Table I, below.

[3] Based upon a 95 percent confidence level and an overall sampling error of plus or minus 5.6 percent. In other words, we are 95 percent confident that between 489 (49.0%) and 601 (60.2%) items had a discrepancy between the amount on hand and the amount recorded in the agency records.

Table I

Results of Auditors' Inventory Count at Bureau Inventory Storage Locations

Storage location	Population of Items A	Sample Size B	Number of Items with Discrepancy C	Discrepancy Rate D (C ÷ B)	Projected Number of Items with Discrepancy E (D x A)
Brooklyn (Expense)	749	131	90	68.7%	515
Queens (Capital)	249	94	11	11.7%	30[b]
Totals	**998**	**225**	**101**	**54.6%[a]**	**545**

[a]weighted overall rate, calculated by dividing the projected number of items with discrepancies by the total population of items (545 ÷ 998)
[b]rounded up to the nearest whole integer

In terms of dollars, the 225 items in our sample had a recorded value of $2,758,505 at the time of the counts; the value of the 101 items with a gross discrepancy was $130,888, only five percent of the pre-count value of the sample items. This value is low because most of the items with a discrepancy were found at the Brooklyn storehouse, where the expense commodities are generally stored, and generally had lower values than the items at the Queens pipeyard, where the capital commodities are generally stored. The accuracy of the inventory records for capital items has improved significantly since the previous audit; however, the accuracy of records for the expense items has remained poor. A comparison of our findings for the two audits is shown in Table II, below.

Table II

Physical Count Results of Follow-up Audit and Comparison With Physical Count Results of Previous Audit

Category	Previous Audit		Follow-up Audit	
	Expense	Capital	Expense	Capital
Total Shortage	$31,958	$314,108	$78,852	$13,416
Total Overage	$52,636	$219,516	$20,921	$17,699
Total Difference	$84,594	$533,624	$99,773	$31,115
Pre-Count Value	$420,446	$1,898,516	$475,983	$2,282,522
Error Variance	**20%**	**28%**	**21%**	**1%**

As shown in Table II, the error variance for capital items decreased from 28 percent in the previous audit to only one percent in this follow-up audit. (However, this variance was only for those items that DEP includes in its annual physical inventory count. Accessories, which constitute over 20 percent of the value of the inventory at the Queens pipeyard, are not counted by DEP and were therefore not included in the count.) The variance for expense items remained

high, however, increasing from 20 percent in the previous audit to 21 percent in this follow-up audit.

> ***DEP Response:*** "BWSO [Bureau of Water and Sewer Operations] fully agrees with the goal of having an accurate system where the on-hand balances match the records (the inventory in Hansen). Although progress has been made over the years since the implementation of Hansen, a lot more needs to be done to achieve an acceptable level of accuracy. In order to achieve this, the Bureau intends to implement a quality control and quality assurance system . . ."

Transactions Not Entered in a Timely Manner

The inaccuracy of the Brooklyn storehouse inventory records was largely the result of transactions not being entered in a timely manner, if at all. When DEP personnel investigated the discrepancies we found during our physical count, they identified a number of transactions that were not entered in the system. We identified a number of transactions that had not been entered in Hansen since July 2003—six months prior to the count. According to DEP, the data-entry clerk did not enter some transactions in the system because item numbers were missing or illegible. However, no one reviewed her work to ensure that all transactions were entered, and entered correctly. In a number of instances, we saw transactions that were entered in the system long after they occurred. In one instance, a transaction was entered 249 days late.

> ***DEP Response:*** "All information will be inputted within three days of the actual receipt or issue of materials."

Bureau Has Not Established Reorder Points or Minimum and Maximum Stock Levels

The Bureau has not established reorder point(s) and minimum or maximum inventory levels to help it more effectively manage its inventory. Hansen can be used to track minimum or maximum levels and establish reorder points. Nevertheless, personnel do not do so. Instead, agency personnel rely on their professional judgment to determine the agency's inventory needs. At the exit conference, DEP management stated that in the future the agency will be using the minimum/maximum levels and reorder points available in the system.

