



**U.S. Department of the Interior  
Office of Inspector General**

## **AUDIT REPORT**

**INVENTORY MANAGEMENT AND VALUATION,  
NATIONAL MAPPING DIVISION,  
U.S. GEOLOGICAL SURVEY**

**REPORT NO. 96-I-1239  
SEPTEMBER 1996**



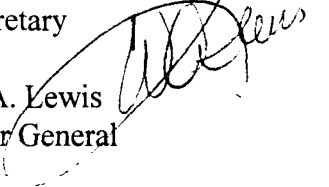
# United States Department of the Interior

OFFICE OF INSPECTOR GENERAL  
Washington, D.C. 20240

DEC 3 1996

## MEMORANDUM

TO: The Secretary

FROM: Wilma A. Lewis  
Inspector General 

SUBJECT SUMMARY: Final Audit Report for Your Information - "Inventory Management and Valuation, National Mapping Division, U.S. Geological Survey"  
(No. 96-I-1239)

Attached for your information is a copy of the subject final audit report. The objective of the audit was to determine whether the U.S. Geological Survey: (1) was effectively managing and valuing its inventory of maps and books held for sale and (2) had adequate inventory valuation procedures to ensure that the balance for inventories held for sale in its financial statements for fiscal year 1995 was reliable and auditable.

We concluded that the Geological Survey was not effectively managing the production and storage of maps and books, primarily because it had not fully implemented all the recommendations contained in our September 1989 audit report on the National Mapping Division's inventory and sales management. Specifically, the Geological Survey had not conducted physical inventories and updated inventory records, implemented an inventory reduction plan, formalized the methods for ordering maps, and established time requirements for processing printing requests. As a result, inventory records were inaccurate; excess maps and books were being printed and stored; and a large portion of the inventory was excess or obsolete, while other items were out of stock. We also concluded that the \$83.7 million balance reported in the fiscal year 1994 financial statements for inventory held for sale could not be substantiated because: (1) the formula for computing the inventory balance contained errors; (2) the Geological Survey did not have accurate historical cost data; and (3) inventory records were inaccurate.

The Geological Survey concurred with all of our recommendations, which pertained to establishing and implementing an inventory reduction program, revised ordering and reordering procedures, controls to prevent out-of-stock conditions, methods for ensuring accurate inventories, and valuation procedures that were in compliance with applicable guidelines. Based on the Geological Survey's response to our report, we considered all of the recommendations resolved.

If you have any questions concerning this matter, please contact me at (202) 208-5745 or Mr. Robert J. Williams, Acting Assistant Inspector General for Audits, at (202) 208-4252.

Attachment



# United States Department of the Interior

OFFICE OF THE INSPECTOR GENERAL  
Washington, D.C. 20240

SEP 30 1996

## Memorandum

To: Assistant Secretary for Water and Science

From: Robert J. Williams *Robert J. Williams*  
Acting Assistant Inspector General for Audits

Subject: Audit Report on Inventory Management and Valuation, National Mapping Division, U.S. Geological Survey (No. 96-I-1239 )

This report presents the results of our audit of inventory management and valuation at the U.S. Geological Survey's National Mapping Division. The objective of the audit was to determine whether the Geological Survey: (1) was effectively managing and valuing its inventory of maps and books held for sale and (2) had adequate inventory valuation procedures to ensure that the balance for inventories held for sale in its financial statements for fiscal year 1995 was reliable and auditable.

We concluded that the Geological Survey was not effectively managing the production and storage of maps and books, primarily because it had not fully implemented all the recommendations in our prior audit report "Inventory and Sales Management, National Mapping Division, U.S. Geological Survey" (No. 89- 114). Specifically, the Geological Survey had not conducted physical inventories and updated inventory records, implemented an inventory reduction plan, formalized the methods for ordering maps, and established time requirements for processing printing requests. As a result, inventory records were inaccurate; excess maps and books were being printed and stored; and a large portion of the inventory was excess or obsolete, while other items were out of stock. We also concluded that the \$83.7 million balance reported in the fiscal year 1994 financial statements for inventory held for sale could not be substantiated because: (1) the formula for computing the inventory balance contained errors; (2) the Geological Survey did not have accurate historical cost data; and (3) inventory records were inaccurate. Furthermore, we concluded that these deficiencies could not be corrected in time to provide a reliable inventory balance for the fiscal year 1995 financial statements.

