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INTEROFFICE MEMORANDUM MEMORANDUM INTERIEUR

INTERNAL AUDIT DIVISION  
OFFICE OF INTERNAL OVERSIGHT SERVICES

TO: Mr. William Lacy Swing  
A: Special Representative of the Secretary-General  
MONUC

DATE: 3 January 2007

*for William Petersen*  
FROM: Dagfinn Knutsen, Acting Director  
DE: Internal Audit Division, OIOS

REFERENCE: AUD-7-5:7 (07- 00690 )

SUBJECT: **OIOS Audit No. AP2006/620/06: Provision of drinking water in MONUC**

OBJET:

1. I am pleased to present herewith the final report on the above-mentioned audit, which was conducted during February to April 2006.

2. We note from your response to the draft report that MONUC has generally accepted the recommendations. Based on the response, we are pleased to inform you that we have closed recommendations 2, 14, 15, 16 and 17 in the OIOS recommendations database. In order for us to close out the remaining recommendations (i.e., 1, 3 to 13, and 18), we request that you provide us with additional information as indicated in the text of the report. Please refer to the recommendation number concerned to facilitate monitoring of their implementation status. OIOS is reiterating recommendations 11 and 12, and requests that you reconsider your initial response concerning these recommendations. Please note that OIOS will report on the progress made to implement its recommendations, particularly those designated as critical (i.e. recommendations 1, 3, 7, 8, 11, 12, 17 and 18), in its annual report to the General Assembly and semi-annual report to the Secretary-General.

3. The Internal Audit Division is assessing the overall quality of its audit process, and kindly requests that you consult with your managers who dealt directly with the auditors and complete the attached client satisfaction survey.

4. I take this opportunity to thank the management and staff of MONUC for the assistance and cooperation provided to the auditors in connection with this assignment.

Copy to: Mr. Jean-Marie Guéhenno, Under-Secretary-General for Peacekeeping Operations  
Mr. Philip Cooper, Director, ASD/DPKO  
Ms. Hazel Scott, Director of Administration, MONUC  
Mr. Swatantra Goolsarran, Executive Secretary, UN Board of Auditors  
Mr. Jonathan Childerley, Chief, Oversight Support Unit, Department of Management  
Mr. Mika Tapio, Programme Officer, OIOS  
Ms. Agness Chilinda, Chief Resident Auditor, MONUC

# Office of Internal Oversight Services

## Internal Audit Division



### **Audit of the Provision of Drinking Water in MONUC**

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**Audit no:** AP2006/620/06  
**Report date:** 3 January 2007  
**Audit team:** Agness Chilinda, Chief Resident Auditor  
Jennifer Pereira, Auditor-in-Charge

## EXECUTIVE SUMMARY

### Provision of drinking water in MONUC (Assignment No. AP2006/620/06)

OIOS conducted an audit of the provision of drinking water in the United Nations Organization Mission in the Democratic Republic of the Congo (MONUC) during February - April 2006. The main objectives of the audit were to obtain reasonable assurance regarding the adequacy of internal controls in ensuring: (i) efficiency and effectiveness of production, bottling and distribution operations; (ii) compliance with directives and operating standards; (iii) effective coordination between the various Sections involved in the production and distribution of water; and (iv) proper management of waste bottles.

The audit reviewed the capacity, production and distribution of water and assessed controls by reviewing records relating to the period August 2005 to January 2006. Field visits were made to Kisangani, Bunia, Bukavu and Goma to inspect the production and distribution facilities and processes.

MONUC had an investment of \$3.4 million in equipment for the treatment and bottling of drinking water. For the 2005-2006 financial year, non-staff recurring costs were budgeted at \$1.4 million.

The Mission was meeting the requirement for the provision of safe, clean and sufficient drinking water to civilian staff and military contingents and was successful in responding to sudden surges in demand for bottled water due to operational requirements or rotation of military personnel.

However, there were opportunities for improvement in the production and distribution of drinking water, as follows:

- There were no policy guidelines on the provision of drinking water and the administration of emergency reserves of bottled water;
- There were no Standard Operating Procedures (SOPs) for the distribution of bottled water. The procedures implemented by the Water Management Unit needed to be improved;
- There was a lack of needs analysis in the acquisition of equipment for water production, resulting in the purchase of excess equipment;
- There were inefficiencies in the implementation of the Memorandum of Understanding (MOU) signed with the South African Government for the Drilling Unit, thereby resulting in excessive expenditures for the drilling of nine bore wells.
- The Mission did not have a clear and long term plan on how to dispose of the plastic waste bottles.

OIOS made recommendations that include establishing policy guidelines on the provision of drinking water and emergency reserves, updating SOPs, enforcing the provisions of the MOU with the South African Government, and carrying out a cost benefit analysis of options being considered to identify the most suitable solution for the disposal of waste bottles.