> ***DEP Response:*** "The Project team will develop reorder points and minimum levels for all of its stock based on past history usage and past history timelines. The reorder quantities and reorder levels will be entered for each item in the Hansen system. Monthly reports will be generated that will 'flag' items that are approaching their reorder level. At this point Inventory Management will decide whether to reorder or not. The Bureau will use these reorder points as useful guides in reordering, but will not view them as 'carved in stone.' There are too many other variables that come into play when deciding to reorder, i.e., unexpected increases or drops in usage, unforeseen manufacturing changes, and delays in requirement contracts being awarded."

Bureau Does Not Count All Items in Inventory

Although the Bureau's controls over capital items have improved, we found that the Bureau is not properly accounting for all of its capital inventory. We found that more than 20 percent of the inventory at the Queens pipeyard is not counted, and that the Bureau does not have a standard method of assigning a value to those items. Without a standard policy for pricing those items, the Bureau may not be providing an accurate value for its inventory.

There are a number of items at the Queens pipeyard that were received as part of major purchases but were not specifically identified. For example, if the Bureau purchases fire hydrants (main part), the vendor will include gaskets, retainer glands, and bolts (which the Bureau classifies as accessories). Those accessories are assigned a value but are not physically counted at the end of the year. Nevertheless, they are included in the final report of total physical inventory/total assets on hand and comprise a significant portion of the reported inventory. DEP's final inventory report for Fiscal Year 2003 showed those accessories as having a total dollar value $1,802,761, which represents 23% of the $7,845,123 in reported inventory at the Queens pipeyard. Table III, below, summarizes the cost of fire hydrants, a main item, and its accessories as reported at the end of Fiscal Year 2003.

Table III

Analysis of the Unit Price for Fire Hydrants and Accessories
As of June 30, 2003

Part #	Description	Qty on hand	Unit cost	Reported cost
6118	Fire Hydrant	170	806.47	137,099.90
	Accessories:			
6326	Gasket	9137	0.82	7,492.34
6304	Retainer glands	3890	7.44	28,941.60
6372	Bolt 3/4 x 31/2	18428	0.45	8,292.60
Reported value of accessories				44,726.54
Reported value of fire hydrant plus accessories				181,826.44
Percentage of total value attributable to accessories				24.6%

As shown in Table III, the accessories accounted for 25 percent of the total reported value of the fire hydrants and their accessories. (We also found unit pricing discrepancies for those items. From Fiscal Year 2002 to Fiscal Year 2003, the unit costs for the bolts and retainer glands decreased 87 percent and 51 percent, respectively, from $3.39 to $0.45 and from $15.16 to $7.44. During the same period, the unit cost for fire hydrants increased 107 percent, from $389.73 to $806.47.) Since accessories account for a significant portion of the inventory at the pipeyard, the Bureau should institute better controls over those items and ensure that the reported amount on

hand is accurate and that the values assigned to those items are reasonable.

> ***DEP Response:*** "The draft statement that the 'Bureau does not count all of its accessories' is only partly correct. There are accessories that the Bureau counts, and there are those that are not counted. However, the Bureau will now count **all** accessories."
>
> ***Auditor Comment:*** The statement that the Bureau does not count all accessories is based on what DEP officials told us during the audit. Nevertheless, we are pleased that DEP will ensure that the Bureau counts all accessories.

Inventory Adjustments Not Adequately Documented and Justified

We identified a number of instances in which unit pricing errors and inadequately documented inventory adjustments significantly affected inventory balances.

We selected the 16 expense items with the greatest reductions in their reported values from Fiscal Year 2002 to Fiscal Year 2003 to determine the reasons for the reductions. According to the Bureau's year-end inventory records, the reported value for those items decreased 60 percent—from a Fiscal Year 2002 reported ending inventory balance of $589,507 to a Fiscal Year 2003 reported ending inventory balance of $236,370. For these items, we reviewed the transaction history dating back to April 2000, when the Bureau's inventory records were first put on Hansen. Of the 16 items, four had a significant change in unit value during Fiscal Year 2003. The unit value change for two of the four items appears to be due to a typographical error (e.g., $271 versus $2.71); for the other two items the change appears to be due to an error in the unit of measure (using the cost of a case of items as the unit cost for each item). These errors alone resulted in the reported inventory on hand being overstated at the start of Fiscal Year 2003 by $88,752.