We recommended that the Director, U.S. Geological Survey, establish and implement: (1) a comprehensive inventory reduction program; (2) ordering and reordering procedures based on sales history data; (3) controls to prevent out-of-stock conditions; (4) statistical methods for ensuring accurate inventory counts; and (5) valuation procedures in accordance with the Statement of Federal Financial Accounting Standard No. 3, "Accounting for Inventory and Related Property."

During our audit, we worked with Geological Survey officials to evaluate the current inventory management system and to develop solutions for correcting deficiencies identified. As a result of these cooperative efforts, the Geological Survey has taken prompt action to improve the system. Subsequent to the completion of our review, an Inventory Management Improvement Team was established, which developed an action plan to correct the deficiencies identified. The plan includes provisions for establishing: (1) statistical sampling procedures for verifying the inventory records; (2) policies for stock levels and print run sizes; (3) a method to identify excess stock; (4) the use of print-on-demand capabilities; and (5) procedures for inventory reduction and product abandonment, which should significantly reduce the map inventory and make it more manageable. The Improvement Team has also developed a reasonable approach for valuing the map inventory. Based on our review of this plan and discussions with National Mapping Division officials, we believe that timely implementation of the plan should result in an effective inventory management system and ensure the reliability of the inventory and accounting records.

In the August 19, 1996, response (Appendix 4) from the Director, U.S. Geological Survey, the Geological Survey concurred with all the recommendations in the draft report. In addition, the Geological Survey provided additional comments, which we incorporated into the report as appropriate. Based on the response, we considered Recommendations A.3 and B. 1 resolved and implemented and Recommendations A. 1, A.2, and A.4 resolved but not implemented. Accordingly, the unimplemented recommendations will be referred to the Assistant Secretary for Policy, Management and Budget for tracking of implementation, and no further response to the Office of Inspector General is required (see Appendix 5).

The legislation, as amended, creating the Office of Inspector General requires semiannual reporting to the Congress on all audit reports issued, actions taken to implement audit recommendations, and identification of each significant recommendation on which corrective action has not been taken.

We appreciate the U.S. Geological Survey's cooperation in the conduct of this audit.

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# INTRODUCTION

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## BACKGROUND

The mission of the National Mapping Division, U.S. Geological Survey, is to generate geographic, cartographic, earth science, and remotely sensed information. The Division disseminates this information to the public, state and local governments, depository libraries (such as the National Archives and selected universities), and Federal agencies. This is accomplished through the Branch of Information Services, in Denver, Colorado; the Geological Survey's nine Earth Science Information Centers; and two information outlets operated by other Federal agencies. Some of the Geological Survey's major customers include 64 state-operated Earth Science Information Centers and 1,700 Authorized USGS Business Partners, which purchase this information from the Geological Survey and sell or distribute it to the public. Approximately 150,000 types of maps, books, and open file reports and about 10 million aerial and space images are available for purchase. In fiscal year 1994, the Geological Survey sold about 4 million maps, totaling \$5.6 million, to Federal and non-Federal customers.

The Division is composed of (1) a headquarters office in Reston, Virginia, which provides overall policy and direction for the mapping program, establishes prices for maps, and computes the inventory held for sale balance reported in the financial statements; (2) five regional mapping centers (located in Reston; Denver, Colorado; Sioux Falls, South Dakota; Rolla, Missouri; and Menlo Park, California), which collect and analyze data and produce related products; (3) the Mapping Applications Center in Reston, which performs the printing operations; and (4) the Earth Resources Observation Center in Sioux Falls, which produces and distributes aerial photography, satellite imagery, and digital products.