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## I. INTRODUCTION

1. OIOS conducted an audit of the provision of drinking water in the United Nations Organization Mission in the Democratic Republic of the Congo (MONUC) from February to April 2006. The audit was conducted in accordance with the International Standards for the Professional Practice of Internal Auditing.
2. MONUC supplied bottled drinking water to international civilian staff, United Nations Volunteers (UNVs), UN Police, Military Observers (MilObs) and national staff at the rate of 1.5 litres per working day. Military contingents were entitled to 4.5 litres of drinking water and 80 litres for general purpose per day. Self-sustained contingents with Contingent Owned Equipment (COE) for water purification were supplied with raw water in bulk. An emergency reserve of bottled water for 14 days was stored in secure areas for contingents at the rate of 4.5 litres/day per person while reserves for 10 days for civilian staff were stored in strategic areas of the Mission.
3. The Water Management Unit (WMU) of MONUC's Engineering Section was responsible for purification of water and supply of bulk and raw water to contingents. The sources of raw water varied from sector to sector but mainly came from bore wells, lakes and the municipal supplier, Regideso. There were 20 purification plants run by the Engineering Section at 10 locations, with a production capacity ranging from 2,000 to 5,000 litres per hour. In addition, military contingents had 52 COE plants also with capacities ranging from 2,000 to 5,000 litres per hour. Filtered water from the plants was stored in bladders from which bottling plants were operated or bulk water was supplied to contingents.
4. There were four types of water treatment and bottling plants in the Mission, which were categorised by size, function and cost. Table 1 shows these categories, as well as their locations in the Mission area.

**Table 1: Categories of water treatment and bottling plants in MONUC**

<b>Category A (Cost: \$19,578)</b>	<b>Category B (Cost: \$56,793)</b>	<b>Category C (Cost: \$133,960)</b>	<b>Category D (Cost: \$217,832)</b>
Small purification plants	Medium sized purification plants	Combined treatment and bottling plants	Combined treatment, salt removal and bottling plants
Mbandaka, Bunia, Bukavu	Kisangani, Goma, Bukavu	Kinshasa, Kisangani, Goma, Bukavu	Bunia, Kindu, Kananga

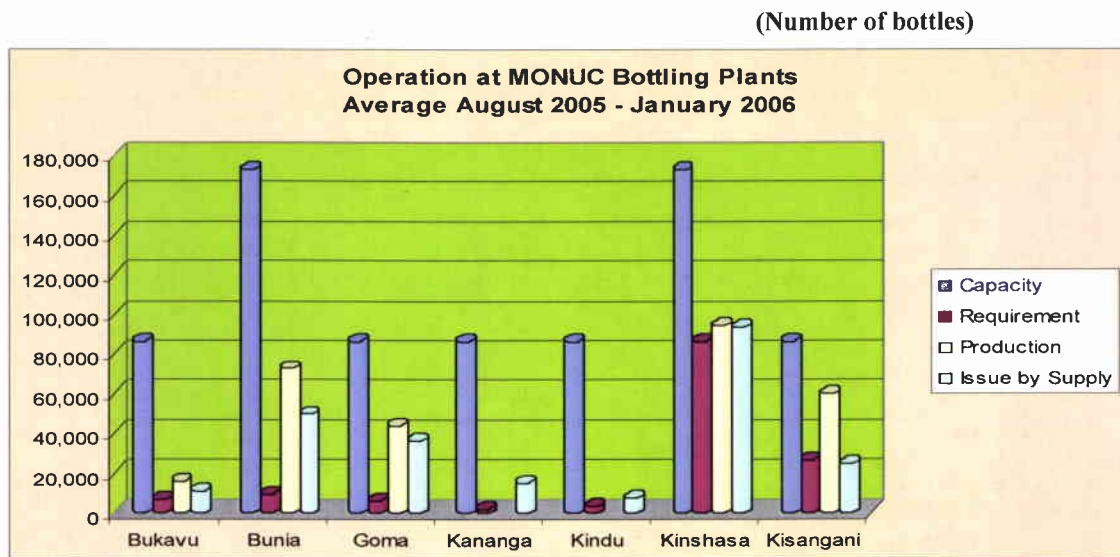
5. The total cost of non-expendable water treatment equipment as indicated by the WMU was approximately \$2 million. The non-staff recurring costs for production of water were approximately \$1.4 million per year. These included capsules (plastic pellets) for 1.5 litre bottles, termosetted polyethylene (plastic wrap) for packaging water bottles in 6-packs, labels, and consumables such as cleaning and testing materials. The cost of raw water to the Mission was not included in the estimate due to variation in its sources.

6. The Engineering Section had nine bottling plants, two each in Bunia and Kinshasa and the rest in Bukavu, Goma, Kananga, Kindu, and Kisangani. The average production capacity of the

bottling plants was between 3,600 to 4,200 bottles a day.

7. Figure 1 compares the average capacity of the bottling plants to the requirements for a 180-day period from August 2005 to January 2006 based on the number of civilian staff, military observers and staff officers in the Mission area, but excluding emergency stocks or any sudden surges in demand for special operations such as military exercises.

**Figure 1: Comparison between capacity, requirement and production of bottling plants**



8. MONUC's Supply Section was responsible for the supply and distribution of bottled water to civilian staff and military contingents. The Section was also responsible for maintaining and ensuring timely re-stocking following authorized use or expiry dates of emergency water reserves at all MONUC establishments including contingent camps.

9. The comments made by the Management of MONUC on the draft audit report have been included in the report as appropriate and are shown in italics.

