

# Environmental Compliance Audit Report

---

Project Number: 41456-033  
June 2012

## MFF 0054-VIE: Water Sector Investment Program – Tranche 2

This environmental compliance audit report is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature. Your attention is directed to the "terms of use" section of this website.

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

## Checklist Environmental Compliance Audit Report - Present day operations only

### PFR2 – MFF0054-VIE Water Sector Investment Program – Hai Phong Subproject

**Name and Type of facility :** An Duong Water Treatment Plant (WTP)

**Name Owner/Operator :** Hai Phong Water Supply Company One Member Limited (HPWSC)

**Location:** Hai Phong, Viet Nam

**Age of WTP:** 11 years

#### **Project Approval:**

Decision 893/TTg, dated 27/11/1996, from Prime Minister on investing in An Duong WTP for 100,000 cmd and assigning the project to HPWSC (Project Owner).

Decision 2681/QD-MTg, dated 14/11/1996, from Ministry Of Natural Resources and Environment on approving the EMP for An Duong WTP for 100,000 cmd

Decision 329/BXD/VPTD, dated 18/7/97, from Ministry of Construction on approving the detailed design for An Duong WTP 100,000 cmd

Date of commissioning : February to May 2001

**Capacity of WTP:** 100,000 cmd, uprated to 130,000 cmd

**Population serviced:** 130,000 HH (5 persons / HH)

No.	Item	Yes	No	Remarks
<b>Water use information</b>				
	Water Supply Source/s - Surface water	X		
	Estimated Average Volume treated			100,000 cmd
	Water quality of river water for raw water intake monitored. (QCVN 08:2008/BTNMT on National technical regulation on surface water quality)	X		External: Provincial Centre Health & Preventive Medicine: 1/month Internal: 1/month Meets A2 standards for water quality
<b>Compliance with applicable GOV laws and drinking water standards</b>				
	DRINKING WATER STANDARD QCVN 01:2009/BYT	X		Measured at the exit of the WTP. Refer to Water Safety Plan (WHO)
	License to use raw water Decree No. 149/2004/NĐ-CP dated 27/07/2004 on regulation of licensing to invest, exploit, use water	X		Contract issued by Hai Phong PPC every year (2012 contract copy in file) to abstract 100,000 cmd, with monthly payment to

	resource, discharge wastewater in water source.			Irrigation Company
	Decree No. 59/2007/NĐ-CP dated 09/04/2007 on solid waste management.	X		Solid waste collected by the Hai Phong URENCO
	QCVN 08:2008/BTNMT: national regulation on surface water quality			N/A Applicable to Department of Agriculture and Rural Development and Irrigation Company, not the water company
	QCVN 26:2010/BTNMT: national technical standard for noise	X		No complains were recorded and registered with the customer service department located at the head office of the water company.
	Decree 110/2002/ND-CP, supplementing some articles of Decree 06/1995 on labour code of occupational safety and health			HPWSC follows OHAS Joint Circular between Ministry of Health and Ministry of Labour, Invalids and Social Affairs Training OHAS: 200 staff per year (20% workforce) Monthly safety audits performed by 80 certified trainers from HPWSC (trained by DOLISA).. External audit by DOLISA: 2/year No Loss Time Injury (recorded) for over 5 years
	ISO Certification	X		ISO9001:2000 in 2004 Recertified in 2010 to ISO9001:2008
	Water Safety Plan (WHO)	X		Initial training (awareness) on methodology by WHO, moving to Phase 2: Definition of additional monitoring and additional chlorine injection points on the network. This activity is monitored under PFR2.  Support by Kitakyushu City Waterworks
<b>Permits and licence/s to operate</b>				
	Availability of GOV issued permits and / or licenses pertaining to the WTP operation and Compliance with enforcement conditions if any.	X		HPWSC received its first business license in 2007 with latest revision in 2011 for the overall water supply in Hai Phong
<b>Water quality monitoring</b>				

	Treated water quality sampling carried out regularly (during different periods of operations including during peak operation in the day).	X		External: -Provincial Centre for Health Preventative Medicine: 1/month  Internal: 1/day (some parameters 1/week or 1/month, as per regulations)
	Records maintained of past water quality monitoring reports	X		10 years record keeping at water company HQ
<b>Sludge management</b>				
	Sludge disposal adequately carried in compliance GOV regulations Sludge mass balance maintained (Volume generated, volume disposed and volume reused (if known))	X		Sludge drying beds, including one area trying vacuum technology Dried Sludge disposed into the city landfill with the solid waste
<b>Consumer and public satisfaction</b>				
	Registration of complaints due to noise, / odour or other environmental aspects from surrounding community	X		Customer Services Relations Department records complains: No complains received  Additional surveys carried out as part of Social Assessment
	Record maintained of response to community complaints and grievances	X		For water users, stored in the water company HQ (no complains registered for An Duong WTP)

**Findings:** The field visit shows an excellent operation and maintenance of the WTP in a high density urban area with proper buffer zone inside the WTP.

Chemicals used at the WTP: PAC, Lime, Gas Chlorine. Properly stored and people trained for use, including safety equipment and signage (refer to photos). The chlorination facilities are under maintenance but look old.