The Branch of Information Services, within the Regional Mapping Center in Denver, receives, warehouses, and disseminates domestic and foreign cartographic, geographic, and earth science data and products. The Branch also assists in the development and implementation of product distribution policies, pricing studies, and sales forecasts and analyses, and it markets maps, digital cartographic data, aerial photographs, and other map products. The Branch's centralized distribution facility also serves as an agent for the Government Printing Office to sell Geological Survey books. The facility conducts over-the-counter and mail-order sales of books and maps and distributes these products at no cost to Federal depository libraries. The Division also charges the public and Federal, state, and local governmental agencies for its reproduction and distribution costs.

## **OBJECTIVE AND SCOPE**

The objective of the audit was to determine whether the Geological Survey: (1) was effectively managing and valuing its inventory of maps and books held for sale and (2) had adequate inventory valuation procedures to ensure that the balance for inventories held for sale in its financial statements for fiscal year 1995 was reliable and auditable. Our review was limited to a review of the recorded inventory balances for fiscal year 1994 for maps (\$74.7 million) and books (\$7.2 million), which did not include the post-closing adjustment amount of \$1.8 million that increased the balance to \$83.7 million on the financial statements. We did not review the recorded inventory balances for the Water Resources Division's hydrologic equipment (\$4 million) or the National Mapping Division's CD-ROM inventory (\$264,700).

Our audit was made, as applicable, in accordance with the "Government Auditing Standards," issued by the Comptroller General of the United States. Accordingly, we included such tests of records and other auditing procedures that were considered necessary under the circumstances. Our review of the Geological Survey's map inventory valuation methodology included a comparison of the Geological Survey's procedures with those required by the Statement of Federal Financial Accounting Standards Number 3, "Accounting for Inventory and Related Property." In addition, we reviewed the procedures used by the Geological Survey to conduct the fiscal year 1993 physical inventory and reviewed current production, distribution, sales, and inventory procedures by performing walk-throughs of these activities and reviewing related documentation. To determine the accuracy of the reported inventory balances, we reconciled the quantities reported in the Federal Financial Inventory System with an actual count of selected items. Our audit included visits or contacts with officials in the offices listed in Appendix 1.

As part of our review, we evaluated the internal controls within the inventory management and distribution functions of the National Mapping Division. Our evaluation noted weaknesses regarding inventory management and valuation. These weaknesses are discussed in the Findings and Recommendations section of this report. Our recommendations, if implemented in a timely manner, should improve internal controls in these areas.

We also reviewed the Secretary's Annual Statement and Report to the President and the Congress, required by the Federal Managers' Financial Integrity Act of 1982, for fiscal years 1993 through 1995 to determine whether any reported weaknesses were within the objective and scope of our audit. The report for fiscal year 1993 identified the lack of an adequate system to support effective management of the inventory, ordering, and sale of maps and books as a material weakness. Although the report for fiscal year 1994 indicated that the material weakness had been corrected, our current review found that these deficiencies still existed. The fiscal year 1993 report also identified the Geological Survey's failure to integrate financial management and accounting systems as material

nonconformance with Federal accounting system requirements. According to the fiscal year 1995 report, the nonconformance issue was to be resolved by September 1996.

## **PRIOR AUDIT COVERAGE**

During the past 6 years, the Office of Inspector General has issued four audit reports that identified issues relating to inventory management in the Geological Survey's mapping program:

- The report "Inventory and Sales Management, National Mapping Division, U.S. Geological Survey" (No. 89-114), dated September 1989, concluded that the National Mapping Division was generally achieving its mission of producing maps but that it needed to improve the economy and efficiency of its operations. Specifically, the report stated that the Division had not established adequate inventory management procedures to efficiently control the ordering and storing of maps and books and was not maintaining adequate inventory records. Our current audit found that, while some progress had been made to correct these deficiencies, further improvements were needed.

- The report "U.S. Geological Survey Statement of Financial Position as of September 30, 1992" (No. 93-I-1214), dated June 1993, stated that the Office of Inspector General was unable to express an opinion on the Geological Survey's statement of financial position, in part, because the Geological Survey could not provide sufficient detailed records to support the amounts reported for inventory held for sale. According to the report, the Geological Survey did not adequately control and account for \$65.4 million of the inventory of products held for sale.