## II. AUDIT OBJECTIVES

10. The major objectives of the audit were to obtain reasonable assurance regarding the adequacy and effectiveness of internal controls in ensuring:

- (i) Efficiency and effectiveness of production, bottling and distribution of water;
- (ii) Compliance with directives and operating standards;
- (iii) Effective coordination between the various sections involved in the production and distribution of water; and
- (iv) Proper disposal of waste bottles.



### **III. AUDIT SCOPE AND METHODOLOGY**

11. The audit reviewed the capacity, production and distribution of water and assessed controls by reviewing records pertaining to the period August 2005 to January 2006. The audit also covered distribution of water to civilian and military personnel, storage of emergency reserve water and disposal of waste bottles. The audit methodology comprised: (a) review of policies, procedures, administrative guidelines, standard operating procedures and databases/ spreadsheets used for monitoring water production and distribution; (b) interviews with responsible personnel; (c) physical verification, assessment of risks and effectiveness of controls in Kisangani, Bunia, Bukavu and Goma; and (d) observation and verification of processes, as appropriate.

### **IV. AUDIT FINDINGS AND RECOMMENDATIONS**

#### **A. Lack of clear policy guidelines**

12. The Mission's first water bottling plant became operational in Kinshasa in December 2001, prior to which water was purchased for office use. The first policy guideline with a limited scope was issued in April 2004 only to Kinshasa staff, and it was intended to provide a minimum level of water reserves without compromising the provision of purified water to all users. The circular also envisaged the provision of bulk water to military contingents from which 1.5 litre bottles of water would be produced. A second circular increased the entitlement of staff assigned to airports from one bottle to two, while a third circular restricted the use of bottled water to work premises.

13. Supply Section staff in the Sectors and the Rations/Water Unit in Kinshasa explained that there were no clear administrative guidelines or policies for the distribution of drinking water. Currently, guidelines are required in the following areas:

- Provision of drinking water to military contingents. Military contingents were entitled to 4.5 litres of drinking water a day. The water was to be provided in bulk with each contingent expected to use their personal canteens for their daily consumption. However, following the circular of 10 April 2004, there was no consistency in the issuance of drinking water to military contingents. In Kisangani and Kinshasa, military contingents were issued one bottle of water a day and three litres in bulk, while in other sectors they received their provision only in bulk.
- Provision of drinking water to casual daily workers. These workers did not receive drinking water (except those working at airports and outdoors), even though they worked in MONUC premises.

15. Draft guidelines had been prepared but were yet to be finalized and issued at the time of the audit. Guidelines are important to ensure clarity in entitlements, and the applicable conditions for the supply of drinking water.

## **Recommendation 1**

The MONUC Administration should finalize and issue policy guidelines on the provision of drinking water to the various categories of personnel in the Mission (AP2006/620/06/01).

16. *The MONUC Administration accepted recommendation 1 and stated that it would be implemented by March 2007.* Recommendation 1 remains open pending receipt of documentation from MONUC showing that it has been implemented.

### **B. Need for updated standard operating procedures**

#### Water purification

17. The WMU issued standard operating procedures (SOPs) for the purification (production) of water in the Mission. SOPs for production of water were available in all the sectors visited, however, their implementation varied considerably from one sector to the other.

18. Most of the sectors visited developed their own systems for recording, reporting and handing over water produced to the Supply Section due to lack of clarity and specific requirements in the SOPs. Some systems were more effective than others, as illustrated below:

- In Bunia, the water plant created task orders for production of bottled water based on requisitions raised by the Supply Section. Therefore, the Supply Section was responsible for projecting short and long term bottled water requirements. None of the other sectors followed a similar process except for special requests when large quantities were required for contingent emergency stock.
- In Bukavu, water was produced and stored in containers, and daily production records maintained at the site. The records were then taken to the concerned official in the Supply Section once a week for signature. This process documented the hand-over to the Supply Section without any verification of the actual quantities.
- In Kinshasa, due to the Supply Section's proximity with the plant site, daily production was handed over to the Supply Section immediately after production, whereas in Kisangani, Bunia, and Goma, the water plants maintained the reserve stock in containers until it was issued to the Supply Section.

19. Item 3.0 of the SOPs on Plant Operation Procedures did not specify the records to be maintained or reporting requirements to the WMU in Kinshasa. The SOP for Maintenance and Stock required records to be maintained but there was no requirement to send the records to the WMU in Kinshasa. Some records were being sent to Kinshasa but there was no consistency in the reports sent. OIOS reviewed the reports for the period August 2005 to January 2006 for eight locations where MONUC water plants were operational and noted the following:

- a) Laboratory reports were available for all locations although microbiological



testing reports for Goma were unavailable;

- b) Maintenance reports for Bukavu, Goma and Kindu were missing;
- c) Production log sheets were missing for Bunia, Bukavu and Goma; and
- d) The monthly stock balance sheets for all sectors did not accurately link the number of capsules used to the quantities of bottles produced per month. Maintenance of this record would have increased the controls over production and reduced the risk of misuse.

20. The WMU in Kinshasa did not consolidate the reports received from the Sectors for comparative analyses and monitoring. Furthermore, different formats of reports were kept by the Sectors. The Kisangani and Bukavu Water Units used Excel spreadsheets to record production data, whereas the Kinshasa and Bunia Water Units used Word. The Goma Water Unit did not consistently keep computer records but instead kept a manual register.