We also found inventory balances that were significantly affected by adjustments. We obtained the detailed adjustments reports for the 16 items. The Bureau made 18 inventory adjustments to those items during Fiscal Years 2002 and 2003; three items had inventory adjustments that accounted for 49 percent of the inventory subtractions for those items in Fiscal Year 2003. The adjustments are noted under various categories, such as "return to vendor" and "physical inventory correction." There is also a space for comments, explaining the particular reasons for the adjustments. However, this information was not provided for 9 (50%) of the 18 adjustments. One item (stock item #2208) had its inventory adjusted by subtracting 1,490 units of that item from the inventory records, bringing the reported year-end balance on hand to zero. The reported unit cost for this item was $31.63, meaning that the Bureau deducted inventory valued at $47,129 (1,490 units @ $31.63 each) through an adjustment. Nevertheless, the adjustment is noted in the system merely as a "physical inventory correction."

The Bureau should tighten its controls over inventory record-keeping to reduce the number of instances in which incorrect unit prices are used, and should better document any adjustments made to inventory records.

DEP Response: "Supervisors in the Storehouses will insure that all adjustments that are made will have full explanations in the Comments Tab of the Adjustment form. The explanation will be detailed and explain the chain of events that necessitated the adjustment."

Bureau Does Not Track Inventory Turnover Rate

The purpose of an inventory system is to help personnel manage an agency's inventory efficiently (to maintain sufficient inventory levels without overage or shortages) and economically (at the lowest possible cost). The turnover rate—the rate at which inventory will be depleted and restocked during the year—is a standard measure of an inventory operation's efficiency. In the previous audit, we calculated the turnover rate for the Bureau's working inventory of expense commodities. Working inventory was defined as items that had at least 10 units on hand, a total value of $100 or more, and reported use at some time during a three-year period. The previous audit found that DEP's turnover rate for its working inventory of expense items was only 0.55 in Fiscal Year 1998, meaning that DEP used a little more than half of the working inventory it maintained for that year. We attempted to determine whether the turnover rate has improved since the previous audit; however, Bureau personnel do not track the current turnover rate. In addition, due to the Bureau's failure to record transactions in a timely manner, we did not believe we could rely on the information in the system to determine the Bureau's working inventory and its use during the year. As a result, we were unable to calculate a turnover rate for working inventory.

DEP Response: "Turnover rates will be calculated on a monthly basis using Crystal Reports. Inventory Management will analyze these rates. Achieving higher turnover rates can only occur by increased usage and/or lowering amounts ordered. Both variables for each item must be carefully studied before any decision is made to change the ordering pattern."

Overall, the issues that we found for the items reviewed led us to conclude that we can place only limited reliance on the Bureau's computerized inventory records. In the absence of accurate and timely records, management is hindered in determining whether it is running an efficient inventory operation.

Previous Recommendation #3: "Submit to the City's Office of Management and Budget a plan showing how it will achieve inventory reductions totaling $1.07 million by improving turnover rates for its working inventory of expense commodities."

Previous DEP Response: "DEP will attempt to improve its turnover rate by further computerizing its inventory operation when we install the Hansen System Inventory Control Module. We cannot control policies and procedures external to our Bureau which result in long procurement lead times or extended delivery schedules. However, by setting reorder levels, which account for external delays, we will be better able to adjust our purchasing practice to improve our turnover rates across a large number of

mission critical items. While we have attempted this manually, we have not been able to predict cost effective reorder times for our inventory because of past staffing levels and the variation in procurement times."

Current Status: NOT IMPLEMENTED

As stated previously, DEP does not track the turnover rate for its working inventory of expense commodities, and we did not believe that we could rely on the information in the system to determine working inventory, and hence calculate a working inventory turnover rate.