- The report "U. S. Geological Survey Principal Financial Statements for Fiscal Years 1993 and 1994" (No. 95-I-582), dated February 1995, stated that the Office of Inspector General was unable to express an opinion on the Geological Survey's financial statements, in part, because of the lack of adequate supporting documentation to substantiate the amounts reported for inventory held for sale. Specifically, the Geological Survey did not maintain detailed support for the amounts reported in the general ledger for inventory at September 30, 1993, and 1994 (\$71 million and \$88 million, respectively), and had not conducted a physical review of its map inventory at fiscal year-end or performed procedures necessary to validate the account balance.

- The report "U. S. Geological Survey Principal Financial Statements for Fiscal Year 1995" (No. 96-I-563), dated March 1996, stated that the financial statements were reliable in all material respects except for the amounts reported for published map inventory and invested capital. The Geological Survey disclosed in its notes to the financial statements that neither periodic or perpetual inventory procedures nor accurate



inventory valuation methods were implemented during fiscal year 1995. As a result, we could not validate the amounts reported for inventory in the financial statements.

## **FINDINGS AND RECOMMENDATIONS**

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### **A. INVENTORY MANAGEMENT**

The U.S. Geological Survey was noneffectively managing the production and storage of maps and books. The Federal Acquisition Regulation (41 CFR 101-27 ) provides policies, principles, and guidelines on inventory management. However, the Geological Survey was not fully complying with these requirements, in part, because it had not effectively implemented the recommendations in our prior audit report “Inventory and Sales Management, U.S. Geological Survey. ” As a result, map inventory records were inaccurate and unreliable for financial reporting purposes, and excess books and maps were being printed and stored. Subsequent to the completion of our review, the Geological Survey developed an inventory management improvement plan, which should correct these deficiencies and result in an effective inventory management system.

Our prior audit found that the inventory records were inaccurate and that the Geological Survey was producing and storing maps and books in excess of demand, which resulted in unnecessary printing and storage costs. Our current review found that while the current inventory listing of books on hand was accurate, the Geological Survey had not developed adequate inventory management procedures to account for all maps printed and distributed, resulting in inaccurate map production and inventory records. For example, we judgmentally selected a sample of 15 map products listed in the Federal Financial Inventory System records and compared the recorded number of maps with the maps on hand. Our review identified significant variances in the inventory stock for 13 of the 15 maps, as shown in Appendix 2. In addition, the Geological Survey was still printing and storing excess maps, having about a 15-year supply at the time of our review. All of these maps were classified in the Geological Survey’s fiscal year 1994 financial statements as inventory held for sale, when, in fact, 94 percent of these maps (70,080 products) had distribution levels of less than 200 copies in 1994. A significant portion of this inventory should have been classified as excess inventory, in accordance with the Statement of Federal Financial Accounting Standard No. 3, “Accounting for Inventory and Related Property. ”

We concluded that these conditions existed, in part, because the Geological Survey had not implemented the recommendations from our prior report that related to conducting physical inventories and periodically updating the inventory records, implementing an inventory reduction plan, and formalizing the methods for ordering maps (see Appendix 3).

In conjunction with the Geological Survey’s Inventory Management Improvement Team, we identified other factors that contributed to the inaccurate inventory records as follows:

- Inventory systems were not fully integrated and on-line with the Federal Financial System. For example, eight of the nine Earth Science Information Centers did not have the capability to provide up-to-date inventory balances or to identify out-of-stock conditions because their reporting systems did not track by product title or type of map. Therefore, estimates rather than actual counts were used to value the inventory. In addition, officials at the mapping centers and the printing plant were not aware of out-of-stock conditions in the warehouse and the Earth Science Information Centers.