21. Unclear and insufficient guidelines in the SOPs concerning the benchmarks for water production, records to be maintained, reporting requirements and format of reporting led to divergent practices and contributed to weaknesses in monitoring the production of water.

### **Recommendation 2**

The MONUC Administration should ensure that the Water Management Engineer updates the standard operating procedures for the purification of water to include benchmarks for production quantities, records to be kept, and reporting requirements (AP2006/620/06/02).

22. *The MONUC Administration accepted recommendation 2 and stated that it has been implemented. The Mission also provided a copy of the updated SOP. Based on the action taken by MONUC, recommendation 2 has been closed.*

### Water distribution

23. There were no SOPs governing the distribution of bottled water to civilian staff, police, military observers, UN Volunteers, local staff and contingents. However, the Officers In Charge (OICs) of Supply adapted MONUC SOPs for Supply. These SOPs were not comprehensive and were not consistently applied.

24. The various stages of the bottled water distribution process include receipt of water from water plants, storage of reserve and emergency stocks, supply to civilians and military, and recording of receipts and issued stocks. In Kinshasa, the Rations Unit distributes water whereas the General Supply Units are responsible for water distribution in the Sectors. The Supply SOPs required information on available water stocks to be included in the weekly and monthly reports sent to the Supply Section in Kinshasa. The SOPs, however, did not specify the requirement for reports to include quantities of water and emergency stocks that have been issued.

25. Furthermore, the system for recording distribution information differed between the Sectors and Kinshasa. Sectors recorded quantities of bottled water issued in Galileo (the asset control application introduced in September 2005), whereas Kinshasa continued to record the information in Excel. A comparison of the weekly reports sent to Kinshasa by the Sectors and those extracted from Business Objects (Galileo report generator) for the four months from September to December 2005 for Bukavu, Bunia, Goma and Kisangani showed considerable differences (see Table 2). The two sets of reports were not reconciled to identify sources of errors and corrective action to be taken.

**Table 2: Issued Bottled Water in four Sectors from September to December 2005**

<b>Sector</b>	<b>Consolidated from Weekly report (bottles)</b>	<b>Extracted from Business Objects (bottles)</b>	<b>Difference</b>
Bukavu	46,725	122,343	75,618
Bunia	213,935	217,417	3,482
Goma	132,521	86,481	(-) 46,040
Kisangani	71,201	77283	6,082
			<b>85,182</b>

26. With the overall responsibility for distribution of bottled water split between two units (Rations and General Supply), and the absence of a central monitoring system, it is unclear how Management can accurately determine and monitor the quantities of bottled water distributed in the Mission.

27. SOPs are important to ensure that the Units responsible for the supply of water perform their operations in an efficient, effective and consistent manner to reduce waste of resources and safeguard the Mission's assets. SOPs ensure uniform reporting requirements, and facilitate planning and monitoring of operations. Furthermore, the use of technology such as Galileo improves efficiency and effectiveness of operations.

### **Recommendations 3 to 6**

The MONUC Administration should ensure that:

(a) The Chief, Supply Section prepares SOPs for the distribution of drinking water in the Mission to ensure efficiency of operations and consistency in recording and reporting requirements. The SOPs should be harmonized with the SOPs for water production so that the production and distribution of water is based on planned projections of Mission requirements (AP2006/620/06/03);

(b) The Chief, Rations/Water Unit uses the Galileo system for recording the quantities of water issued at all of the Sectors and in Kinshasa and uses the system for monitoring the distribution of

water (AP2006/620/04);

(c) The Chief, Supply Section creates reporting templates in Galileo and includes a requirement in the SOPs that all reports should be prepared in the prescribed templates (AP2006/620/06/05); and

(d) The Chief, Rations/Water Unit reconciles the discrepancies between the weekly reports and reports generated in Galileo for corrective action (AP2006/620/06/06).

28. *The MONUC Administration accepted recommendations 3, 4, 5 and 6 and indicated that the Mission has already initiated steps to implement these recommendations. The target date for full implementation is 31 December 2006.* Recommendations 3, 4, 5 and 6 remain open pending receipt of documentation from MONUC showing that they have been fully implemented.

#### Administration of emergency water reserves

29. The Mission was required to stock adequate reserves of bottled water to be used for emergencies. The emergency reserves of water were established at 4.5 litres per day per person for 14 days for military contingents and 10 days for civilian staff. Consumption of reserve water is subject to proper authorization. During military operations and exercises, contingents are allowed to take bottled water from their emergency reserves with authorization from the Divisional Commander. The Director of Administration (DOA) authorizes the use of water from the civilian emergency reserves.

30. Contingents are responsible for storing their emergency stocks in secure areas and ensuring that they are protected from inclement weather. Emergency stocks for civilians are stored throughout the Mission to ensure ease of access during an emergency. Bottled water has a lifespan of one year and due to the long-term storage requirement for emergency stocks, a stock rotation system is in place to ensure that stocks do not expire. Contingents are expected to return unused stocks at least three months before the expiration date in exchange for new stocks.