Recommendation

To address the issues that still exist, we repeat the recommendation that we made in the previous report but was not fully implemented. We recommend that DEP:

1. Create an inventory project team, reporting to the Commissioner or a high-level deputy commissioner, whose function would be to overhaul and redesign the Bureau's inventory system. In re-engineering the system, this team should incorporate the inventory standards encompassed in the Department of Investigation's *Standards for Inventory Control and Management* and in Comptroller's Directive #1. The ultimate goal of the project would be an inventory control system that: (1) is accurate (i.e., records match on-hand balances); (2) is timely (i.e., records are adjusted to immediately reflect disbursements and receipts); (3) is useful (i.e., reorder points are defined and are realistic); (4) is encompassing (i.e., the system tracks items that are supposed to be tracked); and (5) allows for the calculation of inventory turnover rates in order to achieve cost reductions through increased turnover. If DEP does not have the management capacity necessary for an in-house inventory re-engineering project, it should seek funding to engage a consultant to address these problems.

DEP Response: "BWSO did create an Inventory Project Team following the 1999 Audit recommendation, which reports directly to the Deputy Commissioner of BWSO. . . . The Bureau will not create a new Project Team, but will have the Project Team address the concerns that are featured in the draft report."

The City of New York

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RE: DEP's response to:
Follow-up Audit Report on the Inventory Controls and Purchasing Practices of the Department of Environmental Protection Bureau of Water and Sewer Operations

Audit Number: MJ04-087F

Dear Mr. Brooks:

Attached is the Agency's response to the Above-mentioned report. We have responded to your recommendations and would appreciate our comments being incorporated in to your final report.

If you have any questions regarding our response, please contact John Lento, Agency Audit Coordinator, at 718-595-3424.

Yours Truly,

Douglas S. Greeley P.E.

Attachment

BUREAU'S RESPONSE TO DRAFT OF AUDIT REPORT OF THE INVENTORY CONTROLS AND PRACTICES OF THE DEP'S BUREAU OF WATER AND SEWER OPERATIONS.

JUNE 9, 2004

The Bureau of Water and Sewer Operations will respond to Recommendation # 1, sub-recommendations 1, 2, 3, 4, & 5 on page 12, rather than commenting on any of the particular statistics, charts, etc., of the Draft Report.

Recommendation 1 – Create an inventory project team, reporting to the Commissioner or a high-level deputy commissioner, whose function would be to overhaul redesign the Bureau's inventory system. In re-engineering the system, this team should incorporate the inventory standards encompassed in the Department of Investigation's "Standards for Inventory Control and Management" and in Comptroller's Directive #1. The ultimate goal of the project would be an inventory control system that:

Response: BWSO did create an Inventory Project Team following the 1999 Audit recommendation, which reports directly to the Deputy Commissioner of BWSO. The Project Team implemented a new, computerized inventory system known as Hansen. The physical inventory that was entered into Hansen was done by outside auditors. The Bureau has been using this system since May 2000. The Hansen inventory system is part of the overall Hansen system, which encompasses complaints, work orders, and asset management.

The Project team also relinquished over $5 million worth of inventory that was considered un-needed surplus, and reduced the discrepancy rate (in value of inventory) of Capital items from 28% in the previous audit to 1% in the follow-up audit. This draft does mention all of the above, but gives little weight to these accomplishments. The Bureau will not create a new Project team, but will have the Project team address the concerns that are featured in the draft report.

(1) Is accurate (i.e., records match on-hand balances).

Response: BWSO fully agrees with the goal of having an accurate system where the on-hand balances match the records (the inventory in Hansen). Although progress has been made over the years since the implementation of Hansen, a lot more needs to be done to achieve an acceptable level of accuracy. In order to achieve this, the Bureau intends to implement a quality control and quality assurance system that will take the form of the following:

- **Quality Control on all Storehouse Requisitions**

- The District Supervisors will review all requisitions received at the Storehouses. Each requisition will be referenced against the General Storehouse catalog. The District Supervisor will insure that proper stock numbers and their descriptions have been listed. All discrepancies noted will be edited and initialed by the District Supervisor.