- Official inventory records maintained on the Federal Financial Inventory System were not updated to reflect all production and distribution of maps. We found that maps removed from print runs in the printing plant and shipped directly to customers were not included in the map inventory. For example, in 1993, approximately 40,000 maps were removed from production in the printing plant and shipped directly to customers before this production was entered into the inventory system. In addition, maps shipped directly from the printing plant to the Earth Science Information Centers in Reston and in Washington, D.C. were also not included in the official inventory records. These omissions resulted in the inventory counts being understated.

- Maps were removed from the Inventory Subsystem when they were shipped from the warehouse to the Earth Science Information Centers before they were sold to the public. Accordingly, these maps were removed from the official inventory records, when, in fact, they were still available for sale, which resulted in the inventory being understated.

- Information on historical sales and distribution was not used as a critical criterion for establishing print run quantities, which resulted in excess production and inventory at the Denver warehouse.

## **Recommendations**

We recommend that the Director, U.S. Geological Survey:

1. Establish inventory system controls and procedures which ensure that an accurate perpetual inventory count is maintained for each Geological Survey inventory site (including the Earth Science Information Centers). These controls and procedures should also provide for periodic physical verification of the inventories using statistical sampling techniques.

2. Establish a comprehensive inventory reduction program to ensure that, on a periodic basis, excess and obsolete maps are identified, are appropriately classified in the accounting records, and are removed from the warehouse.

3. Establish and implement procedures for ordering and reordering print runs of maps and map products based on the sales/distribution history of those products or similar products. The procedures should include adequate controls to prevent items from becoming out of stock.

4. Ensure that the maps distributed to the Earth Science Information Centers are recorded in the Federal Financial Inventory System.

### **U.S. Geological Survey Response and Office of Inspector General Reply**

In the August 19, 1996, response (Appendix 4) from the Director, U.S. Geological Survey, the Geological Survey concurred with Recommendations 1-4. Based on the response, we consider Recommendation 3 resolved and implemented and Recommendations 1, 2, and 4 resolved but not implemented (see Appendix 5).

## **B. INVENTORY VALUATION**

The Geological Survey was not fully complying with guidelines for properly valuing its inventory of maps and books held for sale because: (1) the formula for computing the inventory balance contained errors; (2) the Geological Survey did not have historical cost data; and (3) the inventory records were inaccurate. As a result, the amounts used to support the inventory held for sale balance on the Geological Survey's fiscal year 1994 financial statements (maps and map-related products totaling \$74.7 million and books totaling \$7.2 million) were unreliable. The Statement of Federal Financial Accounting Standards Number 3, "Accounting for Inventory and Related Property," requires that inventory held for sale be valued at either historical cost or latest acquisition cost (if the value approximates historical cost). Although the Geological Survey was addressing these issues, corrective actions were not completed in time to provide a reliable inventory balance for the fiscal year 1995 financial statements.

### **Map Inventory**

The Geological Survey computed the value of its fiscal year 1994 year-end map inventory by computing a unit cost per map (\$.78) using the following formula: fiscal year 1994 production costs (labor, materials [primarily printing plates and paper], and overhead) divided by the total number of maps distributed in fiscal year 1993. The September 30, 1994, inventory balance was then computed by multiplying this unit cost by the estimated number of maps on hand at year-end. However, we found that the \$74.7 million balance was unreliable because it was computed incorrectly as follows: <sup>1</sup>

- Valuation Formula. The Geological Survey computed its production costs using the cost of materials purchased in fiscal year 1994 rather than the cost of materials used in production. As a result, the inventory valuation did not include materials used in production that were purchased before 1994 (likely at a lower cost), and it did include materials purchased in 1994 that had not been used by year-end. In addition, the Geological Survey computed its unit cost using the total number of maps distributed in fiscal year 1993 (6.2 million maps) rather than the number of maps produced in fiscal year 1994 (2.6 million maps).

- Historical Cost. The Geological Survey did not use historical cost data or current cost data that approximated historical cost, as required by the Statement of Federal Financial Accounting Standards Number 3, because such data were not available. Under the Geological Survey's valuation procedures, the entire inventory of maps was valued based on the calculated unit cost, even though approximately 75 million of the maps in the

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<sup>1</sup>The Geological Survey's records did not contain the information needed to determine the monetary impact of these conditions on the inventory valuation.

inventory were produced in prior years. Therefore, the value of these older maps was overstated.