31. There were weaknesses in the administration of emergency water stocks in some of the Sectors visited. Some contingents were consuming the emergency stocks when there was no emergency and in some cases, the water was neither properly stored nor rotated. For instance:

- The Senegalese contingent in Kisangani, the South African contingent in Lubumbashi, and the South African contingent in Beni were consuming their emergency stocks when there was no emergency. During the audit in March 2006, the Senegalese contingent had emergency water stocks to last only four days.
- In Bunia, the Pakistani Contingent had 9,781 bottles in emergency stock instead of 35,994 required. The contingent was not clear about the procedures for replenishing stocks used for operations and requested that procedural guidelines

be issued.

- In Goma, one of the Indian Contingent's storage facilities was found to be in a poor state with bottles removed from their packs and thrown haphazardly in a dirty room. Bottles looked damaged and the labels were discoloured (see Picture 1). It was not possible to determine whether the bottled water had expired, and it was evident that a good quantity would have to be destroyed. The Indian Contingent rotated their water at the Supply warehouse with packs that had already expired.

**Picture 1: Storage of Emergency Supply at the Indian Contingent**



- In Kisangani, one container at the Division HQ of approximately 1,500 packs was located in the open, awaiting the completion of a long-term storage facility. At another location within the Division HQ, emergency and regular stocks were placed in the same room, risking the possibility of issuing the emergency stocks for regular use.
- In Bukavu, emergency supplies were maintained in the same container from where the regular supplies of bottled water were issued. Although there were 10,025 bottles in stock for emergency use during the audit in March 2006, a review of the weekly reports indicated that there were periods when the stock fell below the required amount of 7,065 bottles for the 157 personnel in Bukavu. Furthermore, the contingents were asked to consume the stock that was due to expire and request replenishment, rather than return the bottles to Supply for rotation. As the contingents were receiving bulk water for drinking purposes, the availability of surplus bottles raised the risk of abuse or sale in the local market. In Bukavu, some contingents had allegedly been selling bottled water in the market, and MONUC Security had investigated the incidents and submitted reports to the DOA. During the visits to the Sectors, OIOS found MONUC bottled water being sold in kiosks outside the Simi-Simi camp, Kisangani (see Picture 2).

**Picture 2: Bottled water being sold outside Simi Simi camp, Kisangani**



32. The lack of adequate controls in managing the emergency reserves was attributed to insufficient guidelines and lack of knowledge of procedures for replenishment of stocks by some contingents. This situation increases the risk of not having sufficient stocks of water in case of an emergency, which could jeopardize the Mission's operations.

#### **Recommendations 7 to 10**

The MONUC Administration should:

- (a) Issue an Administrative Circular explaining the policy concerning the maintenance of emergency stock of water and its replenishment (AP2006/620/06/07);
- (b) Ensure that the Chief, Supply Section formalizes SOPs for the administration of Emergency Water Reserves, including guidelines for their storage (AP2006/620/06/08); and
- (c) Ensure that the Water Management Unit introduces a common date stamp for labelling expiry dates on the water bottles to facilitate rotation of water, especially emergency reserves that are normally kept in stock for longer periods than daily consumption stocks (AP2006/620/06/09).
- (d) Take appropriate measures to prevent the accumulation of surplus stocks of bottled water with contingents and their sale in the local markets (AP2006/620/06/10).

33. *The MONUC Administration accepted recommendation 7 and stated that the Mission will issue an administrative circular to address the minimum storage requirements, use of emergency*



*water holdings and the replenishment of bottled water before expiry.*

34. *The MONUC Administration accepted recommendation 8 and stated that detailed instructions on the administration and storage of reserve stock will be incorporated into the draft rations SOP issued in May 2006.*

35. *The MONUC Administration accepted recommendation 9 and stated that all packets are manually date-stamped (using permanent markers) at each production location, involving the employment of nine casual workers. However, the Mission will implement the recommendation by June 2007, allowing six to eight months for procuring the necessary date-stamping equipment.*

36. *The MONUC Administration also accepted recommendation 10 and stated that an inspection template and schedule is being developed and will be included in the revision to the rations SOP in January 2007.*

37. Recommendations 7, 8, 9 and 10 remain open pending receipt of documentation from MONUC showing that they have been fully implemented.

### **C. Need for improved needs analysis and asset management**

38. Six water intake plants manufactured by Odis were purchased through the Procurement Service, New York at a cost of \$59,820 and arrived in the Mission in June 2002. However, these have never been used and continued to remain in unit stock.

39. In February 2004, ten water treatment plants were purchased through a systems contract with Alfred Karcher GmbH at a total cost of €614,350 (approximately \$750,000). Requisition No. KBS3-100295 dated 11 July 2003 was prepared in MONUC but the purchase orders were split with five plants purchased through the Procurement Service, New York and five through the MONUC Procurement Section. These water treatment plants were purchased despite having six other plants in stock at the time, and no written justification was available for the purchase. MONUC did not carry out a needs analysis to determine the Mission's requirements before purchasing the treatment and water in-take plants. A review of the correspondence attached to the requisition for the water treatment plants showed that the plants were purchased in order to utilize the funds before the end of the financial year. In OIOS' opinion, the Mission needs to inquire into the circumstances in which there was failure to prepare an appropriate justification for the purchase of water treatment plants and address accountability for the unnecessary purchase.

40. The DOA wrote to the Engineering Section of the Office of Mission Support in the Department of Peacekeeping Operations (DPKO) on 23 March 2006 requesting advice on disposal of these assets, and response was awaited at the time of audit.