Sludge management facilities in place with drying beds and one area using pilot vacuum technology, prior to dispose the dried sludge to the city landfill

No complains were recorded in 2012 (did not check previous years) on the An Duong WTP. The site visit did not highlight any specific noise and odour beyond the higher than usual ambient noise outside the WTP (high density urban area).

Raw water quality data: In accordance with A2 standards of the QCVN 08:2008/BTNMT on National technical regulation on surface water quality:

Internal monitoring: Copy enclosed in file for 2011 and 2012 to May (Ref. 10c)

External monitoring: Copy enclosed in file for September 2011 (Ref. 10d)

Treated water quality measured at the WTP: In accordance with QCVN 01:2009/BYT on standards for drinking water supply (there is another standard for rural water supply, called domestic water supply)

Internal monitoring: Copy enclosed in file for 2011 and 2012 to May (Ref. 10b)

External monitoring: Copy enclosed in file, dated 31 August 2011 (Ref. 10a)

WHO has conducted for all the water companies in Viet Nam through the Ministry of Construction an awareness campaign to water safety plans (WSP) under Phase 1 (completed). Under WSP Phase 2 (ongoing), selected water companies, including Hai Phong participated in the implementation of the WSP and completed the pilots. To date, only Hue (fully) and Hai Phong (partly) have completed Phase 2 and supplied drinking water over the service area.

## **Corrective Action Plan**

The proposed subproject financed by ADB under PFR2 (MFF0054-VIE) includes the rehabilitation and upgrading of the existing An Duong Water Treatment Plant to a capacity 200,000 m<sup>3</sup>/day to address the demand of the urban population and improve operational efficiency. The preliminary engineering designs (included in the FSR and project documents) include environmentally sound design features and treatment technology. In addition to the overall improved management of water, the proposed design ensures that the above stated findings are addressed, including new chlorination facilities to cover for the existing and the new plant. Environmental management plans have also been prepared to ensure the compliance of occupational health and safety standards.

**Site Visit PHOTOS (June 2012): An Duong WTP 100,000 cmd**

**Entrance gate (high density urban area of Hai Phong) Note on temple next to the WTP**

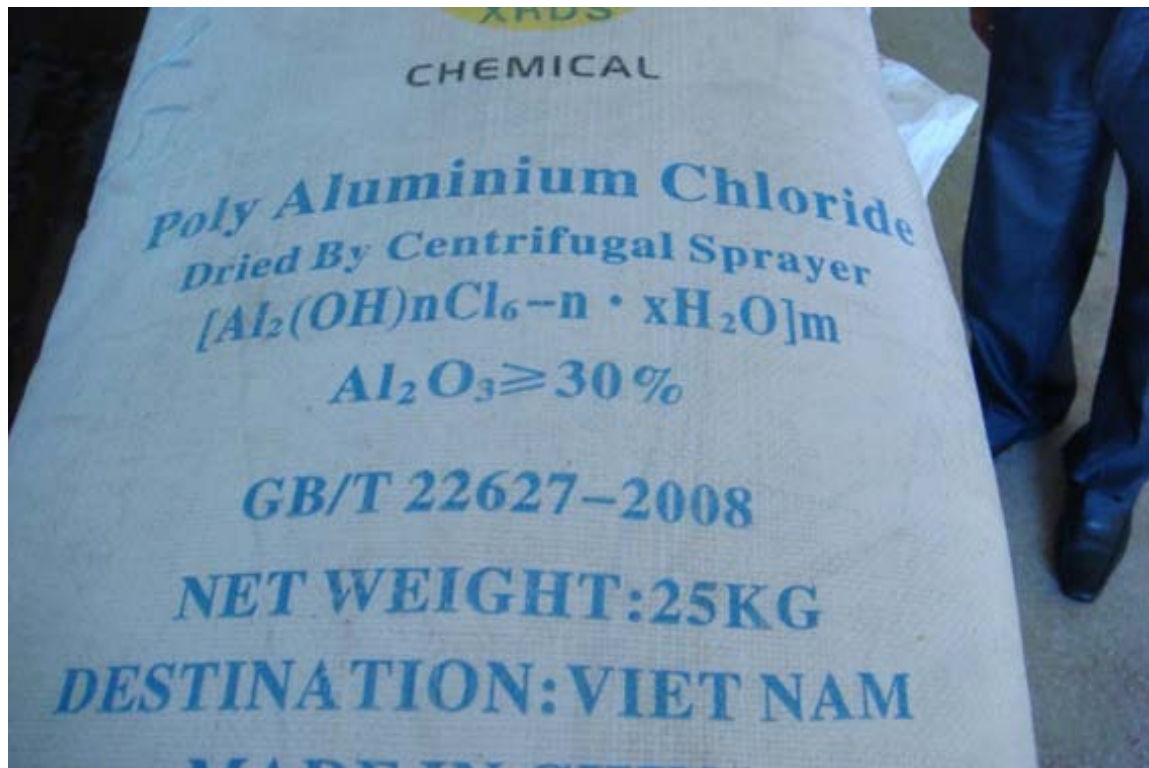


**Main office building**





Chemical PAC and Chlorine Gas tanks for pre and post chlorination



## Pre-Sedimentation and Sedimentation tanks





**Dual Media (Anthracite and Sand) filter**



**Control panel for filtration and safety notice**





Chlorine gas tanks and house and safety equipment







### Sludge Treatment (sludge drying beds)