- Inventory Quantities. The Geological Survey did not have an accurate estimate of the number of maps held for sale at year-end. As discussed in the section “Inventory Management” in this report, the inventory balance was not supported by a recent physical inventory and included maps that were not held for sale (for example, maps held for free distribution to other Federal or state agencies) or that were excess or obsolete.

- Inventory Categories. The Statement of Federal Financial Accounting Standards Number 3 requires a Federal entity to classify its inventory using four categories: inventory held for sale, inventory held in reserve for future sale, excess and obsolete inventory, and inventory held for repair. The Geological Survey classified its entire inventory as inventory held for sale.

## **Book Inventory**

The \$7.2 million balance included in the fiscal year 1994 financial statements for the inventory of books held for sale was inaccurate. The recorded balance was based on an inventory of 7.2 million books valued at \$1 each. Our tests indicated that while the reported number of books on hand was accurate, the Geological Survey had no historical cost data to support the \$1 valuation. In addition, it is unlikely that most of these books will be sold. For example, only about 22,000 books were sold in fiscal year 1994. Excess books were printed because the Geological Survey had not established guidelines to determine the quantity to be printed. Therefore, a substantial portion of the inventory should not be classified as inventory held for sale because this portion was excess or obsolete.

## **Recommendation**

We recommend that the Director, U.S. Geological Survey, establish valuation procedures for books and maps which ensure that the valuations are in accordance with the provisions of the Statement of Federal Financial Accounting Standards Number 3. These procedures should ensure that:

- The valuation formula for maps is based on the number of maps produced during a specific period rather than the number of maps distributed and on the materials used during the period rather than the materials purchased.

- Inventory values are established using historical costs or current costs that approximate historical costs. Valuation for the current year’s map production should reflect the current production volume divided by the cost of materials, labor, and overhead

used to generate that production. Historical valuation can be accomplished through the application of inflation indices to the current production costs to approximate the historical costs of maps produced in prior periods.

- Separate values are established and presented in the financial statements for inventory held for sale, inventory held in reserve for future sale, and inventory that is excess or obsolete.

### **U.S. Geological Survey Response and Office of Inspector General Reply**

In the August 19, 1996, response (Appendix 4) from the Director, U.S. Geological Survey (Appendix 4), the Geological Survey concurred with the recommendation. Based on the response, we consider the recommendation resolved and implemented (see Appendix 5).

**NATIONAL MAPPING DIVISION  
SITES VISITED OR CONTACTED**

Site	Location
Headquarters Office	Reston, Virginia
Regional Office	Denver, Colorado
Mapping Applications Center	Reston, Virginia
Printing Plant	Reston, Virginia
Warehouse	Denver, Colorado
Earth Science Information Center	Reston, Virginia
Earth Science Information Center	Denver, Colorado
Earth Science Information Center	Washington, D.C.
Earth Resource Observation System Data Center *	Sioux Falls, South Dakota

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\* Site contacted



**COMPARISON OF FEDERAL FINANCIAL SYSTEM  
INVENTORY DATA WITH STOCK ON HAND  
AT THE WAREHOUSE DISTRIBUTION CENTER**

<u>Item Name</u>	<u>Product ID No.</u>	<u>Total Stock Per System</u>	<u>Total Stock Per Count</u>	<u>Variance</u>
Yellowstone National Park	TWY1659	0	6,400	(6,400)
Yellowstone National Park	TWY2114	5,074	0	5,074
Emerald Bay	TCA0751	2,242	1,750	492
Mt. Whitney	TCA3299	800	1,000	(200)
Fort Polk	TLA0243	906	1,100	(194)
Pasadena	TCA1811	2,109	2,300	(191)
Van Nuys	TCA2595	443	625	(182)
Drinkwater Lake	TCA3392	1,439	1,600	(161)
Kurthwood	TLA0366	146	0	146
Kindt Reservoir	TWY1717	1,166	1,300	(134)
Sonora Pass	TCA2361	294	350	(56)
Bright Angel	TAZ0180	300	250	50
Mount Laguna	TCA1586	5,183	5,150	33
Mammoth Cave	TKY0414	0	0	0
Wheatland	TWY1601	0	0	0