41. An examination of assets recorded in Galileo showed that the Mission had the following water production and distribution assets totalling \$3,401,324:



Water treatment and bottling plants	-	\$2,036,682 (including unused plants in storage)
Storage facilities	-	\$1,187,996
Miscellaneous equipment	-	\$ 176,645
<b>Total</b>		<b>\$3,401,324</b>

42. Records in Galileo also showed that the Mission had a total of 57 water purification and bottling plants. Of these, only 20 or 35 per cent were shown to be “In Use”, another 35 per cent were “Pending Write Off” and 30 per cent (17) were in “Unit Stock”. Details in Galileo differed from the records maintained by the Water Management Engineer (WME), and from the actual situation on the ground. For example:

- i) The WME indicated he had 32 water treatment plants in use and in stock throughout the Mission, whereas Galileo indicated 20 in use and 17 in Unit Stock;
- ii) There were nine bottling plants throughout the Mission area, but Galileo records showed only six.

43. Lack of needs analysis and forecasting led to the purchase of excess water treatment equipment, thereby tying up resources in unnecessary assets. Management did not reconcile the records in the Galileo system with the assets actually held by the WMU, leading to the discrepancies remaining unresolved.

#### **Recommendations 11 to 14**

The MONUC Administration should:

- (a) Ensure that all future acquisitions, including those under systems contracts, are based on a documented record fully justifying their need, after taking into account the assets already held in stock (AP2006/620/06/11);
- (b) Inquire into the circumstances under which unneeded water production/treatment equipment was procured and address accountability for the unnecessary procurement (AP2006/620/06/12);
- (c) Follow up with DPKO on the request for advice regarding the disposal of excess water treatment assets held in stock (AP2006/620/06/13); and
- (d) Ensure that the Chief Engineer reconciles the asset records of water production/treatment equipment in Galileo with those maintained within the Water Management Unit and accounts for all discrepancies (AP2006/620/06/14).

44. *The MONUC Administration did not accept recommendations 11 and 12, stating that all*

*acquisition in MONUC is already based on full justification carried out through the budgetary process. MONUC has so far acquired 33 water treatment plants, of which 21 had been installed, and the remaining 12 are on stand-by, including the 10 purchased from Alfred Karcher GmbH in February 2004 which were meant for treating river water. Under current conditions, since there is no need for treating river water, these 10 units are being held in reserve. Water and electrical equipment generally have a 50 per cent reserve, hence these plants are not excessive. OIOS is unable to accept these explanations because: (a) the mere inclusion of a requirement in the budget, without adequate justification in writing, cannot be considered as a substitute for a needs assessment; (b) procurement of items budgeted for should be based on a written justification of their need, rather than the mere availability of funds; and (c) the fact that the plants for treating river water were procured without justification of their need, and MONUC subsequently sought DPKO's advice on their disposal on grounds that the plants were not needed, indicates that their purchase at a cost of approximately \$750,000 was unnecessary. Furthermore, OIOS found that as of 15 December 2006, nine of the ten river water treatment plants were still in stock, and that only six locations used such plants. Assuming that a 50 per cent reserve has to be held in stock, only three plants should have been procured, instead of ten. OIOS therefore reiterates recommendations 11 (which has been modified as above, based on the Mission's response) and 12, and these recommendations remain open pending receipt of documentation from MONUC showing that they have been implemented.*

45. *The MONUC Administration accepted recommendation 13 and stated that there was informal advice from DPKO to all missions regarding certain types of water treatment equipment. Recommendation 13 remains open pending receipt of documentation from MONUC showing that the excess water treatment assets held in stock have been disposed of.*

46. *The MONUC Administration accepted recommendation 14 and stated that the discrepancies had been reconciled. OIOS has confirmed that the recommendation has been implemented. Accordingly, recommendation 14 has been closed.*

#### **D. Payments to a Troop Contributing Country (TCC) for Drilling Unit**

47. According to the Memorandum of Understanding (MOU) signed between the United Nations and the Government of the Republic of South Africa (RSA), the RSA was to provide 16 troops and one drill rig vehicle for drilling bore wells within the Mission area. The MOU was signed on 15 April 2003 and came into effect in May 2003 with the arrival of the troops. The monthly cost to the Mission for this Unit is \$28,763, which includes:

- (i) Reimbursement for Drill Rig and accessories - drill rig, equipment and raw material containers and truck utilities;
- (ii) Reimbursement for self-sustainment of Rig operators - Self-sustainment cost to the 16 contingent members @ \$356.64 per contingent member; and
- (iii) Troop cost @ \$1,028 per month per contingent member, and other allowances.

48. A water survey conducted in MONUC in May 2002 estimated that up to 30 bore wells were required especially for Kindu and the Eastern Sectors. In 2003, a total of five bore wells were sunk by the RSA Unit and in 2004, three more wells were sunk. The major cause for the

delays in drilling the bore wells were attributed to frequent breakdown of the drilling rigs which the contingent took long to repair due to unavailability of spares.