- After the requisition has been checked and approved, the District Supervisor will initial each page of the requisition and place the entire requisition in the "requisition pending" file rack. Each requisition will be placed in the order of receipt.

- When the requisition is ready to be filled, the Stock Area Supervisor will supervise the selection of stock and inspect each completed order before packaging.

- The requisition and material will then be delivered to the requesting location. At the location it will be checked for accuracy of amounts. It will be signed by a responsible person and sent back to the General Storehouse. It will then be placed in the file basket "Requisitions to be entered into Hansen". (Hansen being the inventory system used to track all items in the system).

- The Storehouse office staff will enter the requisition information into Hansen. This will be done within three working days (NO EXCEPTIONS).

If there are any discrepancies with the requisition, it will be placed in a file basket marked" Requisitions needing Assistance" which a supervisor will check at the beginning of every workday and provide what information is needed to finish the entering of the requisition.

- **Quality Control on all Storehouse Receipts**

- All materials received will be checked against the original orders and the orders that were inputted into Hansen for both price and quantity. Partial receipts will be noted as such. Once the order received has been checked, the receiving report indicating price, quantity and part number will be placed in the file basket "Receipts to be entered into Hansen". This will be done within three working days of the receipt.

- **Quality Control on all Adjustments**

Supervisors in the Storehouses will insure that all adjustments that are made will have full explanations in the Comments Tab of the Adjustment form. The explanation will be detailed and explain the chain of events that necessitated the adjustment.

- **Quality Control on all Hansen Inputting**

After being entered into the Hansen System copies of the original requisitions and receiving reports will be sent weekly to Management Services at Lefrak, where the original document will be checked against Hansen's data for accuracy. Staff that is fully trained in Hansen will check every Issue, Receipt and Transfer in Hansen against the copies of the original documents. All discrepancies will be checked with the Storehouses and then appropriate adjustments will be made.

- **Quality Assurance**

The Superintendent of Inventory Control will perform Quality Assurance on all of the above on a monthly basis. Samples of each type of transaction for the month will be checked for accuracy and timeliness of inputting.

- **Additional Hansen Training**

All Inventory staff will have additional Hansen training at Lefrak City on how to minimize errors.

(2) is timely (i.e., records are adjusted to immediately reflect disbursements and receipts).

Response: All information will be inputted within three days of the actual receipt or issue of materials.

(3) is useful (i.e., reorder points are defined and are realistic)

Response: The Project team will develop reorder points and minimal levels for all of its stock based on past history usage and past history timelines. The reorder quantities and reorder levels will be entered for each item in the Hansen system. Monthly reports will be generated that will "flag" items that are

approaching their reorder level. At this point Inventory Management will decide whether to reorder or not. The Bureau will use these reorder points as useful guides in reordering, but will not view them as "carved in stone". There are too many other variables that come into play when deciding to reorder, i.e., unexpected increases or drops in usage, unforeseen manufacturing changes, and delays in requirement contracts being awarded.

Although the Bureau seeks to have an efficient inventory system, the Bureau's primary mission is to insure a safe and working water and sewer system for NYC. In order to accomplish its primary mission, the Bureau must always have the materials on-hand that it requires.

(4) is encompassing (i.e., the system tracks items that are supposed to be tracked).

Response: The draft statement that the "Bureau does not count all of its accessories" is only partly correct. There are accessories that the Bureau counts, and there are those that are not counted. However, the Bureau will now count **all** accessories.

(5) allows for the calculation of inventory turnover rates in order to achieve cost reductions through increased turnover. If DEP does not have the management capacity necessary for an in-house re-engineering project, it should seek to engage a consultant to address these problems.

Response: DEP will not engage a consultant. The Inventory Project Team is more than capable of achieving the necessary changes. Turnover rates will be calculated on a monthly basis using Crystal Reports. Inventory Management will analyze these rates. Achieving higher turnover rates can only occur by increased usage and/or lowering amounts ordered. Both variables for each item must be carefully studied before any decision is made to change the ordering pattern.