**FOLLOWUP OF AUDIT REPORT  
“INVENTORY AND SALES MANAGEMENT,  
U.S. GEOLOGICAL SURVEY”  
(NO. 89-114), DATED SEPTEMBER 1989**

In September 1989, the Office of Inspector General issued the audit report entitled “Inventory and Sales Management, U.S. Geological Survey” (No. 89- 114), which contained four recommendations on inventory management. During our current review, we found that three of the four recommendations had not been fully implemented. However, as a result of our current review, the Geological Survey developed a comprehensive plan for improving its inventory management system, which, if implemented timely, should correct the deficiencies identified in our prior report.

**Recommendation 1.** Require the Distribution Center to maintain an accurate inventory of the quantity of maps and books on hand by performing annual physical counts and periodic updates of the records.

**Status:** Not implemented. In December 1993, the Geological Survey awarded a \$50,000 contract for assistance in conducting a physical inventory of maps in the Denver warehouse. This effort was a major undertaking. The Geological Survey’s inventory consisted of about 125,000 different titles. Over 90 million published maps and 7.2 million books were stored in a 5.5 acre warehouse, which was not adequately lighted and configured to allow for an efficient physical inventory. While the working stock was organized in alphabetical order in the front of the warehouse, the bulk stock was arranged randomly in stacks of up to 8 feet high, which made counting difficult. As a result of these conditions, all the funds were expended before the contractor completed the inventory.

At the time of our current review, the Geological Survey was taking actions to improve its physical inventory procedures through the use of statistical sampling to verify inventory quantities on hand. We believe that the successful and timely completion of this plan will significantly improve the accuracy of the Geological Survey’s physical inventories of maps.

**Recommendation 2.** Require the Distribution Center to formalize an inventory reduction plan for maps and books, specifying time frames and the methods to be used to accomplish the reduction. Obsolete and damaged items should be disposed of through the General Services Administration’s recycling program.

**Status:** Not implemented. During our followup review, we found that while some actions had been taken to reduce the map inventory subsequent to our prior review, excess inventory levels continued to exist because procedures had not been implemented to periodically identify and reduce excess inventories. For example, the Geological Survey had about 90 million maps in inventory and distributed about 6 million maps (about 4 million to Federal and non-Federal customers and about 2 million for free distribution) during fiscal year 1994. Based on these figures, the inventory represented approximately a 15-year supply, which was significantly higher than the Geological Survey's goal of printing a 5-year supply.

Subsequent to our current review, the Geological Survey's Inventory Management Improvement Team was implementing policies and procedures to establish maximum inventory levels and reduce and eventually eliminate excess and obsolete stock. The Geological Survey was also conducting a cost-benefit analysis to identify the most efficient method for disposing of its excess maps. We believe that these actions will effectively implement this recommendation.

**Recommendation 3.** Require the mapping centers and the Distribution Center to formalize the methods used for ordering and reordering the quantity of maps necessary to meet the products' demand and to minimize the costs of inventories.

**Status:** Not implemented. The Code of Federal Regulations (41 CFR 101-27.102) requires inventories to be replenished in accordance with the economic order quantity principle to determine the most efficient quantity to order. Factors that should be considered in reordering include historical sales, reorder points, printing costs, economic quantity determinations, storage costs, handling costs, deterioration, and obsolescence. We found, however, that the Geological Survey's procedures were not based on these requirements, in part, because the Distribution Center did not have accurate and current information on the number of maps in the inventory or sales history information on individual maps. Instead, order quantities for new, revised, and out-of-stock maps were established by the mapping centers based on an informal method of estimating a 5-year supply.