49. An analysis of the verification reports prepared by the COE Unit in Kinshasa showed that unserviceability of the drill rigs was due to recurring breakdown of the same parts. However, Annex D of the MOU between the RSA government and the United Nations states under Principle: 2 (d) “To meet serviceability standards, contingents have the option to maintain an additional 10% of the MOU authorized quantities of major equipment to be deployed and redeployed with the contingent. The United Nations will be responsible for the associated deployment and redeployment as well as painting/repainting costs. However, a troop contributor will not receive wet or dry lease reimbursement for overstocks.” This provision in the MOU was not utilized by the contingent to stock the necessary spare parts in theatre. The Mission did not enforce the provision in the MOU, and failure to take advantage of this provision exacerbated the delays in repairing the drill rigs. As a result of the delays in drilling bore wells, the Mission has had to provide contingents with water purchased from the local market due to the high cost of transporting bottled water from the nearest MONUC plants.

50. According to Article 6, Section 6.3 of the MOU, “The United Nations shall reimburse the Government for the provision of self-sustainment goods and services at the rates and levels stated at Annex C. The reimbursement rates for the self-sustainment shall be reduced accordingly in the event that the contingent does not meet the required performance standards set out in Annex E, or in the event that the level of self-sustainment is reduced”. Despite the RSA Drilling Unit drilling only nine (9) out of estimated thirty (30) bore wells during the period from May 2003 to March 2006, there was no reduction in self-sustainment payments made to the TCC for failing to meet the performance standards.

51. The TCC received monthly self-sustainment payments of \$27,143.33 for the Drilling Unit because the troops were present in the Mission area even when the rig was not operational. The total amount paid to the TCC from May 2003 to March 2006 amounted to \$982,957. However, an amount of \$23,872 was recommended to the Finance Management and Support Service (FMSS) of DPKO for deduction due to unserviceability of rigs for 14.66 months between the period from February 2004 to December 2005, as shown in Table 3.

**Table 3: Payments to TCC for Drilling Team**

Year of Self-sustainment	Months	Monthly payment for drilling unit	Down Time (months)	Amount withheld	Total amount paid
2003	8	230,104			230,104
2004	12	345,156	8	12,959	332,197
2005	12	345,156	6.66	10,789	334,367
2006	3	86,289			86,289
Total					982,957

52. With this arrangement, it has cost the United Nations on average \$109,217 per bore well, which appears to be exorbitant. Due to urgent operational requirements and the non-performance of the RSA Unit, MONUC sought alternative arrangements and entered into a

contract with a local drilling company for drilling a bore well in Lubumbashi. The cost for this well was estimated at \$38,200. However, even though the procurement process was initiated in November 2005, drilling had not commenced at the time of audit.

53. Failure to enforce the provisions of the MOU has resulted in MONUC incurring excessive expenditures for drilling services, operational requirements not being met, and further expenditures likely to be incurred for the procurement of drilling services.

#### **Recommendation 15**

The MONUC Administration should enforce the provisions of the MOU by requiring that the Troop Contributing Country brings an adequate supply of spares in theatre to minimize the down time of the drill rig (AP2006/620/06/15).

54. *The MONUC Administration accepted recommendation 15 and stated that it had been implemented. DPKO had been advised of the non-performance of the RSA drilling team, and the team was being repatriated.* Based on the Mission's response, recommendation 15 has been closed.

#### **E. Self-sustained contingents drawing MONUC bulk purified water**

55. MONUC is required to provide 4.5 litres of drinking and 80 litres of general purpose water per person per day to contingents who are not self-sustained. These contingents are required to collect bulk water from the Mission's water treatment plants in water bowsers or water trucks. Self-sustained Contingent Units that received reimbursement for water treatment plants collected raw water from MONUC water plants when a direct source was not available.

56. OIOS inspected Contingent-owned equipment (COE) water plants in the Sectors to determine whether they operated efficiently and met the contingents' needs. The inspection found that some of the plants in Bukavu were not operational.

- The water pump at the Indian Contingent Camp was temporarily out of order, and the MONUC Engineer had put in a request for spares from Kinshasa. The Contingent was collecting water from the MONUC water plants and their reimbursements were recommended for adjustment.
- The Pakistani COE plant at the Brigade house had algae in the filters, the ultra-violet (UV) station had not been connected, and the water cooler which was the collection point for the purified water was not connected and showed no signs of recent use.
- The second Pakistani COE plant at Adikivu had algae in the pipe connecting the plant to the overhead tank. The MONUC plant technician confirmed that he was supplying water to the overhead tank.

- The third Pakistani COE plant at Panzi had broken down, and there were conflicting reports on how long the plant was not operational. The attending officer informed OIOS that one plant was in storage and would immediately be taken out to replace the broken plant.
- In Panzi, another Pakistani COE plant connected to the camp kitchen was also not in use. There was a water bowser filling the overhead tank at the time of OIOS' inspection. The MONUC engineer checked the UV station which had its light on, indicating it was in use, but he confirmed that it was not properly connected.

57. A report from the COE Inspector in Bukavu stated that all the Pakistani COE water treatment plants were in use and fully operational, indicating that the plants should have been used by the contingents to meet their water needs. However, a review of the daily logsheets for the period from August 2005 to February 2006 showed that the Pakistani contingents had been collecting purified water from the two MONUC water plants in Bukavu (see Table 4).