The plan being implemented subsequent to our current review by the Inventory Management Improvement Team includes the establishment of maximum order quantities based on critical product information such as sales/distribution history, print lead time, and handling time. In addition, print-on-demand capabilities will be developed, which will eventually eliminate the need for maintaining stocks of certain products. These actions, when completed, should effectively implement the recommendation.

**Recommendation 4.** Require the mapping centers and the Printing Center to establish time requirements for processing printing requests and assign adequate number of staff to meet these requirements.

**Status:** Implemented. Our followup review found that the Geological Survey had made progress in this area, reducing the turnaround time from 22 to 10 months. We believe that a 10-month turnaround time should be sufficient once the Geological Survey implements adequate ordering procedures to ensure that out-of-stock conditions do not occur and establishes print-on-demand capabilities.



# United States Department of the Interior

U.S. GEOLOGICAL SURVEY

Office of the Director  
Reston, Virginia 22092

In Reply Refer To:  
Mail Stop 105

AUG 19 1996

## MEMORANDUM

To: Robert J. Williams  
Acting Assistant Inspector General for Audits

From: **For** Gordon P. Eaton *Barbara J. Ryan*  
Director, U.S. Geological Survey

Subject: Draft Audit Report on Inventory Management and Valuation, National Mapping Division, U.S. Geological Survey (Assignment No. E-IN-GSV-006-95)

The U.S. Geological Survey (USGS) has reviewed the draft audit report and concurs with the recommendations. The USGS would like to take this opportunity to thank the Office of the Inspector General for their cooperation and assistance in developing solutions for correcting the deficiencies which were identified in the audit.

Corrective actions taken and/or planned include:

### Inventory Management

#### Recommendation 1

- Implemented the use of scales at all product handling steps to establish and verify inventory counts
- Products and product location have been bar coded to streamline product handling procedures
- Inventory management procedures and functions have been documented
- Future plan - establish procedures for maintaining a perpetual inventory and implement procedures by January 1997
- Future plan - initiate real time access to the Federal Financial System (FFS) inventory by January 1997

#### Recommendation 2

- Initiated a stock reduction plan approved by Operations Council
- Assessed over 35,000 titles since January 1, 1996
- Reduced inventory from 95 million to 81 million items
- Developed plans for the disposal of excess products
- Removed obsolete products
- Future plan - continue the assessment of all products in the warehouse and plan to complete removal of all excess products by October 1997

**Recommendation 3**

- Issued memorandum on establishing and coordinating print run sizes for products and establishing print run on demand
- Established target stock levels and reorder points for all products in the warehouse
- Significantly reduced the number of out-of-stock items in the warehouse

**Recommendation 4**

- Six Earth Science Information Centers (ESIC) have been inventoried and point-of-sale technology is now maintaining inventories at these sites
- Future plan - ESIC inventories will have an automated connection to the DORRAN with an automated interface with FFS and access to other ESIC inventories by July 1997

**Inventory Valuation****Recommendation 1**

- Captured production costs in Covalent system

**Recommendation 2**

- Established stock valuation formula (Fiscal Year 1995 costs deflated by the Gross Domestic Product back to print year multiplied by the number of units held for sale)

Questions related to implementation of recommendations maybe referred to Hedy Rossmeissl, Senior Advisor for Data and Information Delivery, National Mapping Division. The attachment reflects editorial suggestions and corrections to the draft report. The wording to be eliminated is underlined; the substitute wording is in italics.

If you have any questions regarding this response, please contact Kitty Venti, USGS audit liaison, at (703) 648-7104.

**Attachment**

[ATTACHMENT NOT INCLUDED BY OFFICE OF INSPECTOR GENERAL ]

## STATUS OF AUDIT REPORT RECOMMENDATIONS

Finding/Recommendation Reference	Status	Action Required
A.3 and B.1	Implemented	No further action is required.
A.1, A.2, and A.4	Resolved; not implemented.	No further response to the Office of Inspector General is required. The recommendations will be referred to the Assistant Secretary for Policy, Management and Budget for tracking of implementation.

**ILLEGAL OR WASTEFUL ACTIVITIES  
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