**Table 4: Purified water collected from MONUC Water Plants by Self-Sustained battalions**

	<b>Adi-Kivu Plant Airport Contingent collections</b>	<b>Peninsula Plant Panzi, Brgd House &amp; Tobacco Factory Contingent collections</b>
Average collected per month ( August 2005 to February 2006)	551,757 litres	355,714 litres
Strength at camps (30 January 2006)	226	524
Average per day	18,391 litres	11,857 litres
Average per person	81 litres	23 litres
Entitlement per person per day for drinking water	4.5 litres	4.5 litres
Entitlement per person per day for general use water	80 litres	80 litres

58. The TCC was receiving self-sustainment reimbursements and at the same time collecting MONUC purified water, contrary to the provisions of the MOU signed with the TCC. The TCC was reimbursed at a rate of \$9,755 per month (\$812.95 per unit) for the twelve plants used by its contingents in Bukavu.

59. Failure to adhere to the terms of the MOU resulted in MONUC incurring losses of \$9,755 per month through payments of self-sustainment, while at the same time providing drinking water to the contingents.

#### **Recommendations 16 and 17**

The MONUC Administration should ensure that the COE Unit:

- (a) Conducts a thorough inspection of the COE Water Treatment Plants, in coordination with the Water Plant Engineer,



in all sectors to verify that the plants are operational (AP2006/620/06/16); and

(b) Initiates the process of adjusting the reimbursement to TCCs for all self-sustaining contingents drawing purified water from the Mission (AP2006/620/06/17).

60. *The MONUC Administration accepted recommendation 16 and stated that COE water treatment plants were inspected and more than 20 plants were identified as not operational. The monthly payment for non-operational plants has been stopped. The MONUC Administration also accepted recommendation 17 and explained that TCCs drawing purified water from the Mission are reported in the verification report, which is the basis for TCC reimbursements. Based on the Mission's response, recommendations 16 and 17 have been closed.*

#### **F. Disposal of waste bottles**

61. The Mission generated approximately 300,000 disposable plastic bottles each month from the distribution of drinking water to its personnel. This worked out to approximately 3.6 million plastic bottles annually. The decision to provide water using plastic bottles did not take into consideration the need for a long term solution for disposal of plastic waste. MONUC has engaged a contractor to collect and dispose of garbage, including the plastic bottles. The Mission, however, is concerned about the environmental impact and is considering proposals to address the problem, as follows:

- The first option involves collecting the empty bottles in a central location and engaging a contractor to remove and dispose of the bottles in an appropriate manner. In this regard, the Procurement Section was requested to advertise for "Expression of Interest" in the local papers in February 2006 to ascertain the interest of local contractors in collecting the empty bottles. Only one bidder responded, and the Procurement Section requested the Chief, Supply to prepare the scope of work so that they could proceed with the bidding process.
- The second option involves the purchase of a few mobile plastic chippers costing approximately \$17,000 each to be transported to the different locations where bottling plants would continue to operate. The proposal was still in its infancy, and it is unclear how the plastic chips would be disposed of.

62. Other options being considered involve changing the delivery methodology as follows:

- The first option proposes a change in the delivery of water to staff by suspending the supply of bottled water for working hours to civilians who would then collect their water in cans of 5, 10 and 20 litres.
- The second option proposes the purchase of UV purification equipment to be installed in all MONUC offices. This would entail abandoning the existing water purification infrastructure and embarking on a different system entailing additional



investment.

63. In August 2003, the Mission had purchased water dispensers for its Kinshasa offices but they were never used. The dispensers were subsequently shipped to the United Nations Operation in Burundi (ONUB), where they are reportedly being used.

64. OIOS is concerned that so far the Mission has not carried out any cost benefit analysis for the options being considered above. There is a risk that the Mission may not select a cost effective and efficient option and may incur additional expenses over and above the \$3.4 million already invested in the water treatment and distribution facilities.


### **Recommendation 18**

The MONUC Administration should conduct a cost-benefit analysis of the various options being considered for water supply management and select a cost effective and efficient option, taking into consideration the investments already made in establishing water treatment facilities in the Mission (AP2006/620/06/18).

65. *The MONUC Administration accepted recommendation 18 and stated that the Engineering Section will prepare a cost-benefit analysis for viable options.* Recommendation 18 remains open pending receipt of documentation from MONUC showing that it has been implemented.

### **V. ACKNOWLEDGEMENT**

66. We wish to express our appreciation to the Management and staff of MONUC for the assistance and cooperation extended to the auditors during this assignment.

  
for  
Dagfinn Knutsen, Acting Director  
Internal Audit Division, OIOS

UNITED NATIONS



OIOS Client Satisfaction Survey

Audit of: Provision of drinking water in MONUC

(AP2006/620/06)

	1	2	3	4	5
<b>By checking the appropriate box, please rate:</b>	Very Poor	Poor	Satisfactory	Good	Excellent
1. The extent to which the audit addressed your concerns as a manager.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. The audit staff's understanding of your operations and objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Professionalism of the audit staff (demeanour, communication and responsiveness).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. The quality of the Audit Report in terms of:					
• Accuracy and validity of findings and conclusions;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Clarity and conciseness;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Balance and objectivity;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Timeliness.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. The extent to which the audit recommendations were appropriate and helpful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. The extent to which the auditors considered your comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Your overall satisfaction with the conduct of the audit and its results.</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please add any further comments you may have on the audit process to let us know what we are doing well and what can be improved.

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